

# ECO- PRODUCTS DIRECTORY 2008



For Sustainable  
Production & Consumption



ASIAN PRODUCTIVITY ORGANIZATION



ECO-PRODUCTS  
DIRECTORY 2008

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Production & Consumption



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### **Environmental initiatives in developing the *Eco-products Directory 2008***

The *Eco-products Directory 2008* is printed on Eco Mark-approved and Green Purchasing Law-compliant matte-coated paper, of which 70% is recycled paper and the other 30% is virgin pulp from forests managed to be socially, economically, and environmentally sustainable. In addition, soy-based ink was used in the waterless printing method for minimum environmental impact.



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# Eco-products Directory 2008

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# Foreword

The Asia-Pacific region has become a world center of manufacturing with its abundant, hardworking labor force. The Asian Productivity Organization (APO) strongly believes that greening supply chains is one of the best concepts aimed at linking manufacturing with sustainable economic development in the region. More specifically, the goal is to incorporate consideration for the environment into every stage of the supply chains, from the very beginning of the product life till the end, making all chains green. The APO selected the greening of supply chains as a main theme and is working to ensure that Asian governments and enterprises promote the use of environment-friendly products and services as a fundamental strategy.

The fourth edition of the *Eco-products Directory* is being released in conjunction with the opening of the Eco-products International Fair 2008 in Hanoi, Vietnam, in March. The publication has been extensively revised and updated and is now even easier to use and understand. Nearly 20 pages have been added, including enhanced descriptions of many features and new topics such as “rationale for the *Eco-products Directory 2008*” and “main news and topics related to the environment.”

While the global warming issue forces us to make efforts to use resources and energy efficiently and to reconsider socioeconomic activities and lifestyles that involve large volumes of production, consumption and waste, more than 700 products or services are contained in the *Eco-products Directory 2008*, especially more than 400 are categorized as effective in preventing global warming. I hope that this publication will contribute to an appreciation and expansion of eco-product and -service markets in the Asian-Pacific region.

Our sincere thanks go to Professor Ryoichi Yamamoto, Chairperson of the Committee on the Eco-products Database, and all members of the working group for their dedicated leadership and efforts that made this publication possible.

Shigeo Takenaka  
Secretary-General

Tokyo  
January 2008



# Background

The Green Productivity (GP) concept is a strategy for enhancing productivity and protecting the environment. Based on the understanding of this strategy as an effective method for enabling sustainable development in the Asia-Pacific region, the Asian Productivity Organization (APO) has provided training courses on GP, organized a series of Eco-products International Fairs (EPIFs), and published and disseminated several editions of the *Eco-products Directory*. The core projects covered under the GP concept include greening supply chains, energy efficiency, the 3Rs (reduce, reuse, and recycle), and the training of trainers so that member economies can continue to promote and implement the concept on their own.

The APO held the first EPIF in 2004 in Kuala Lumpur, Malaysia, the second in 2005 in Bangkok, Thailand, and the third in 2006 in Singapore. The number of visitors increased for each. The EPIF 2006 attracted about 34,000 visitors, more than three-fold that in 2004. The APO will hold the fourth EPIF in March 2008 in Hanoi, Vietnam.

The *Eco-products Directory* was published annually between 2004 and 2006 to coincide with the opening of the respective EPIFs. The newest edition, the *Eco-products Directory 2008* will also be available at the opening in Hanoi. It will be distributed to governmental authorities and environmental organizations in Asia and beyond, and during high-level international conferences such as major environmental exhibitions in Japan and overseas. The APO also plans to distribute this directory to concerned parties at the G8 Hokkaido Toyako Summit to be held in July 2008.

The data contained in this directory are eco-products and -services developed by environmentally advanced enterprises in Asia-Pacific economies. The APO's goals are to incorporate consideration for the environment into every stage of the production process, including the acquisition of raw materials, purchasing of parts, shipment of environment-friendly products, product and service use, and eventual recycling and disposal. The APO believes that this directory contributes to sustainable development in the Asia-Pacific region through greening supply chains and hopes that governments and business in the region will promote the use of environment-friendly products and services as a fundamental objective.





## Dear Readers

More attention was paid to environmental issues in 2007 than ever before. Arctic sea ice is melting at a rate faster than anything seen in more than 30 years. The cost of crude oil and rare metals is rising with unprecedented speed, directly impacting our lives. Large quantities of disposable plastic and electronic products are being exported, creating a serious problem for society. The Intergovernmental Panel on Climate Change released its 4th Assessment Report compiling all of the latest findings related to global warming. Not only did it reveal a nearly universal consensus on the assertion that human activities are the cause of global warming, it warned that major disruptions in our health, ecosystems, industries, social infrastructure, and other areas would result if no action were taken.

To make the right decisions to guide us toward being an environmentally friendly society, each one of us must have a proper understanding of the answers to the following two questions:

“What is happening in society now?”

“What I can do to help society resolve the problems facing it?”

Industry can contribute to this effort by providing goods and services that are environmentally friendly or that reduce their environmental impact. Such products and services are referred to as “eco-products.” Industry is actively working to develop eco-products and -services and to make them widely available to help society. However, no matter how wonderful eco-products may be, if they do not become sufficiently popular to replace existing products, they will not be effective in lessening environmental impacts. Therefore an effort needs to be made to inform general consumers of the types of eco-products and -services available.

The *Eco-products Directory* has been published since 2004 and offers a comprehensive guide to the various eco-products offered by companies. The *Eco-products Directory 2008* offers consumers:

- Straightforward listings of more than 700 leading-edge eco-products; and
- Clear explanations of the varieties and characteristics of eco-products.

In addition, this year’s directory contains the following explanatory information prior to the eco-product listings to help consumers better understand current eco-product-related trends:

- A summary of the year's major environment-related developments to give consumers an overview of environmental and social trends for the year;
- Easy-to-understand explanations of the characteristics and features of current eco-products; and
- A totally revamped design, such as the introduction of icons, for visual emphasis on eco-product features.

To ensure that all of the above were successfully incorporated into the *Eco-products Directory 2008*, the Eco-products Database Working Group held multiple meetings and discussions aimed at crafting and tailoring the information contained to ensure that it is genuinely useful in helping consumers better understand the contents of the directory.

2008 will be an extremely important year for the world. The first commitment period of the Kyoto Protocol has begun. Countries throughout the world are working in unison to reduce emissions of greenhouse gases to meet their targets. The focus of discussions by world leaders at the 2008 G8 Summit to be held by Lake Toya in Hokkaido, Japan, will be on measures to combat global warming. In People's Republic of China, the Beijing Olympics has prompted the government to take action for environmental improvement and management. Governments and people will have a great many discussions about a variety of issues, such as reducing carbon footprints through the sale of products bearing environmental labels, introducing and promoting carbon offsets, greater implementation of the CDM and JI under the Kyoto mechanisms, and the introduction of carbon taxes and emission trading as economic mechanisms. An integral part of all of those will be the popularization and widespread use of environmental impact-reducing technologies and eco-products. Therefore, we believe that the *Eco-products Directory 2008* is a tremendously valuable resource.

My heartfelt thanks go to the organizations those products and services are listed on this directory, the committee and working group on the Eco-products Database, and the Society for Non-Traditional Technology. Publishing the *Eco-products Directory 2008* did not come without their cooperation. I would like to express my sincere gratitude to all the parties concerned.

**Ryoichi Yamamoto**

Professor, Institute of Industrial Science & International Research Center  
for Sustainable Materials, University of Tokyo  
Chairperson of the Committee on the Eco-products Database of the APO  
Vice chairperson of the GP Advisory Committee of the APO

## 1

# Main news and topics related to the environment

2006

Sep



**Steep rises in nonferrous and rare metal prices**

Oct



Asia 3R Conference held in Tokyo, participated in by 19 Asian countries and 8 international organizations



“Preparatory Study for the EuP Directive” conducted on 14 electrical products

Nov



Drastic rises in prices of metal materials caused by a 15% increase in export taxes of People's Republic of China

Dec



Toyota ranked first among manufacturers in the 10th Environmental Management Survey



**Stronger measures for the prevention of asbestos damage in Japan**



Global warming



Air/Water/Soil



Chemical substances



Waste



Resource



Design



Energy saving



Production

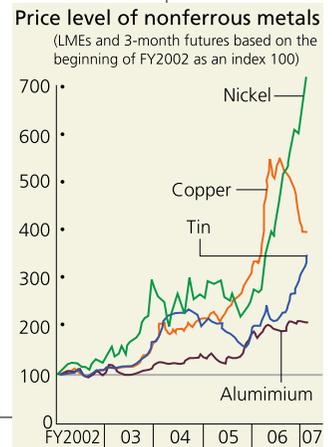
## List of Abbreviations

Abbreviation	Full Title
APEC	Asia-Pacific Economic Cooperation
APP	Asia-Pacific Partnership on Clean Development and Climate
CDM	Clean Development Mechanism
COP13	Conference of the Parties to the UNFCCC
CPU	Central Processing Unit
EPA	Environmental Protection Agency
EU	European Union
EuP	EU Directive on Energy Using Products
GRI	Global Reporting Initiative
IEC	International Electrotechnical Commission
IPCC	Intergovernmental Panel on Climate Change
JOGMEC	Japan Oil, Gas and Metals National Corporation
LED	Light Emitting Diode
LME	London Metal Exchange

## Sharp rises in nonferrous and rare metal prices

Growing concerns about resources are triggering resource enclosure problems in many countries, causing constant sharp rises in nonferrous and rare metal prices. The distributions of nonferrous and rare metals are uneven, and rapidly increasing demand for these metals in newly developing countries contributes to the problem. The use of such scarce resources could be restricted but comprehensive measures on a global scale are required to promote technological development to ensure performance and quality while establishing recycling programs to use scarce resources efficiently.

Price levels of nonferrous metals <February 22, Nikkei Newspaper>



## Stronger measures for the prevention of asbestos damage in Japan

According to the survey by the Ministry of Health, Labour and Welfare, Japan, 1,050 asbestos-related mesothelioma patients died in 2006.

The number is predicted to increase further.

During demolition work of houses and buildings, measures must be taken under the act. However, there was not sufficient information on clarifying how much asbestos was used in building materials. In response, the Japanese government has published an asbestos-containing materials database.



Asbestos

NEDO	New Energy and Industrial Technology Development Organization
NITE	National Institute of Technology and Evaluation
NPO	Nonprofit Organization / Not-for-Profit Organization
PM	Particulate Matter
PRTR	Pollutant Release and Transfer Register
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RITE	Research Institute of Innovative Technology for the Earth
RoHS	Restriction of Hazardous Substances
Sarbanes-Oxley act	Public Company Accounting Reform and Investor Protection Act of 2002
TEQ	Toxic Equivalent
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
ANRE	Agency for Natural Resources and Energy, Japan
METI	Ministry of Economy, Trade and Industry, Japan
MLIT	Ministry of Land, Infrastructure and Transport, Japan

2007  
Jan

-  Republic of Korea establishes REACH Business Support Center in compliance with EU chemical substance legislation
-  Republic of Korea's first success in development of environmentally conscious flame retardants
-  Republic of Korea establishes the first climate change fund
-  Japanese Prime Minister Abe directs Minister of the Environment to plan strategies for Japan to become a "nation of the environment"
-  China-Japan-Korea Ministerial Meeting held on science and technology to discuss environmental cooperation
-  Standards for carbon-offsetting schemes proposed by UK government
-  First national report on climate change released by ministries and agencies, including Ministry of Science and Technology, People's Republic of China
-  Development Bank of Japan finances Nara Co-op for environment-friendly management
-  **Japanese home appliance companies cut recycling charges** ●
-  Draft plan of standards for lead contamination at rifle ranges developed by Japanese Ministry of the Environment
-  Bioethanol Japan initiates production of biofuels from used wood-based building materials

## Feb

-  Stricter surveillance on illegal imports of used electronic devices from other countries in People's Republic of China
-  Japan-Mongolia dialogue on environmental policies to encourage international environmental cooperation
-  Iwate University, Japan, develops RoHS-compliant, hexavalent chromium-free metal-coating technology
-  UNEP establishes expert working group on effects of mercury on human health and the environment
-  US government supports Vietnam in Agent Orange clean-up
-  East Asia/Southeast Asia 3R Expert Workshops held in Manila, Philippines
-  **IPCC releases 4th report** ●
-  "It is possible to reduce CO<sub>2</sub> emissions by 70% by 2050," assessed by a Japanese national research institution
-  CitiGroup announces 74 awards for commitment to climate change
-  UNEP proposes new treaty on mercury usage in 2020 and 75% reduction compared to 2000

## Mar

-  Beijing CO<sub>2</sub> Diet Manifesto proclaimed in People's Republic of China
-  RoHS translated into Chinese, ready to be implemented by most manufacturers
-  **Mass generation of e-waste and countermeasures** ●
-  8 German tourist agents join Carbon Neutral Project
-  People's Republic of China starts Mine Gas CDM Project in Huaibei
-  UK recommendations on EU Greenhouse Gas Emissions Trading Scheme
-  World Bank cohosts ministerial meeting on Environment and Energy for Sustainable Development
-  USA and Brazil engage in technological transfer to third world for further production of bioethanol
-  **Biomass power generation by Japanese electricity companies** ●

## Japanese home appliance companies cut recycling fees

Home appliance companies in Japan were considering a reduction in the recycling fees for used air-conditioners from 2008. The main reason was the improved recycling budget subsequent to the rise in the price of copper produced from recycled air-conditioners. Another reason was the development of advanced waste treatment systems as well as recycling designs to support the systems from the initial stage of home appliance production.



At a recycling plant

## IPCC releases 4th report

The Intergovernmental Panel on Climate Change (IPCC) released its 4th Assessment Report (Working Group 1: Feb. 2007, Working Group 2: Apr. 2007, Working Group 3: May. 2007). The report confirms that the significant increase in greenhouse gases in the atmosphere since 1750 is human induced and states that it is almost certain that human activities are the cause of global warming. Moreover, the report concludes that it is beyond doubt that all the changes occurring in the atmosphere, oceans, glaciers, and ice caps indicate global warming.

The report also confirms that the average global temperature rose by 0.74 degrees over the last century and predicts that it will continue to increase during this century by approximately 1.8 to 4.0 degrees. Meanwhile, the sea-level rise is predicted to continue from 28 to 58 cm by the end of this century.



Dr R.K. Pachauri, Chairman of the IPCC, delivering the 4th Assessment Report (AP Images)

## Mass generation of e-waste and countermeasures

In line with global economic growth and population increase, which are particularly significant in Asia, the amount of waste is also growing worldwide, including electrical and electronic waste (e-waste) and medical waste. The European Environment Agency states that at present e-waste is increasing about three-fold more rapidly than municipal waste and estimates that the total amount of e-waste generated worldwide is some 40 million tons per year.

Solving the E-waste Problem (StEP), an international initiative, was initiated by the United Nations University to encourage cooperation between the public and private sectors so that internationally standardized procedures are set for recycling electrical and electronic appliances.



Recovered electrical and electronic waste (e-waste)

## Biomass power generation by Japanese electricity companies

At present, electricity is generated mainly using thermal power, hydraulic power, and nuclear power. Japanese electricity companies have jointly launched the practical application of biomass power to promote the utilization of renewable energy. For example, biomass materials such as sewage sludge produced during the sewage treatment process, wood-based biofuels combusted with coal, methane gas produced from fermented food waste, and poultry manure are already used to generate electricity. Furthermore, the development of more efficient power generation systems using wood-based biofuel and the development of small direct-injection/combustion-type power generation systems are in progress, indicating that biomass power generation will increase in the future.

## Apr

-  Republic of Korea releases RoHS in Korean and Act for Resource Recycling of Electrical/Electronic Products and Automobiles
-  People's Republic of China plans Car-free Day in 106 cities
-  Germany announces Climate Agenda 2020 to achieve 40% CO<sub>2</sub> reduction
-  Canada imposes greenhouse gas/air pollutant reduction targets on industries
-  4.2 trillion yen to implement soil contamination measures, estimated by Japanese Ministry of the Environment
-  The Japanese Ministry of the Environment creates a manual of asbestos control during earthquake disaster
-  **High expectations for eco-cars** ●
-  Tokyo Institute of Technology announces process for producing electrically conductive alumina cement

## May

-  Japanese Agency for Natural Resources and Energy publishes results of material flow survey to secure stable rare metal supplies
-  Strategic Approach to International Chemicals Management (SAICM) holds Asia-Pacific regional meeting in Bangkok
-  Japanese Ministry of the Environment produces An Easy Guide to Chemicals—Detergents and Chemicals for e-learning
-  Greenhouse gas emissions increased by 7.8% since 1990 in Japan as of 2005
-  US President Bush proposes new international framework for climate change measures
-  Japanese government announces “co-benefits” of global warming measures in support of developing countries
-  “Carbon trading prices will triple by 2006,” announces World Bank
-  Copper reduction by 10%—resource saving by Toyota
-  **Yellow dust – transnational air pollution** ●
-  “No asbestos threats in the air”, confirms the survey report by the Japanese Ministry of the Environment
-  Good-bye to the blast furnace—Republic of Korea's POSCO introduces new iron-smelting furnace

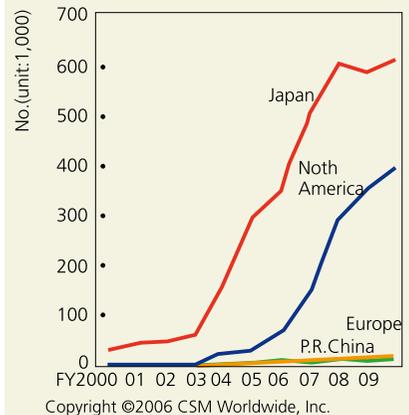
## Jun

-  People's Republic of China bans sales of CFC coolant/blowing agent-containing home appliances from September
-  “Strategies for the 21 Century to Become an Environmentally-conscious Nation” approved by the Japanese Cabinet
-  Home appliance companies in Japan reach the recycling target for 2006, meeting the legal standards
-  JOGMEC develops technology to recover rare metals from used cars
-  Concerns over plastic waste treatment heightened by EU Waste Directives
-  The Japanese Ministry of Economy, Trade and Industry proceeds with a review of the Law for PRTR and Promotion of Chemical Management
-  Japan Article Management Promotion-Consortium (JAMP) verifies Guidelines for the Management of Chemical Substances in Products
-  EU implements REACH regulations
-  **G8 Summit talks on global warming** ●
-  23 major financial services companies as members of the United Nations Environment Programme's Finance Initiative announce statements about greenhouse gases for the G8 Summit
-  Japanese government formulates Strategies for the 21st Century to Become an Environmentally-conscious Nation

## High expectations for eco-cars

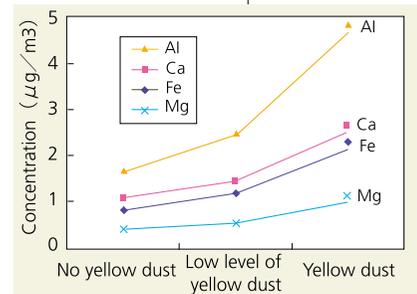
Recently, expectations for eco-cars have been increasing from the perspective of environmental protection. Fuel consumption by vehicles that use petrol has been made more efficient by improving the performance of engines and drive-train systems as well as by reducing body weight. The launch of the Toyota Prius in 1997 heightened expectations for hybrid cars that use both electric motors and petrol engines. Subsequent to sharp rises in crude oil prices, more than 1 million hybrid cars have been sold worldwide, and these eco-cars appeal to consumers. While the fuel-cell car is under development, there are increasing expectations that eco-cars will halve petrol usage compared with conventional vehicles. Meanwhile, diesel-engine vehicles are also fuel efficient. The main automakers and suppliers therefore have been accelerating their R&D on advanced exhaust-purification technologies.

Transition of the number of hybrid car product in each region including forecast



## Yellow dust – transnational air pollution

East Asia increasingly suffers yellow dust. The Ministry of the Environment, Japan (MOE) has been conducting research on yellow dust since 2002, in the typical yellow dust season to identify particle size distribution and analyze components. The report states that yellow dust contains high levels of metals from minerals and the contents of sulphate and fluoride, supposedly produced as a result of combustion, change according to weather conditions. These factors therefore influence the form in which yellow dust is blown in various ways. Incidentally, big yellow dust storms were recorded in 2006 and 2007, and MOE will include the results of studies on these cases in the final report.



Concentrations of metals in airborne dust (by MOE)

## G8 Summit discusses global warming

The Group of Eight (G8) Summit 2007 took place in Heiligendamm, Germany, where future global actions on climate change were discussed. It is vital that major economies that use the most energy and generate the majority of greenhouse gas emissions agree on a new global framework by the end of 2008, which would contribute to a global agreement by 2009.

The G8 will consider seriously the decisions made by the EU, Canada, and Japan which include at least halving of global emissions by 2050. Because the top Japanese government official stated that climate change would be the top priority on the agenda for the G8 Hokkaido Toyako Summit in July 2008, it is hoped that the G8 will achieve additional progress in setting a global goal for emission reductions.



World leaders at the G8 Summit 2007, Heiligendamm

## Jun

-  Dutch government releases Climate Change Monitoring Report 2006 by Meteorological Agency to incorporate climate change measures in policies 2007–2011
-  The Japanese Meteorological Agency releases “Climate Change Monitoring Report 2006”
-  UN Executive Board of Clean Development Mechanism (CDM) approves Ricoh’s reforestation methodology
-  **Material industry in urgent need of low-cost manufacturing methods**

## Jul

-  Republic of Korea: Basic Bill for Sustainable Development passes Diet
-  People’s Republic of China promotes production and use of energy-saving, environment-friendly cars
-  The Japan Environment Association sets out Eco Mark standards for reusable and resource-saving containers
-  Japanese firms intensify support for new EU REACH regulations
-  NPO of Minamata City market educational tours to Republic of Korea
-  Joint declaration by Germany and USA (Florida) to consider carbon market partnership to tackle climate issues
-  UK initiates Climate Change Campaign in media
-  Asia-Pacific Partnership (APP) on Clean Development and Climate—4th Policy Implementation Committee Meeting held
-  “1kg CO<sub>2</sub> Reduction per Person per Day” campaign supported by financial institutions
-  The Ministry of Economy, Trade and Industry and the Ministry of Land, Infrastructure and Transport of Japan introduce a new fuel cost calculation system for car catalogues
-  Japanese Ministry of the Environment sets up working group to find causes of photochemical oxidant increase
-  1.2 billion yen fine on automakers—air pollution lawsuit settled in Tokyo

## Aug

-  **Environment-conscious sports events on global scale**
-  Republic of Korea (Gwacheon) announces 5% greenhouse gas reduction by 2015 compared with 2005
-  Discharge into sea exceeds environmental standards, confirms People’s Republic of China
-  20% Energy Saving Campaign initiated by 50 NGOs in People’s Republic of China
-  Beyond standards—excess chemical residues found in vegetables in People’s Republic of China
-  Himalayan glaciers “melting fast”—more global warming threats in Southeast Asia
-  President Bush proposes a 10-year plan to reduce petrol use by 20%
-  Morgan Stanley starts carbon neutral services in USA
-  Lively discussions by Japanese Ministry of the Environment on tackling natural heavy metal pollution
-  Nissan and Honda develop catalyst technology for clean diesel vehicles
-  Toshiba progresses with printing technology for organic EL substrates

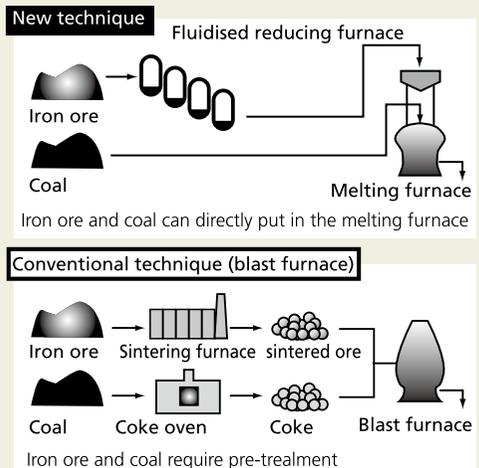
## Sep

-  People’s Republic of China publishes mid- to long-term renewable energy development plan
-  **More recycling of food waste**
-  Japanese Ministry of the Environment contributes 150 million yen to fund establishment of 3R promotion for developing countries in 2008
-  International conference on protecting ozone layer ends with governments agreeing to bring forward restrictions on ozone-depleting substances

## Material industry in urgent need of low-cost manufacturing methods

Subsequent to steep rises in resource prices, the material industry has been tackling the development of low-cost production techniques. Major iron/steel and nonferrous metal companies developed technology that uses low-grade mineral ores. Chemical firms have been promoting the use of materials other than naphtha. The development of processing technologies utilizing low-grade materials that can be disposed of at low cost and have low environmental impact will be the key for material manufacturers in improving their competitiveness. For example, the new iron-smelting process developed by the Republic of Korea's Posco enables the direct insertion of iron ores and coal into the smelting furnace, thus bypassing the preparation process altogether.

### New iron-making process developed by Posco



New iron-smelting process developed by the Republic of Korea's Posco

## Environmentally conscious sports events on a global scale

Environmental consciousness is not only about providing eco-products and eco-services. It is also considered at various types of events. Large-scale sporting events play a significant role in raising environmental consciousness. For example, the FIFA World Cup in Germany in 2006 supported a scheme to reduce greenhouse gases produced in developing countries by implementing carbon offsetting, due to which the CO<sub>2</sub> gas emitted during the event was virtually zero. The Beijing 2008 Olympic Games also involves a variety of environmental measures including waste treatment, traffic control, water treatment and a perfect provision of a green environment.

## More recycling of food waste

As consumers lifestyles become more diverse, huge quantities of food waste are generated. The annual volume of food waste in Japan is approximately 110 million tons and food waste recycling has been promoted nationwide. As a step forward in promoting the recycling of food waste, such as unsold food products from supermarkets and leftovers from catering establishments, the Ministry of the Environment and the Ministry of Agriculture, Forestry and Fisheries of Japan have set target recycling values by food category for food providers to comply. These targets are: 85% for food manufacturers, 70% for food wholesalers, 45% for food retailers and 40% for caterers. These targets are to be reached by 2012.

### Food waste recycling by registered food providers and recyclers – examples



By food providers



Food waste collection truck



By registered recyclers

## Sep

-  Fuji Xerox develops chemical substance information system to team up with 1000 domestic and overseas firms
-  France releases report on health risks from climate change
-  APEC sets targets to be achieved through energy efficiency improvement and reforestation
-  US EPA teams up with India's largest oil company to reduce methane gas emissions
-  Arctic ice area hits all-time low
-  Japan-China agreement on energy-saving project at 2nd Japan-China Energy and Environmental Forum
-  **Soil contamination puts pressure on economic activities**
-  Photochemical oxidant standards yet to be met by most measurement stations
-  Increasing use of white LED products for PCs and cars
-  Mitsui Engineering & Shipbuilding develops new technology with higher bioethanol productivity
-  RITE and Honda develop technology to synthesize polypropylene from weeds
-  Obayashi develops biodegradable pipes for tunnel construction

## Oct

-  **Nobel Peace Prize 2007 goes to IPCC and Gore**
-  IEC finalizes plan for international eco-design standards
-  **Steep rise in crude oil prices—\$100 a barrel**
-  Japanese Ministry of Agriculture, Forestry and Fisheries organizes Forum for Environmentally-Conscious Pest Control
-  World Environment Day 2008 celebrated in New Zealand with focus on low-carbon economy
-  Japanese government starts pilot sales of bioethanol-containing (3%) petrol (E3) in Osaka
-  UNEP says regulatory systems will be most effective in reducing greenhouse gas emissions from buildings
-  World Tourism Organization holds 2nd International Conference on Climate Change and Tourism
-  Reduce, Reuse, and Recycle (3R) Month promoted by 8 Japanese ministries
-  Asia-Pacific Summit held in Oita, Japan

## Nov

-  Republic of Korea releases EuP manuals
-  Japanese government intensifies international regulations for waste disposal into sea

## Dec

-  Ministry of Economy, Trade and Industry and Ministry of the Environment of Japan add LCD TVs to list of recyclable home appliances
-  Japanese Ministry of Land, Infrastructure and Transport promotes power generation using waste wood-based building materials, classification rules, and quality standards
-  Investors' awareness of social responsibilities heightened
-  Japanese version of SOX Act underway
-  UNFCCC COP13 held in Indonesia, where global warming prevention post-Kyoto debate creates Bali Roadmap
-  Republic of Korea to join CO<sub>2</sub> reduction scheme in 2013, with huge impact on Korean industries
-  Republic of Korea determines climate change measures including carbon tax and expansion of nuclear power generation
-  Japanese government makes first purchase of greenhouse gas quotas from Hungary
-  Average global land temperature increased 0.67 degrees since 1880

## Soil contamination puts pressure on economic activities

Land with value much lower than its potential with few uses because of soil contamination is called a "brownfield." Owners of brownfields struggle to sell them because the cost of tackling soil contamination may be prohibitive. Many cases have been reported of brownfield owners giving up on selling their land. The Japanese Ministry of the Environment reported that brownfields in the country total 110,000 ha, with clean-up costs estimated at 17 trillion yen.



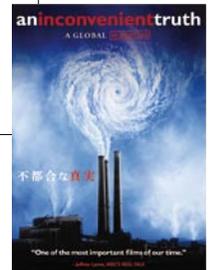
Brownfield being treated

## Nobel Peace Prize 2007 goes to IPCC and Gore

The Norwegian Nobel Committee announced on 12 October 2007 that the Nobel Peace Prize for 2007 was to be shared equally by the Intergovernmental Panel on Climate Change (IPCC) and former US Vice President Albert Gore, Jr. for their efforts to disseminate knowledge on man-made climate change and to lay the foundations for the measures needed to counteract such changes. The committee hoped that the work of the IPCC and Gore would increase the focus on decisions and processes necessary to protect the global climate, thus reducing threats to mankind's security



an inconvenient truth  
– special collector's  
edition, Paramount  
Japan K.K.



## Steep rise in crude oil prices—\$100 a barrel

Crude oil prices rocketed in November 2007 to almost \$100 a barrel as oil-producing countries were becoming politically unstable and the demand for petrol in newly developing economies rose. The prices of everyday items such as plastic and food products were also affected. In the past, the extraction of oil from oil sand was considered economically unfeasible but now it has developed into a full-scale business. It is difficult to predict oil prices, and steep price increases are a major worry to consumers as well as to businesses.

# 2

## Rationale for *Eco-products Directory 2008* including related products

### 1. Food products

#### Three reasons why food is the center of attention this year

Sustainable food procurement became a key issue in 2007 for three main reasons: 1) The main exporting countries suffered drought and abnormal weather conditions, resulting in crop yield declines, especially in Australia. 2) Food prices rose sharply in response to rapidly increasing demand for biofuel. Increases in prices of grains for animal feed also directly affected meat and dairy product prices, which in turn increased total imports of commercial products in such countries that rely on imports. 3) In countries that registered rapid economic growth, such as People's Republic of China and India, the demand for food increased explosively.

#### Steady increase in food-related energy

The food situation worldwide is a very serious matter, presenting many problems in terms of environmental protection and sustainable food supplies. One problem is the increased use of chemical fertilizers and energy, which assures high production efficiency. The increased use of chemicals in crop cultivation, however, continues to cause adverse effects on soil, water, and the atmosphere.

Another problem is increasing **food waste** occurring with the diversification and enhancement of the food system, which is a huge environmental challenge for the Asia-Pacific region. Dietary habits are changing from fresh to highly processed food, individual sales rather than bulk sales, and ready-cooked meals instead of home cooking as the catering industry expands. In addition, food products are more readily available as retail and distribution systems improve. Commodities, consumption, and industrial structures are also taking different forms, while problems including the increased use of packaging materials, food waste, and energy consumption are becoming evident.

For example, Japan is still struggling to improve its food self-sufficiency from a low ratio of 40%. This means that much of the food on dinner tables in Japanese homes is from abroad. Global warming and natural disasters reduce crop yields. Importing food from faraway countries is very energy-consuming in terms of transport (**food mileage** increase). People's Republic of China has recently changed its status from a food exporter to a food importer. These facts all contribute to the very serious question of how to sustain food supplies.

#### Achieving sustainable food supplies

Asian economies have made consideration for the eco-friendly food products by promoting fresh and processed products using organic, specially

cultivated, and locally produced food while refraining from the use of excessive packaging. Moreover, product ID numbers such as EC-6-003 and EC-6-004 refer to weight-saving products packaged in containers with different shapes and/or thinner materials. Also, the use of waste wood to produce the paper packaging for drink containers (product ID numbers EC-6-007 and EC-6-006) encourages the sustainable use of forest resources. These containers are also recyclable after use, like milk cartons. Product ID number EC-6-005 refers to whisky bottle tops made from used barrels and casks. This product also contributes to the efficient use of resources.

Marine Stewardship Council (**MSC**)-**approved** marine products are certified to be sustainable and appropriately managed and have been promoted by major supermarkets since 2006. Leading Asian food manufacturers are also developing a range of environment-conscious products. Thus, environmental awareness has been steadily established among food manufacturers and retailers.

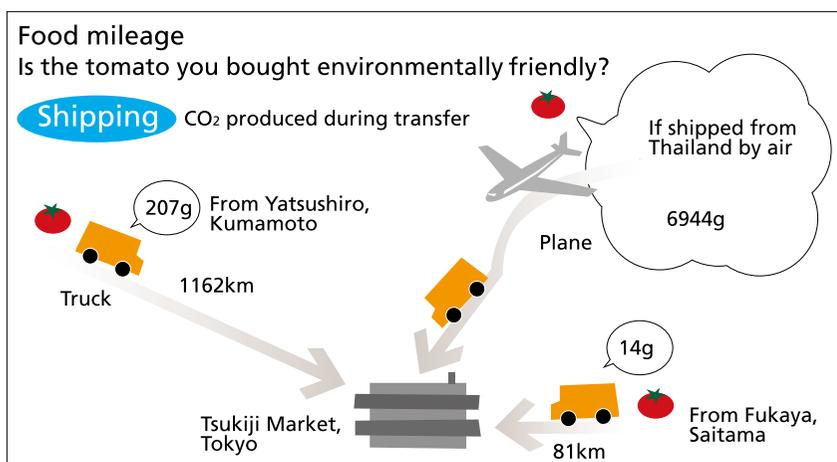
-  **EC-6-003**  
<beer>
-  **EC-6-004**  
<beverage>
-  **EC-6-007**  
<cartcan>
-  **EC-6-006**  
<milk cartons for infants and children>
-  **EC-6-005**  
<whisky>

In Japan, **the Institute of Life Cycle Assessment** carries out life cycle assessment research, while **the Green Purchasing Network (GPN)** is engaged in the formulation of guidelines for purchasing environment-friendly food products. While much effort is made to promote such food products, initiatives to encourage consumers, i.e., purchasers, to buy them are soon to be implemented.

In the UK, the Carbon Trust, a government-funded independent company, formulated and announced guidelines for displaying life cycle CO<sub>2</sub> emissions on products. Walkers Snacks Ltd. took a progressive approach by displaying **carbon footprint** figures on its bags of potato crisps.

## Hopes for green purchasing

Food policies to guide decision making on which types of food ingredients and food products to purchase, obtain and consume are closely related to global environmental issues, and consumers are encouraged to choose environment-friendly items. Such products should be chosen not only by consumers who are already concerned about the environment but also by the majority of ordinary consumers on a daily basis. It is hoped that through activities like the ones mentioned here, **green purchasing** will gradually penetrate into consumers' everyday lives and environmental consciousness will be firmly established within the food industry.



Source by Shihoko Nemoto, Nihon University



CO<sub>2</sub> emission level displayed on a Walkers bag of potato crisps, UK



MSC logo

## 2. Resources and recycling

### Rare metals: the focus of attention

In recent years, the economies of Brazil, Russia, India, and People's Republic of China have made remarkable progress. In line with this progress, the demand for so-called rare metals, such as nickel and chrome, has increased drastically. Subsequently, sharp rises in metal prices have become the center of attention due to fierce competition for metal resources. Rare metals can be described as metals that occur rarely or those that are extremely difficult to extract. Some, such as titanium and silicon, are present in the earth's crust in large quantities but their ores are so difficult to smelt that they are classified as rare. Compared with base metals such as iron, copper, and aluminum, the quantity of rare metals is extremely low. Nonetheless, they are widely used in the basic materials industry (e.g., stainless steel) and in **high-tech fields** (e.g., electrode materials, high-performance magnets, and high-performance catalysts for flat-screen TVs). Rare metals are therefore indispensable to Asian industries.

### Problems in rare metal supply

The Asia-Pacific region has **the world's highest demand for rare metals**, and at the same time, it is a supplier of basic materials, including rare metals, and high-tech products. However, the supply structure is rather fragile because mineral resources are unevenly distributed and available in only some countries, metal production is also limited to specific countries, and supply is often disrupted by conflicts and facility accidents. Therefore, sharp rises in international prices often occur. Moreover, the rapid economic growth of newly emerging economies in recent years and subsequent fierce competition for metal resources have created a situation in which the Asia-Pacific region can no longer guarantee stable, sustainable supplies of rare metals. This is a difficult situation that can be described as "nothing comes from nothing." Under such circumstances, Asian economies are consolidating state control of rare metals. As one example, Japan has developed a **stockpile system** as a short-term measure to reserve the seven rare metals nickel, chrome, molybdenum, tungsten, cobalt, vanadium, and manganese. Other rare metals are as valuable as these seven, and Japanese industries that depend on high-tech materials want to be assured of the stable procurement of the entire range of metal resources, from rare earths to precious metals. It is risky to rely completely on exporters of metal resources, and technical measures such as boosting productivity in manufacturing, using general alternative metals, and promoting the recycling of used products are required.

#### EM-1-019

<cold-rolled  
special steel  
sheets>

ID number EM-1-019 is all-purpose stainless steel which does not contain such rare metals as nickel or molybdenum but ensures high corrosion resistance equivalent to SUS304 (18mass% Cr - 8mass% Ni stainless steel).

## Expectations for 3R technology and substituting technology

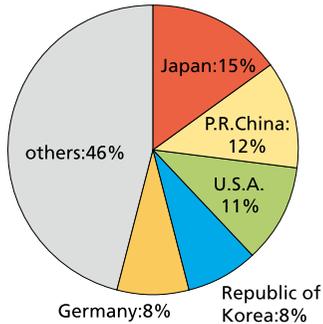
Points that must be kept in mind are: 1) rare metals create a huge impact on the environment during the smelting process, and 2) rare metals are most often used in unrecyclable products. Global environmental issues are a great concern to everyone. The Asian-Pacific region as one of the largest consumers could preserve resources by applying the world's most advanced recycling technology and substituting technology. To achieve this goal, the above-mentioned points must be fully recognized in radical technological innovation in which techniques can be developed to recycle and replace products currently unrecyclable and for which substitutes are not available. For example, items classified under product ID number ES-2-002 could be recycled as a raw material of tungsten carbide powder for superhard tools if defects rejected during the manufacturing process were collected.

ES-2-002  
<tungsten>

### Consumption of rare metals in the world

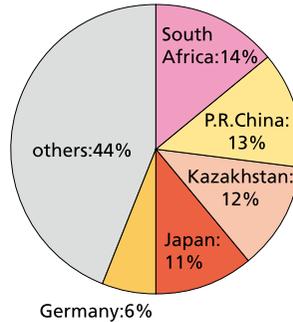
Ni

1,253,000 ton (2004)



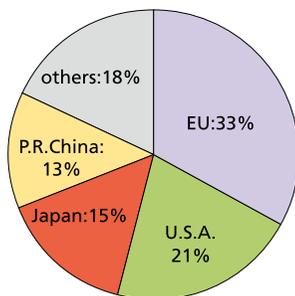
Cr

4,695,000 ton (2003)



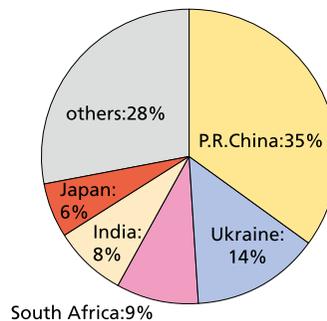
Mo

175,000 ton (2004)



Mn

19,630,000 ton (2001)



## 3. Energy

### Biomass: a foremost energy source

To reduce the use of crude oil for transport energy and to control greenhouse gas emissions, the adoption of **biomass fuels** (produced from organics of biological origin) as an alternative to automotive fuel which can be used in vehicles with conventional engines is attracting attention.

### Biofuels and carbon dioxide

In the growth process, biomass absorbs carbon dioxide in the atmosphere through photosynthesis. Because the amount of carbon dioxide burned as biofuel equals the amount of carbon dioxide absorbed during photosynthesis, this **carbon-neutral** concept implies that biomass fuels do not affect the level of carbon dioxide in the atmosphere, thus helping to control greenhouse gas emissions. The carbon-neutral concept also supports the development and application of biomass-based bioplastics (product ID number EM-2-006). In recent years, bioplastics have been used for making IT equipment (e.g., product ID numbers EP-9-007, EP-3-053, and EP-3-021). However, it should be noted that energy generated from crude oil, natural gas, and electric power is used during the process of producing biofuels from biomass, i.e., carbon dioxide is still emitted during biofuel production.

### Trends in using biomass fuel and issues to be addressed

Representative biofuels are **bioethanol**, an alternative to petrol, and **biodiesel**, an alternative to light oil. Bioethanol is produced from sugarcane, corn, and straw and wood. These organic materials contain molasses, starch, and cellulose, respectively, which are glycosylated as well as fermented to produce energy. Biodiesel is made from vegetable oil crops such as rapeseed and palm as well as from discarded cooking oil. Bioethanol is already commonly used in Brazil and the USA and biodiesel in the EU as automotive fuel. Biomass fuel is also used for power generation (e.g., product ID numbers EP-8-052, EP-8-029, and ES-2-005). Power generation from biomass fuel results in overall energy efficiency not only due to its carbon-neutral feature but also due to heat recovery.

At present, most biomass fuels tend to be produced using molasses, starch, and oil from plants due to the low material cost. This situation raises concerns about **competition against food supplies**. In the future, unwanted biomass, such as agricultural waste (e.g., rice straw and rice husk) and wood waste (e.g., discarded timber and leftover timber in forests), will therefore be used to produce biomass fuel to avoid competition against food supplies. This concept will become a major issue in biomass energy technology.

EM-2-006   
<polylactic acid  
fiber, resin, and  
materials>

EP-9-007   
<plastic cards>

EP-3-053   
<cellular/PHS  
telephone sets>

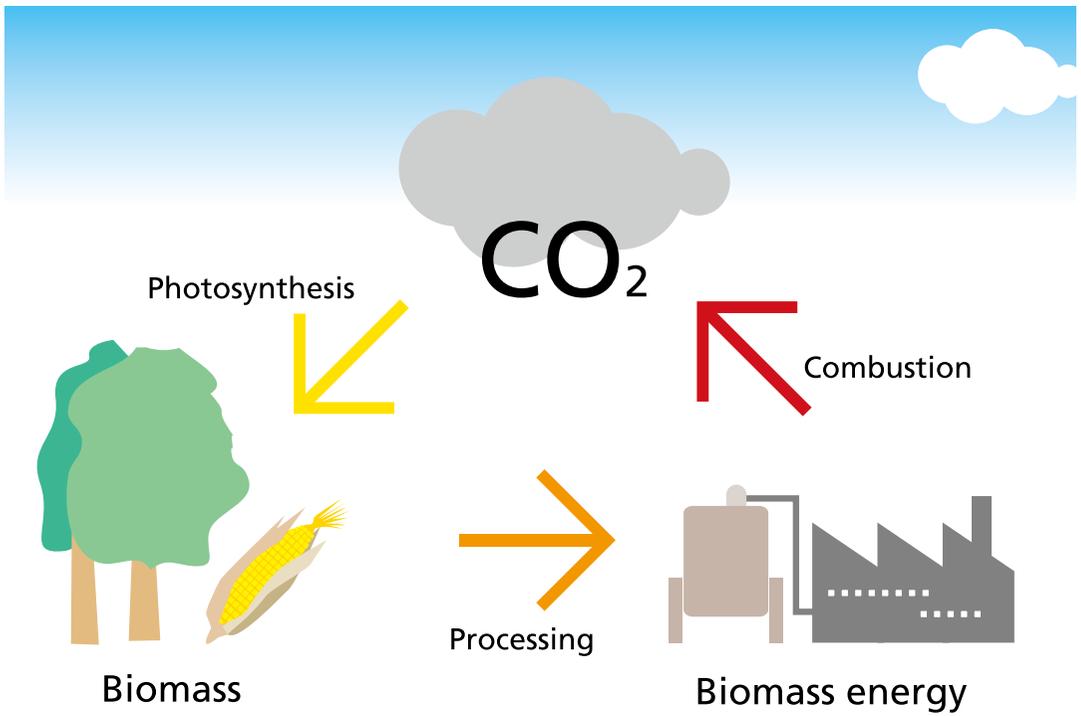
EP-3-021   
<full-color  
copying  
machines>

EP-8-052   
<generators>

EP-8-029   
<boilers,  
excluding  
hot-water  
boilers>

ES-2-005   
<biomass  
cogeneration>

Carbon-neutral concept



## 4. Chemical substances

### Products based on chemicals

Chemicals enrich our lives. For example, over-the-counter cold medicines contain numerous ingredients that may sound unfamiliar. Some reduce fevers and others relieve cough. On the other hand, an overdose can cause harm. Thus, chemicals can be medicines and poisons simultaneously. Therefore, consumers must “not use chemicals that are difficult to handle” and “handle chemicals appropriately.”

### Trends in products listed this year

Many products comply with the **Restriction of Hazardous Substances (RoHS)** legislation, which went into effect in the EU in 2006, are listed in the *Eco-products Directory 2008*. The RoHS directive prohibits the use of six specific substances, lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, and polybrominated diphenyl ethers. They are extremely hazardous if used in electrical and electronic products and then released into the environment. These substances are **“not to be used as they are difficult to handle.”** People's Republic of China and the Republic of Korea will soon implement similar regulations on chemicals. Various techniques have been developed to replace products that contain these six chemical substances.

#### EC-3-001

<communications cables>

For example, product ID number EC-3-001 are RoHS-compliant communication cables (flexible flat cables) used in many home electric appliances and office equipment. Product ID number EP-9-012 comply with RoHS by using lead-free solder while increasing power efficiency.

#### EP-9-012

<digital cameras>

Many of the household products listed in the *Eco-products Directory 2008* reflect the aim of reducing volatile organic compounds (VOCs). VOCs cause dizziness and nausea and are cited as one cause of **“sick building syndrome”** if inhaled in large quantities. New products are therefore being developed using safer substances without compromising performance.

#### EC-1-002

<fabrication of finished plastic products>

Insulators classified under product ID number EC-1-002 are a good example. They do not contain any VOCs. Instead, they utilize a spray-type polystyrene foam, which can also be a substitute for hazardous substances such as asbestos. Products classified under product ID number EP-7-009 use natural materials, thus preventing VOC contamination as well as condensation due to their humidity control function.

#### EP-7-009

<cement products>

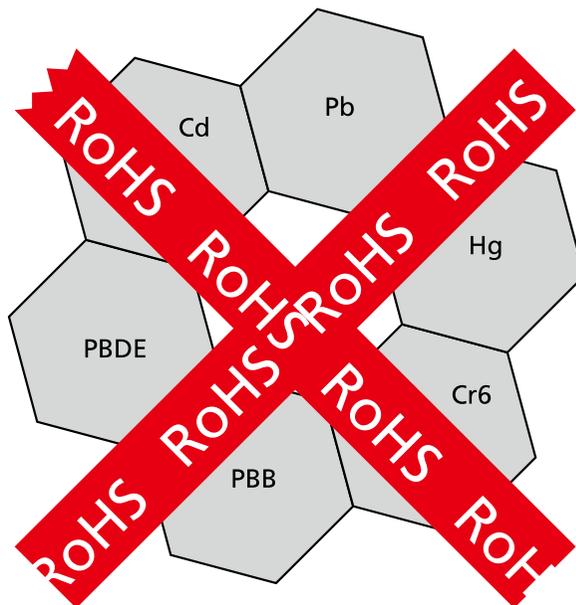
### Handling of chemical substances

One of the methods to “manage chemicals appropriately” is the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Producers are requested to stipulate the hazard level of a chemical substance clearly using the GHS-specified label. While the GHS is still a developing system, it is important in terms of promoting the appropriate handling of chemical substances.

### Balance between utility and risk

It is hoped that the European **REACH regulations** will result in the appropriate handling of listed hazardous chemical substances based on risk assessment rather than imposing a total ban on the chemicals. Such regulations are in force not only in Europe but also in Japan where the Law Concerning Examination and Regulation of Manufacture, etc. of Chemical Substances has been revised and made more stringent. Therefore, manufacturers must ensure the correct handling of chemical substances and that all information on chemical substances is fully understood within supply chains to enable the production of safe, secure products. Meanwhile, consumers must also be able to **understand information on the risks of chemical substances** so that they can appreciate their “appropriate use.”



## 5. Finance and insurance

### The environment and economy

Many environmental issues originally emerged as a result of economic activities. One important measure to tackle environmental issues is the promotion of environment-friendly products, as explained in the *Eco-products Directory 2008*. Another important initiative is to make economic activities more sustainable by changing the flow of money. A simple way in which the flow of money can be changed is to purchase more **environment-friendly products** instead of selecting products simply based on price and performance. Such awareness plays a significant role in promoting sustainable economic activities. This is called **green purchasing**.

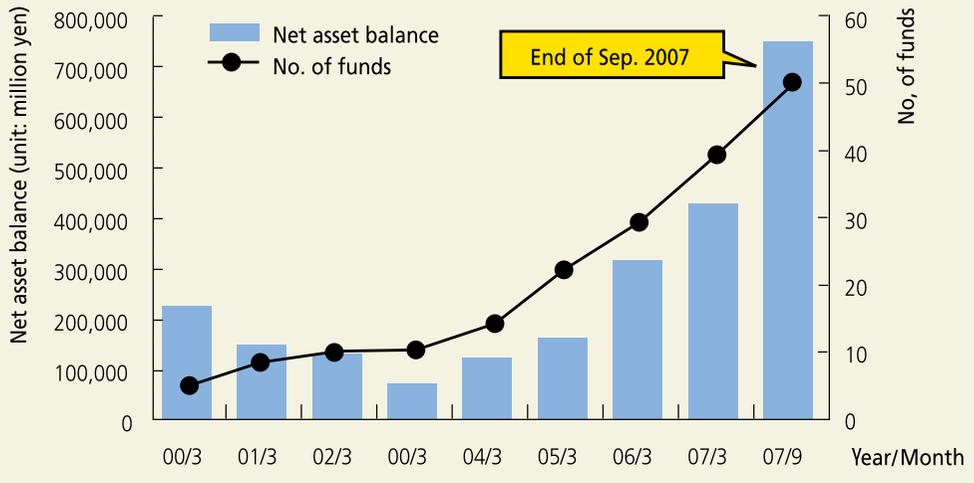
### Socially Responsible Investment

Because enterprises can have a significant influence on the economy, they should play more crucial roles in activities such as green purchasing compared with individuals. The promotion of green procurement is one type of commercial economic activity. However, business firms cannot be involved in any activity if there is a risk that shareholders may suffer losses as a result. They must therefore give priority to cost over willingness to procure products that do not harm the environment. The mechanism called **socially responsible investment(SRI)** was developed to support enterprise environmental activities by investing in them.

### Future of the SRI market

The latest investment boom has encouraged many ordinary investors to enter the SRI market, and more are investing in the best interests of their own children and their future as well as for profit. Because public awareness of environmental issues such as global warming is also increasing, it is expected the number of SRI funds will increase. For example, there are funds for investing in the development of wind-power generation and fuel cells, which help to prevent global warming. It is hoped that in the future not only private investors but also institutional ones such as pension funds will pay more attention to environmental issues so that the SRI market will expand.

Transitions in the net asset balance of SRI funds and number of funds



# 3

## Products listed in the *Eco-products Directory 2008*

### About eco-products

“Eco-products” generally refer to environment-friendly products, but there is no strict definition. In the *Eco-products Directory 2008*, “eco-products” are defined as “products and services that comply with environmental regulations or are environment-friendly, reflecting manufacturers’ voluntary efforts to care for the environment.” Eco-products include not only industrial products but also products and services in the areas of agriculture, tourism, and finance. They also include products and services aimed directly at environmental impact reduction (i.e., eco-businesses, such as the production of pollution control devices, waste disposal/recycling, and consulting). In the *Eco-products Directory 2008*, eco-products are classified into four categories: materials, components, products, and services.

### Eco-products listed in this directory

Many eco-products come with environmental labels that state product features to inform and appeal to consumers. They certify that products are eco-products according to standards independently set by countries, regions, organizations, and providers.

The International Organization for Standardization (ISO) classifies environmental labels into Type I, Type II, and Type III and environmental labels are then given based on compliance certification, producers’ self-declaration of commitment to environmental preservation, and the verification and disclosure of quantitative environmental impact data. There are also environmental labels given under standards and criteria other than the ISO’s.

In addition to environmental labels, there are also other initiatives to raise consumers’ environmental awareness, including the creation of databases where self-assessed compliant products may be registered. Those initiatives are individual ones and thus differ.

### ISO environmental labels

**Type I** (ISO 14024) <Seal of approval—compliance approval>

Description: Product classification and criteria are set by third-party organizations in line with ISO standards, where submitted products are assessed for approval and if successful, awarded Type I environmental labels.

Examples: Eco Mark (Japan), Blue Angel (Germany), Green Label (Singapore)



**Type II** (ISO 14021) <Single attribute—producers' self-declaration of commitment to the environment>

Description: Product providers independently demand environment-related improvements in their products. There is no intervention by any third party.

Examples: Hitachi Ltd., Matsushita Group, Sharp Corporation



**Type III** (ISO 14025) <Report card—verification and disclosure of quantitative environmental impact data>

Description: Type III labels are not seals of compliance. They quantitatively disclose the environmental impact of the entire product life cycle from resource collection to manufacturing and distribution. Only the reliability of disclosed data is verified and product evaluation is left to consumers.

Examples: Eco Leaf (Japan), EPD (Sweden), EDP (Republic of Korea)



## Other environmental labels

There are other environmental labels apart from those of the ISO, such as Energy Star labels in Japan, the US, EU, and Australia. Energy Star labels indicate that products comply with the International Energy Star Program of the US Environmental Protection Agency (EPA). These labels are for energy-saving appliances such as OA equipment.>



Various environmental labels have been created in many other areas including the building industry and food industry.

## Other initiatives to raise environmental awareness

Apart from the promotion of environmental labels, there are other initiatives to raise consumer awareness of the environment. For example, the Green Purchasing Network (GPN) in Japan formulated guidelines for purchasing environment-friendly products, together with important points to consider, in 18 categories including printing and communication paper, stationery and office products, and vehicles. In line with the guidelines, the GPN Database provides the public with environmental information on products. The database contains information on registered providers who independently confirm that their products are environmentally compliant.

The products listed in the *Eco-products Directory 2008* are considered to be eco-products if any of the above-mentioned environmental labels have been received or declared, or otherwise they are registered in the GPN Database, which is based on the provider's initiatives for environmental impact reduction. Relating to the listed products that have not received environmental labels or have not been registered in the GPN Database, the Eco-products Database Working Group decided the judgement based on whether the information submitted by the providers reflects the initiatives for environmental impact reduction in line with the categories showcased in following pages.

# 4

## Understanding of eco-products

To ensure an accurate understanding of eco-products, the following three categories were developed for the *Eco-products Directory 2008*:

A: “Which” environmental issues are eco-products intended to address?

B: “How” do eco-products address environmental issues?

C: “When” and “where” in the product life cycle do eco-products address environmental issues?

### Which

**A: “Which” environmental issues are eco-products intended to address?**

This category helps consumers understand which environmental issues eco-products are intended to address. The focus is global warming and resource consumption. Issues related to pollution and contamination (air, water, and soil), which are serious problems in developing economies, and waste disposal, one of the weighty environmental problems in Japan, are also included. A total of five initiatives are therefore listed:

---

#### Global warming prevention



Helps reduce emissions of greenhouse gases such as carbon dioxide. This initiative includes the direct reduction of greenhouse gas emissions as well as energy saving and the reduction of deforestation.

---

#### Air/water/soil pollution prevention



Helps reduce emissions of substances contained in the air, water, and soil, such as photochemical oxidants (e.g., nitrogen oxides) and suspended particulate matter (e.g., sulphur oxides), which are substances restricted by environmental standards including air pollution control laws. This initiative contributes to preventing ozone depletion and product oxidization. The clean-up of air/water/soil pollutants is also included in this initiative.

---

#### Chemical substance reduction



Helps reduce and clean up eco-toxic chemical substances harmful to humans and the environment. These chemicals include substances specified by laws that identify the environmental impact created by emissions of specific chemical substances and that promote better management of such substances. This initiative includes the reduction and purification of hazardous substances by recycling and reuse as well as products containing low levels of or no hazardous substances.

---

#### Waste reduction



Helps reduce final disposal volumes by changing products, manufacturing processes, and packaging. This initiative includes waste weight/volume reduction within the circulation system.

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#### Resource saving



Helps reduce the consumption of resources, such as mineral, forest, and water resources. This initiative includes resource saving by reusing and recycling as well as resource saving in products and the manufacturing process.

---

# How

## B: "How" do eco-products address environmental issues?

This category explains how eco-products support environmental impact reduction in response to the five initiatives listed in A. The category is subdivided to provide comprehensive support for various environmental measures widely practiced at present. This clarifies whether resource saving is achieved through enhanced product performance, longer product life, or improved product recyclability.



### **Recyclability/reusability/refillability**

Raw materials can be recovered, processed, and recycled for reuse. Alternatively, they can be recycled efficiently by using designs that are easily disassembled. Reusable and refillable designs may be used in packaging and products.



### **Long life**

With long-life designs and enhanced durability and performance with repairs and maintenance, product life can be prolonged, leading to the reduction of raw materials and waste.



### **Degradability/compostability**

Products, packaging, and their components are biodegradable into substances that are relatively homogeneous and stable. They can also be degraded to some extent under certain conditions within a predetermined time.



### **High quality/performance**

Product quality and performance improvements enable environmental impact reduction, subsequently leading to material and waste reduction.



### **Energy saving**

Efficient process designs and product weight reduction enable energy saving. This initiative includes the use of energy recovered instead of being disposed of.



### **Environmental clean-up products**

These products detoxify and clean up hazardous substances.



### **Using recycled materials**

Recyclable materials (pre- and post-consumer) and recovered and recycled materials are used in the manufacturing process, either entirely or in high volumes.

# When Where

## C: "When" and "where" in the product life-cycle do eco-products address environmental issues?

This category helps determine when and where within the life-cycle stage environmental initiatives are reflected in eco-products. The product life-cycle stage is broken down into six steps: material extraction, material and component production, design, manufacturing, product use, and disposal.



### Extraction of materials (resource)

In this step, resources needed for product manufacturing are collected. Equipment is used for environmental impact reduction in this stage.



### Material and component production (material/parts)

This is a stage where interim products including materials and components are manufactured. Such interim products and their designs are intended for environmental impact reduction.



### Design and material selection (design)

In this step, designs and materials are carefully selected for product manufacturing, including environmentally compatible designs.



### Product manufacturing (production)

Products are manufactured in this step using materials and components. This step includes products that help reduce environmental impact during the manufacturing process.



### Product use, maintenance, and repair (use/repair)

In this step, products are used by consumers and maintenance and repairs are carried out. This step includes considerations of energy saving and environmental clean-up as well as for prolonging product life by repairs and product life improvement.



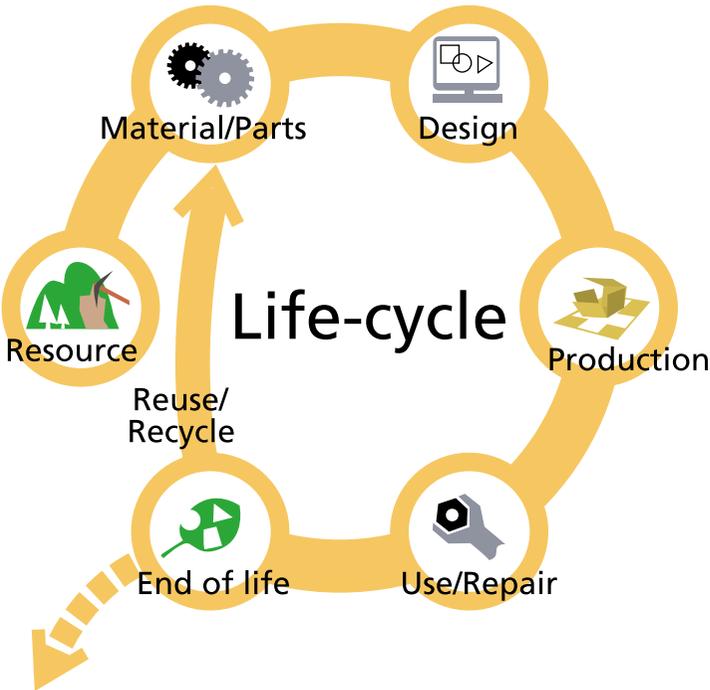
### End of life

In this step, products are disposed of and recycled. Included in this step are products that contribute to the reduction of final disposal volumes and can be disassembled, are easily reusable, easily recyclable, and compatible with well-established recycling systems.

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Each product listed in the *Eco-products Directory 2008* is categorized by maximum 4 items in above mentioned category A and B and also by maximum 2 stages in category C.

Product Life-cycle Stage - Schematic Diagram



# 5

## Product data display in the *Eco-products Directory 2008*

The *Eco-products Directory 2008* is intended to enlighten people, mainly those in the Asia-Pacific region, on eco-products and –services available. As many as possible are listed in this directory. To make it simple and easy for all environment-minded individuals to understand, the product data are sorted and arranged in the directory as shown below. Thanks to the providers of the listed products and services.

- ① Product ID number
- ② Main features
- ③ Product details
- ④ Company information
- ⑤ Sales territory
- ⑥ Common product name
- ⑦ Categories
- ⑧ Product photo
- ⑨ Photo caption

### ① Product ID number

All product ID numbers are displayed as below:

# ES-4-032

main entry   subentry   product item no.

### (1) Main entry

In the *Eco-products Directory 2008*, the information on each eco-product is provided in four categories: 1. Materials, 2. Components, 3. Products, and 4. Services. The product data also use frames of different colors for different main entries (1. pink, 2. blue, 3. green, and 4. orange).

**Eco-materials**   **Eco-components**  
**Eco-products**   **Eco-services**

## (2) Subentry

Each main entry is divided into subentries as shown below:

### EM

- 1 Metals
- 2 Polymers
- 3 Natural materials
- 4 Foam
- 5 Ceramics and glass
- 6 Composites
- 7 Others

### EC

- 1 Construction components
- 2 Electrical and electronic components
- 3 Semiconductor manufacturing devices
- 4 Machine parts
- 5 Automobile parts
- 6 Packaging
- 7 Others

### EP

- 1 Home electric appliances / Lighting
- 2 Carriers / Automobiles
- 3 OA / IT equipment
- 4 OA / Furniture
- 5 Apparel / Textiles
- 6 Interior decoration/Exterior decoration or furniture
- 7 Building and civil engineering
- 8 Machines and equipment
- 9 Others

### ES

- 1 Product-related services  
(maintenance, upgrading, repair / reform)
- 2 Reuse and recycling services  
(collection, etc.)
- 3 Outsourcing services  
(waste disposal, control of hazardous items, chemical treatment, facility management)
- 4 Management-related services  
(consulting, accreditation, analysis, evaluation, etc.)
- 5 Others  
(e-commerce, eco-tourism, hotels, information transfer, etc.)

These subentries are shown the right side of the line for product ID numbers as follows:

#### Eco-materials

EM-1-001

Metals

#### Eco-components

EC-1-001

Construction components

#### Eco-products

EP-1-001

Home electric appliances / Lightings

#### Eco-services

ES-1-001

Product - related services

### **(3) Product item number**

Each subentry lists product items in numeric order in accordance with the Japanese Statistical Standard Industry Classification.

### **(2) Main features**

Brief descriptions of how products have been improved to contribute to environmental impact reduction are provided in this section.

### **(3) Product details**

Detailed descriptions of how products have been improved to contribute to environmental impact reduction are provided in this section.

### **(4) Company information**

The contact details of product providers are listed in this section.

### **(5) Sales territory**

Where each product is available is found in this section.  
(Sales territories are not always stated, as this is a free listing section.)

### **(6) Common product name**

The common name of each product is given in this section (e.g., camera, pencil, desk, etc.).

### **(7) Categories**

How eco-products reflect certain environmental initiatives is indicated graphically according to the following three categories:

**A: "Which" environmental issues are eco-products intended to address?**

**B: "How" do eco-products address environmental issues?**

**C: "When" and "where" in the product life-cycle do eco-products address environmental issues?**

The icons indicate items (maximum of 4) selected from A: "Which" and B: "How."

<icons>

### A: "Which"



Global warming



Air/Water/Soil



Chemical substances



Waste



Resource

### B: "How"



Recyclable



Long-life



Degradable



High quality



Energy saving



Purification



Recycled materials

The yellow dots indicate items (maximum of 2) selected from C: "When" and "Where."



### ⑧ Product photo

One photo is inserted for each product.

### ⑨ Photo caption

The caption provides a brief description, e.g., product model, of each product photo.



# Eco-materials

- 1 Metals**
- 2 Polymers**
- 3 Natural materials**
- 4 Foam**
- 5 Ceramics and glass**
- 6 Composites**
- 7 Others**

In the *Eco-products Directory 2008*, “eco-materials” refer to “materials (or material technologies) that possess excellent characteristics with good performance, which can be manufactured, used, and recycled or disposed of, while having only a low impact on the environment as well as being kind to humans.” Environment-friendly eco-materials come in a diverse range and include recyclable materials, materials free from hazardous substances, materials manufactured with low energy consumption and in clean conditions, materials that purify contaminated water and air, and materials that are very efficient and resource-saving while still offering good performance, and much more.

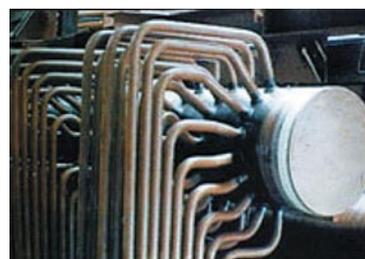
Carefully assessing the impact on the environment within its life cycle from the manufacturing to the disposal stage is important in choosing eco-materials. Once this has been clarified, it can be taken into consideration to create an eco-product well balanced between function and eco-efficiency. Based on this concept, eco-materials must meet the following six distinctive factors:

- (1) They do not use scarce resources.
- (2) They have functions to clean and conserve the environment.
- (3) They create only low environmental impact when manufactured.
- (4) They do not contain any hazardous substances.
- (5) They provide high performance when used.
- (6) They are easy to recycle.



## SUPER 304H, HR3C stainless steel tubes for boiler

New ultra-super critical boilers used in thermal power plants operate at higher temperatures and pressures. These systems bring better generation efficiency and thereby reduce emissions of CO<sub>2</sub>. However, high-strength steel pipe materials that offer excellent corrosion resistance are required in these boilers. By adding copper (Cu), niobium (Nb) and nitrogen elements to existing 18% Cr, 9% Ni steel alloy material and improving manufacturing processes, Sumitomo Metals has realized a new type of high-strength, high-temperature steel pipe capable of withstanding steam and oxidation corrosion. The pipes therefore meet the rigorous operating requirements of ultra-super critical boilers. In a related development, Sumitomo Metals has also created a new steel material that meets strict requirements for corrosion resistance by raising the content of Cr in the steel to 25%.



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Available in : Worldwide

Boiler for thermal power generation

## Invar alloy for LNG transportation

As LNG has an extremely low temperature, pipes expand and contract depending on whether liquid is flowing through them or not. Previously, to absorb this expansion and contraction, it was necessary to install a U-shape in the pipes. However, with joint research by Sumitomo Metals, Osaka Gas Co., Ltd., Kawasaki Heavy Industries, Ltd., and Sumitomo Metal Pipeline and Piping, Ltd., we developed new piping technology without U-shape by the application of Invar alloy (36% Ni-Fe) of which linear expansion coefficient property is extremely small. This alloy was utilized for the pipes in the world's first undersea tunnel connecting LNG terminals at Osaka Gas' Senboku facility. As U-shaped piping was not required, the tunnel was constructed with a smaller inner diameter, saving excavation costs. This development is contributing to the stable supply of LNG, a clean energy source.



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Available in : Worldwide

Straight LNG piping set up in the undersea tunnel

## Eco-materials

EM-1-003

Metals

small bar steel

### High-strength steel for forged connecting rods

A connecting rod is a vital part that connects a crankshaft and a piston in an engine to transmit power. Sumitomo Metals and Honda Motor Co., Ltd. have jointly developed high-strength steel for use in forged connecting rods with a 30% higher resistance to metal fatigue, while reducing weight by 13%. These components are currently used in the Honda Legend and Civic. No lead is used to make the steel, thereby helping to reduce environmental load.



Cracking connecting rod

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Available in : Worldwide

## Eco-materials

EM-1-004

Metals

small bar steel

### Lead-free free-cutting steel (steel bars)

The shapes of crankshafts used in automobiles, among others, are very complicated. Manufactures demand superior free-cutting capabilities in steel to guarantee ease of manufacturability in machine processing. They have other rigid requirements, including its effect on the life of tools, and demand that the materials they purchase address all aspects of manufacturing comprehensively. In order to meet their needs, Nippon Steel came up with free-cutting steel products free of environmentally negative lead. A range of products to meet the needs of automakers has been developed and offered by Nippon Steel.



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## Eco-materials

EM-1-005

Metals

medium thick sheet steel

### FCA steel

As increasing traffic volumes put more frequent stress on structures, reducing the occurrence of fatigue cracks and their propagation is a major issue in determining the lifetime of bridges. By using our fatigue crack arrester (FCA) steel with its outstanding fatigue resistance properties the fatigue lifetime can be extended by more than 100% compared with conventional steel. Furthermore, by enhancing weather resistance, maintainability is also improved.



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Available in : Worldwide

The Irino Bridge (provisional name), currently under construction, is using FCA steel.

## Eco-materials

EM-1-006

Metals

medium thick sheet steel

### The New S-TEN1, high corrosion resistance steel material

Demand for steel material with outstanding anti-corrosive properties is growing rapidly, especially from waste incinerating facilities exposed to corrosive hydrochloric from food and plastic waste. Nippon Steel developed the new S-TEN1, with dramatically increased anti-corrosive properties to combat hydrochloric acid than conventional products. It has been on the market on a fully-fledged basis since 2003. The new S-TEN1's ability to resist hydrochloric acid is around three times higher than that of conventional products.

This makes the new S-TEN1 an ideal material for use in waste processing and chemical plants. It also leads to extended product life and a reduced frequency in maintenance requirements to benefit users, as well as an overall reduction in environmental loads on a societal level.



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## Eco-materials

EM-1-007

Metals

medium thick sheet steel

### HTUFF(Super High HAZ(Heat-affected zone) Toughness

The steel plates for ships, buildings, bridges and other large structures are prone to coarsening when exposed to the heat required during the welding process (coarsening which namely reduces toughness). Previously, a construction technique of performing welding on a gradual basis was used to ensure safety and reliability, rather than completing the welding process in one step.

Nippon Steel's HTUFF super-tough and super-strong steel sheet eliminated the needed for repeated welding, since Nippon Steel radically reduced the size of metal particles in the welding-induced heat-affected areas of the HTUFF steel sheet through nanotechnology. Such miniaturization suppresses the deterioration of HTUFF's toughness, even when exposed to extreme temperatures of 1400 degrees Celsius and more.

The HTUFF steel sheet drastically improved the welding efficiency of users and contributed toward energy savings. The HTUFF is the recipient of the 36th Ichimura Industrial Award presented by the New Technology Development Foundation in FY2003.

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## Eco-materials

EM-1-008

Metals

sheet steel

### Electrical Steel Sheets for Hybrid Cars

Highly efficient and non-oriented electrical steel sheets, when adopted in driving motor cores, improve automotive fuel economy and contribute to downsizing/weight reduction of auto bodies. Meanwhile, highly efficient and silent electrical steel sheets containing 6.5% Si (known as "Super Core") are adopted in reactor cores for pressor systems.



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Reactor core-block core type

## SXH electrical steel sheet for high-efficiency motors

Demand is growing for hybrid vehicles and efficient air conditioners, which are seen as one way of helping to preserve the environment. We have developed the SXH series of non-oriented electrical steel sheet for use in the iron core of hybrid vehicles' drive motors and air conditioners' compressing motors. This steel features superior electromagnetic characteristics and excellent workability. By controlling the orientation of the steel crystals, we have succeeded in boosting energy conversion efficiency, thereby contributing to significant reductions in CO<sub>2</sub>. This technology won the 39th (fiscal 2007) Ichimura Industrial Prize, Contribution Award.



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Available in : Worldwide

Driving motor for hybrid car

## Sumi Quench steel sheet for hot pressing

The hot pressing process involves heating steel to the temperatures close to 900°C, pressing the steel at high temperatures while it is soft, and quenching the steel in the pressing die. Shaping and quenching occur simultaneously, causing the steel to achieve higher strength. This technology results in steel sheets with tensile strengths of 1000 MPa or higher, which previously were difficult to use in automotive component applications. Impact-absorbing door steel produced by this method is 30% stronger and 10% lighter than conventional steel. Furthermore, its dimensional accuracy is on a par with ordinary pressed steel. This technology is being applied to the production of automotive structural parts.

MPa (Megapascal): a unit of pressure or stress. Mega means one million.



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Available in : Worldwide

Door beam

## Eco-materials

EM-1-011

Metals

sheet steel

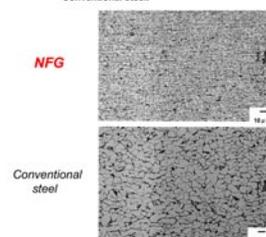
### NFG,Ultrafine grained steel sheets

Reducing the grain size of steel increases the strength. Ultrafine grained steel has a fine grain of 1-5microns. The steel has less rare earth alloy, and is expected to have the characteristics of low temperature toughness, high fatigue strength and good workability. This material is expected to contribute greatly to realization of the social demands such as energy saving, resource saving and environment conservation. We developed facilities and constructed an actual hot strip mill introducing new concepts. We succeeded in producing ultrafine grained steel sheets of 2-5microns industrially.



#### Comparison of grain size

Grain size of NFG is 1/3 smaller compared to Conventional steel.



#### Nakayama Steel Works, Ltd.

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URL <http://www.nakayama-steel.co.jp>

## Eco-materials

EM-1-012

Metals

cold rolled steel sheets

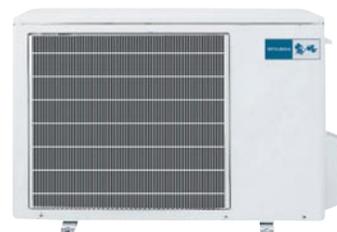
### Sumitomo Hi-Coat NEO (high corrosion-resistance type)

Sumitomo Metals was one of the first in the industry to begin developing environmentally friendly pre-coated steel sheet with the high corrosion resistance required for outdoor electronic equipment and other items. Despite containing no chrome, our pre-coated steel sheet keeps the same corrosion resistance as products containing hexavalent chromium that is the first in Japan. This product's environmental responsiveness and performance in outdoor applications were recognized by Mitsubishi Electric Corporation, which has been using the product in external air conditioner units since 2005.



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Available in : Worldwide

External air conditioner unit

## The GA-TRIP hot-dip galvanized sheet boasts the high tensile strength

Nippon Steel was the first company worldwide to successfully develop and commercialize alloy hot-dipped galvanized steel sheets for automobiles with tensile strength in the 60 and 80 kilogram classes, by overcoming the conventional notion that high tensile would be impossible without compromising the quality of galvanization. The new product was selected as a material for new car models introduced in 2003. It greatly improves the collision safety of cars, vehicle weight and the balance between press formability and extended lifespan.



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## High-endothermic steel sheet

In view of the trend toward higher performance, higher speed, and smaller size, it has become important for electric appliances to release internally generated heat efficiently to the outside.

Nippon Steel, after the successful development of special organic film in 2002, has started to distribute high-endothermic steel sheets that release the heat generated inside electric appliances efficiently to the outside.



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## Eco-materials

EM-1-015

Metals

sheet steel

### Flat rolled magnetic steel sheet/strip for high electrical efficiency

Since motors are increasingly required to be highly efficient in terms of energy saving, thin high-efficiency electrical steel sheets have applications in a variety of fields, such as motors used for hard disc drive units, motors for electric vehicles, and power generators for microgas turbines. Nippon Steel developed high-tensile thin electrical steel sheets for ultra high-speed motors and high-torque, high-formability thin electrical steel sheets for hard disc drive units.



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## Eco-materials

EM-1-016

Metals

sheet steel

### High tensile strength steel sheets (HITEN)

High tensile strength steel sheets (HITEN) are used in various parts of automobiles and extremely effective for automotive weight reduction. SFG HITEN was the first steel sheet used in auto side panels, while 980 MPa HITEN sheets are used in the center pillar and various reinforcing members, achieving a 5-10% weight reduction in an entire auto body.



#### JFE Steel Corporation

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## Eco-materials

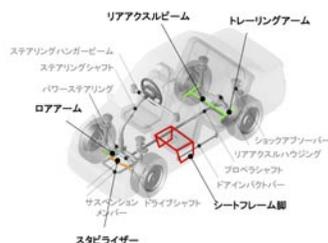
EM-1-017

Metals

hot drawn common steel pipes

### Automotive Steel Tubes

High performance electric resistance welded steel tubes known as "HISTORY (high speed tube welding and optimum reducing technology) steel tubes" contribute to automotive weight reduction by realizing hollow tubes and properties of high strength and high formability.



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## Eco-materials

EM-1-018

Metals

cold-rolled special steel sheets

### An exhaust manifold material, JFE-WX1

An exhaust manifold material, JFE-WX1 is the only ferritic stainless steel in the world, which can be used at ultra-high temperature. It improves auto fuel economy, reduces CO<sub>2</sub> emissions, and contributes to exhaust gas purification.



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## Eco-materials

EM-1-019

Metals

cold-rolled special steel sheets

### JFE443CT

JFE443CT is all-purpose stainless steel which does not contain such rare resources as nickel or molybdenum but ensures high corrosion resistance equivalent to SUS304. When applied to cooking pans for induction heating (IH), it leads to substantial energy saving because of its properties of excellent heat transmission and magnetism.



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## Eco-materials

EM-1-020

Metals

hot-drawn special pipes

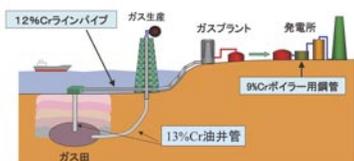
### Martensitic Stainless Steel Tubes/Threaded Joints

13% Cr oil well tube and 12% Cr line pipe for production and transport of oil and natural gas, and 9% Cr steel pipe for high-efficient power generation are materials having long life and low environmental loads. As for threaded joints used in combination with oil well tubes, new products using no environmental pollutants are provided.



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## Eco-materials

EM-1-021

Metals

steel materials

### High Performance Weathering Steel

This steel product suppresses the corrosion of steel products and eliminates painting process in the air by forming dense rust in the air. It reduces environmental loads due to painting.



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High Performance Weathering Steel

## Eco-materials

EM-1-022

Metals

coated steel

### Lead-free steel sheet for car fuel tank

Conventionally, lead-coated steel sheets have been used for car fuel tanks. Nippon Steel is now supplying a newly developed lead-free aluminum or tin-zinc coated steel sheet(Silver Zinc-NT). This Eliminates the problem of lead in shredder dust, generated when cars are scrapped.



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## Eco-materials

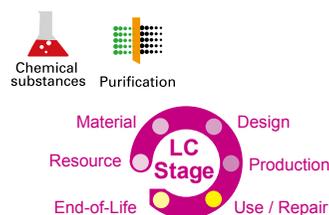
EM-1-023

Metals

coated steel

### Steel sheet coated with chromate-free film

Conventionally, galvanized steel sheets are used in the manufacture of home electrical appliances such as refrigerators, washing machines, and air conditioners to prevent rust. However, the sheets are coated with a film containing trace amounts of chromic acid to prevent the zinc from being oxidized. Nippon Steel developed an eco-friendly resin coating, free of chromic acid, that protects the surface zinc against oxidation.



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## Eco-materials

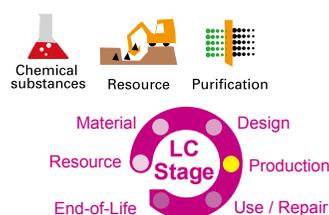
EM-1-024

Metals

coated steel

### Pre-coated steel sheet; to eliminate the painting

Nippon Steel's prepainted steel sheet (trademarked as Viewcoat) is used in washing machines, refrigerators and outdoor air conditioner units. Customers can specify their chosen color and this eliminates the painting process following fabrication and assembly. Pre-painted on a dedicated painting line, Viewcoat excels in paint film quality, minimizes paint loss and greatly reduces environmental impact.



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URL <http://www0.nsc.co.jp/kankyou/index.html>



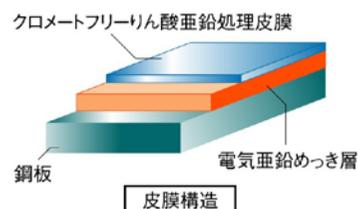
## Chromate-free Coated Steel Sheet

Chromate-free coated steel sheet is an environment-friendly product, since it contains no chrome (VI). A uniquely designed composite film consisting of a special organic resin and inorganic substance secures as much corrosion resistance as conventional products. It is now used in internal panels of home electric appliances and vending machines, internal components of OA equipment, chassis of audiovisual equipment, and other parts.



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## Highly Lubricant GA Steel Sheet:"JAZ (JFE Advanced Zinc)"

As an environment-friendly product, "JAZ" does not contain phosphate or heavy metal elements which used to be contained in conventional highlylubricanted GA steel sheets. In this unique product, a surface reforming layer with nano-level thickness is formed on a zinc coated layer. JAZ has been adopted in automotive outer plates or inner plates which are otherwise difficult to be formed. More specifically, it is used in side panels, fenders, doors, and wheelhouses, etc.



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1,200ton実プレステスト  
(フェンダーモデル)

1,200 t actual press test(Fender model)

## Eco-materials

EM-1-027

Metals

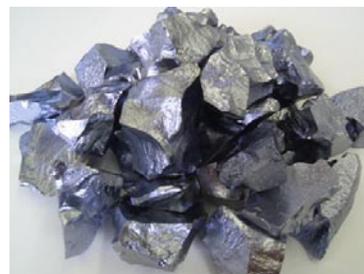
non-ferrous metals by primary smelting and refining

### Polycrystalline Silicon (Materials for solar power systems)

We are producing polycrystalline silicon for semiconductor and solar cell from metallurgical silicon by processing it through chlorination, distillation and reduction processes.

The polycrystalline silicon for solar cell is a major raw material for photovoltaic industry and the energy generated from solar cell is clean without any generation of CO<sub>2</sub>.

Global warming is an urgent issue not only for human beings but also any lives on the globe now. We are contributing to preservation and restoration of the natural environment on the earth by supplying polycrystalline silicon.



#### Mitsubishi Materials Corporation (Yokkaichi Plant)

5 Mita-cho, Yokkaichi, Mie 510-0841, Japan  
 Tel 81-59-345-5191 Fax 81-59-346-5815  
 E-mail toishii@mmc.co.jp  
 URL <http://www.mmc.co.jp>

Available in : Japan, USA, Europe and Southeast Asia

Polycrystalline silicon for solar cell

## Eco-materials

EM-1-028

Metals

rolled and drawn brass products

### ECO BRASS (High performance Lead-free Copper Alloy)

ECO BRASS is a lead-free brass and environmentally friendly brass material. Instead of using heavy metal harmful to the human body, a precipitating metallic compound in the metal structure realizes good machinability.

Key Features:

- 1) Lead-free environmentally friendly brass material
- 2) High strength equivalent to stainless steel
- 3) Good machinability nearly equal to brass rod containing 1% lead
- 4) Excellent machined surface
- 5) Excellent de-zincification corrosion resistance
- 6) Excellent stress corrosion cracking resistance
- 7) Excellent warm brittleness cracking resistance
- 8) Excellent hot forgeability
- 9) Easily accepts soldering and brazing
- 10) Good castability

Applications:

- 1) Water supply devices such as faucets, valves, fittings, etc.
- 2) Precision parts as a substitute for stainless steel such as shafts, screw, bearings
- 3) Electrical parts and connectors
- 4) Automobile parts: lead-free requirements
- 5) Medical devices

#### Mitsubishi Shindoh Co., LTD (the former Sambo Copper Alloy Co., LTD)

374, 8-cho, Sambo-cho, Sakai-ku, Sakai-shi, Osaka 590-0906, Japan  
 Tel 81-72-233-1161 Fax 81-72-227-6590  
 E-mail [tech@sambo.co.jp](mailto:tech@sambo.co.jp)  
 URL <http://www.sambo.co.jp>



Available in : Except North America & Europe

Machined Products using ECO BRASS rods

## Eco-materials

EM-1-029

Metals

food cans

### Universal Bright F

This award-winning steel sheet product enables can manufacturers to skip coating and printing processes, and thereby eliminates harmful substances and reduces CO<sub>2</sub> emissions.

(Awarded the Technology Prize by the Surface Finishing Society of Japan in 2005)



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Example of canmaking (half-pound food can)

## Eco-materials

EM-1-030

Metals

carbon black

### Tow Sheet, Maintenance and reinforcement material for concrete structures

As many highways are increasingly aged, maintenance and repairing work are in great demand to expand or extend the life of structures. The "Tow Sheet Method" supplied by Nippon Steel and Nippon Steel Composite is widely used in repairing and reinforcement work where "Tow Sheet" formed into sheet of carbon-fiber is affixed over the surface of concrete with resin adhesive. "Tow Sheet" work is easy and resists rust, thus contributing to the extended life of facilities and buildings. Nippon Steel looks forward to reducing the amount of construction waste and further to global environmental preservation through the promoted use of its "Tow Sheet".



### Nippon Steel Corporation

2-6-3, Otemachi, Chiyoda-ku, Tokyo, Japan  
 Tel 81-3-3275-5144 Fax 81-3-3275-5979  
 E-mail [kankyo@nsc.co.jp](mailto:kankyo@nsc.co.jp)  
 URL <http://www0.nec.co.jp/kankyou/index.html>



## Eco-materials

EM-1-031

Metals

residential buildings

### Construction method using thin-sheet steel

Nippon Steel Corporation developed a new construction method called "Nittetsu super frame" using thin-sheet steel for low rise residential buildings. Offering extra durability, it involves the use of galvanized thin-sheet steel for the frame of wooden buildings constructed using the two-by-for system. The method involves adiabatic construction which involves packing the outside walls of the building with heat insulator. This provides more efficient heating and air-conditioning and saves energy. In addition, the use of recyclable steel products helps to conserve forest resources.



#### Nippon Steel Corporation

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 Tel 81-3-3275-5144 Fax 81-3-3275-5979  
 E-mail [kankyo@nsc.co.jp](mailto:kankyo@nsc.co.jp)  
 URL <http://www0.nsc.co.jp/kankyou/index.html>

## Eco-materials

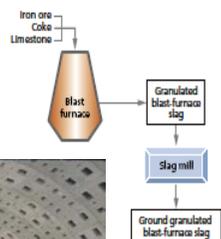
EM-1-032

Others

Granulated Blast-Furnace Slag

### Granulated Blast-Furnace Slag, Superior alternate material for the clinker and cement

The Granulated Blast-Furnace Slag ("GBFS") is produced by the rapid granulation of molten slag that is obtained during the iron making process. GBFS is primarily consisted of CaO and SiO<sub>2</sub> together with minor chemical component such as Al<sub>2</sub>O<sub>3</sub>, MgO and others. GBFS can be used as an alternate of clinker that is the raw material of cement. Especially, GBFS shows excellent hydration character when it is further ground, which is called Ground Granulated Blast-Furnace Slag ("GGBFS"). The character of GBFS or GGBFS has been widely known as an excellent alternate of clinker or cement. Recent concerns for global warming highlighted the value of GBFS and GGBFS. GBFS and GGBFS contributes to reduce CO<sub>2</sub> emission amount equal to approximately 700Kg per each metric ton of GBFS or GGBFS through energy and natural resource saving during clinker burning process and cement production once GBFS or GGBFS are used instead of clinker and cement. Nippon Steel Corporation supplies GBFS or GGBFS from 5 steel works that are distributed along side of Japan to domestic as well as overseas customers.



#### Nippon Steel Corporation

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 URL <http://www0.nsc.co.jp/kankyou/index.html>

Segments (GBFS,GGBFS are blended) of Trans Tokyo Bay Highway

## Eco-materials

EM-2-001

Polymers

epoxy resin molding materials

### SUMIKON® EME epoxy molding compound for semicond

Sumitomo Bakelite has developed an epoxy resin molding material for semiconductor sealing that is free of bromine- and antimony-based flame retardants, which have a negative impact on the environment, is free of substances for which there is concern about their environmental impact, and conforms with global environmental standards as a molding material that can be used in lead-free solder mounting. The Company has developed and marketed the new SUMIKONR EME G700 series for applications that require high reliability and the new SUMIKONR EME G600 series for ordinary semiconductor package applications, all of which use an epoxy resin with superior fire retardant capabilities. We also launched the SUMIKONR EME E series for discrete applications. Centered on material design technology that reduces environmental impact, this "green" family of products can be used for applications ranging from cutting-edge packages to ordinary packages and is enabling the Company to reduce its environmental impact.



#### Sumitomo Bakelite Co., Ltd.

Tenosu Parkside Bidg., 2-5-8, Higashishinagawa, Shinagawa-ku,  
Tokyo 140-0002, Japan  
Tel 81-3-5462-3472 Fax  
E-mail  
URL <http://www.sumibe.co.jp/index.html>

## Eco-materials

EM-2-002

Polymers

coating materials

### SUMIRESIN EXCEL® CRC wafer coating material

To respond to narrowing circuit widths required due to the sharp increase in semiconductor memory capacity as well as higher speeds and to satisfy strict demands for reliability, Sumitomo Bakelite has developed and marketed the SUMIRESIN EXCELR CRC 8000 series of positive photosensitive wafer coating resins. This enables semiconductor manufacturers to use alkaline water as developing fluid and pure water as a rinsing solution, rendering special solvents unnecessary.

In addition, with certain wafer level packages, it can be used in place of conventional plastic-based sealants for rewiring, reducing the length of processing and thus conserving resources and energy.



#### Sumitomo Bakelite Co., Ltd.

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Tokyo 140-0002, Japan  
Tel 81-3-5462-3472 Fax 81-3-5462-4873  
E-mail  
URL <http://www.sumibe.co.jp/index.html>

## Eco-materials

EM-2-003

Polymers

laminates material system for rigid/flex printed circuit board

### Laminates material system for Rigid/Flex Printed Circuit Board "CUTE"

This laminates material system offers a material developed by using novel low elastic modulus resin system and ultra thin glass fabric and a film material with excellent dimensional stability achieved with hard segments in the resin system. As ultra thin and bendable materials, they can contribute to reducing the size and improving the performance of mobile device and medical equipment.



#### Hitachi Chemical Co.,Ltd.

1500 Ogawa Chikusei-shi, Ibaraki 308-8521, Japan  
Tel 0296-20-2217 Fax 0296-28-6128  
E-mail  
URL <http://www.hitachi-chem.co.jp>



TC-C-300/TC-F-300

## Eco-materials

EM-2-004

Polymers

heavy metal free stabilisers

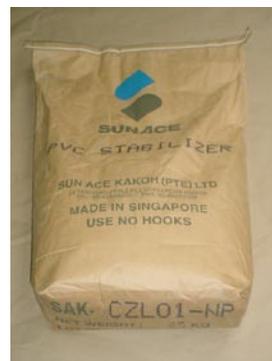
### Calcium Zinc one pack stabilisers

Calcium Zinc one pack stabilisers are free from heavy metal ingredients to offer efficient stabilisation and processability during the manufacturing of PVC products. The one pack stabiliser complies with RoHS requirements for electrical application. This ensures ease of recycling of the finished product whilst minimising impact on the environment during use and life cycle of the product. This is possible with suitable selection of other additives needed in the total formulation of the PVC compound used in conversion to the finished product form.



#### Sun Ace Kakoh (Pte.) Ltd

34 Tanjong Penjuru, Jurong Town 609030, Singapore  
Tel (65) 6264 0255 Fax (65) 6265 7038  
E-mail [sales@sunace.com.sg](mailto:sales@sunace.com.sg)  
URL <http://www.sunace.com.sg>



Available in : Singapore

Calcium Zinc One Pack Stabiliser for Cable

## Eco-materials

EM-2-005

Polymers

polymers, plastics, plastic products

### S-Lec Solar Control Film / S-Lec Sound & Solar Film

This product(SCF) is used by being sandwiched with 2 sheets of glass pane to become laminated glass. Laminated glass has nice performances like penetration resistance performance, UV ray cut-off performance and so on. Thanks to these excellent performances, laminated glass has been used on both automotive application(windscreen, sidelite, backlite and roofite) and building application(window and partition) for safety, security and comfort purpose in the world. Infrared ray cut-off fine particles are finely dispersed in this product. Thanks to this IR cut-off fine particle, laminated glass with SCF can effectively prevent undesirable heat ray(IR ray) from entering inside.

In case of automotive application for instance, steering temperature inside the vehicle cabin with SCF windscreen is around 10degree Celsius lower than that with normal windscreen during summer time parking. This temperature reduction can contribute to lowering air conditioning load and improving fuel consumption efficiency. Brother product of SCF is S-LecR Sound & Solar Film(SSF). Addition to the heat energy cut-off performance of SCF, noise reduction performance can be enjoyed with SSF laminated glass.

#### Sekisui Chemical Co., Ltd.

2-3-17, Toranomon, Minato-ku, Tokyo , Japan  
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E-mail [kankyo@sekisui.jp](mailto:kankyo@sekisui.jp)  
URL <http://www.sekisui.co.jp/>



Global warming



Energy saving



## Eco-materials

EM-2-006

Polymers

polylactic acid fiber, resin & materials

### Polylactic acid Fiber, resin & Materials

Polylactic acid is a recyclable biomass substance made from plants developed to replace the earth's limited petroleum resources. It is produced by the polymerization of lactic acid generated from the fermentation of starch.

#### 1.Fiber

Toray has succeeded in the fiberization of this polymer. "Ecodear"fiber & textile have characteristics similar to petroleum-based synthetic fibers.

#### 2.Resin

Toray succeeded to improve polylactic acid resin by our original polymer alloy (nano-alloy) technology.

Compared to the existing PLA resin, heat resistance, impact strength and moldability are greatly improved.

Toray developed halogen-free flame retardant (UL-V0) PLA compound for injection molding.

#### 3.Film and sheet

Toray succeeded to develop new PLA film, which has more flexibility and heat stability compared to the existing PLA film.

Our new PLA film can be used for various types of packages, containers, or any other film applications.

#### Toray Industries,Inc.

2-2-1, Nihonbashi-Muromachi, Chuou-ku, Tokyo 103-8666, Japan  
Tel 81-3-3245-5115 Fax 81-3-3245-5344  
E-mail [Product@nts.toray.co.jp](mailto:Product@nts.toray.co.jp)  
URL <http://www.toray.jp>



Global warming



Degradable



Polylactic acid Fiber, resin & Materials

## Toray Waterless Plate

Conventional offset printing process uses Water to repel ink from non-image areas. This water usually contains Alcohol, which is classified as Volatile Organic Compound (VOC) and hazardous to the environment. Toray Waterless Plate, with silicone layer on surface, does not require Water on the printing process. Along with its unique plate-making system, Toray Waterless Plate can dramatically reduce hazardous wastage from whole printing production and contribute to environmental conservation. Silicone layer has a same role (repels ink) as Water. Reduces enormous water exhaust that contains Alcohol. Develop with Water - No wastage of strong alkaline solution

"The Butterfly Logo", a symbol of Waterless Printing, can be shown on many printed material in recent years, which shows print buyers' concern for environmental protection. It projects customer's environmental policy and helps printer increase customer base.

### Toray Industries, Inc.

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 E-mail Product@nts.toray.co.jp  
 URL [http://www.toray.jp/products/ele/ele\\_016.html](http://www.toray.jp/products/ele/ele_016.html)

Available in : Japan



Water Printing Association Butterfly mark

## Eco-materials

EM-3-001

Natural materials

organic fertilizers

### MIGHTY HUSK, environment-friendly botanical soil-material

The product made from the husk (mesocarp) of coconut. Husk is cut down to pieces, soaked in water to remove the tannins and then dried by the sunlight, sterilized with high-temperature steam, and finally compressed to encase. The properties and possible uses are as follow.

1. The husk is composed mainly of porous, light weight structure woody fiber, (50~100g/l). It is excellent in keeping warm, air permeability, and water-holding capacity (max1320%). The period of water holding is longer than those of peat moss and sphagnum moss.
2. It works as soil reforming agent. Since it does not rot easily, it keeps the effects of improving the oil and activating the microorganism for a long period.
3. It contains a little amount of Fe,Zi,Si,and Cu,and 1.23~1.43% of K,which are indispensable to promote the growth of plants specially potash which helps to develop good roots.
4. It has a large absorption coefficient value for ammonia (440~510mg/dry husk 100g) and that for phosphoric acid (401~410mg/dry husk 100g), so it works as deodorant and also together with strong water absorb nature, it is most suitable as the floor material of a horse stable or a henhouse to absorb smell and manure.



Husk Chip Bag, SIZE 30cmX30cmX60cm

#### Taiheibussan Co., Ltd.

Mitsuseimeisinohashi BLDG 4F, 1-8-11 Shinohashi, Koutou-ku, Tokyo 135-0007, Japan  
Tel 81-3-6662-5850 Fax 81-3-5669-1152  
E-mail msuzuki@taiheibussan.co.jp  
URL

## Eco-materials

EM-3-002

Natural materials

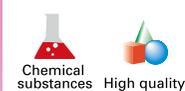
pure worsted yarn

### ECO-WASH:Eco-friendly shirink-resistant wool

Conventional chlorination treatment applied for shrink-proofing of wool fiber causes an environmental contamination. Because, the residual chlorine in the industrial waste water drained into rivers reacts with organic matters and turns into carcinogen (AOX=Absorbable Halogens), a harmful substance to humans and the environment.

While in Kurabo's ECO-WASH treatment, Ozone is used instead of chlorine, which is non-AOX and greatly reduces the burden of contamination to the environment, and further, it has much less damaging effects to wool fiber than done by the conventional chlorine treatment for shrink-proofing. Thus, ECO-WASH is the world first shrink-resistant wool by Ozone treatment.

- Smooth and neat surface look, fluffless
- Natural stretchability
- Excellent shrink-resistance
- Water repellency is retained (together with moisture releasing property of wool makes ECO-WASH comfortable)



ECO-WASH.

Water Repellent Test of Various treated wool



Water Repellent Test of Various treated wool

#### KURABO INDUSTRIES LTD.

4-31, 2-Chome, Kyutaro-Machi, Chuo-Ku, Osaka 541-8581, Japan  
Tel 81-6-6266-5084 Fax 81-6-6266-5369  
E-mail Takashi\_Kanda@kurabo.co.jp  
URL <http://www.kurabo.co.jp>

## Eco-materials

EM-3-003

Natural materials

cotton fabrics

### BREVANO ECO:Anti-flaming, antistatic fabric of ecology-specs

Fabric made from blending of excellent flameproof acrylic fiber and unused cotton generated during spinning process accounting for 10% of total material.

- Having excellent anti-flaming property coupled with self-extinguishing property. LOI\*(limited oxygen index)29 to 32.
- Excellent in non-fusibility, compared with 100% general synthetic fibers. Safe as it would not stick to skin.
- Having superior antistatic property (complying with JIS8118:friction static electrical charge less than 7micro C/m<sup>2</sup>)
- Refreshing and easy-to wear, due to their excellent sweat absorption.
- Would not pill.
- Good coloring, good color fastness.
- Designated "EcoMark certified product", Japan's environmental label.

\* Note:LOI is a measure to show the degree of flammability.The less flammable, the higher the figure is. Generally, anti-flammable materials show the figure of 26 or higher.

#### KURABO INDUSTRIES LTD.

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 Tel 81-6-6266-5295 Fax 81-6-6266-5539  
 E-mail uniform\_sect@kurabo.co.jp  
 URL <http://www.kurabo.co.jp/>



combustion test

## Eco-materials

EM-3-004

Natural materials

cotton fabrics

### BioNature:Eco-oriented soil-returnable fabric

A brand-new polyester and cotton mixed fabric using hydrolyzable, biodegradable polyester of DUPONT's "Biomax".

When BioNature is left for long time in a water-rich environment with appropriate temperature and lots of microorganism, it eventually turns into water and carbon dioxide, as the result of biodegradation, after passing through the process of hydrolysis. As the process of biodegradation is very slow,it will not adversely affect the animal or plant.

The amount of carbon dioxide emitted from burning this fabric is less, compared to the emitted amount when burning general fabrics, and combustion calorie is also low. It is also proved that the ash does not contain any harmful substance.

The fabric will hardly deteriorate in ordinary use.

#### KURABO INDUSTRIES LTD.

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 E-mail uniform\_sect@kurabo.co.jp  
 URL <http://www.kurabo.co.jp/>



fabrics buried in the ground for ten months

## Eco-materials

EM-3-005

Natural materials

fabrics

### GREENPET:PET bottle-recycled polyester and various plant fibers combined fabric

Fabric made from combination of natural fibers carded with Kurabo's unique technologies, GETTOU(a kind of ginger), bamboo, kenaf, hemp, and PET bottle-recycled polyester.

Products designated "EcoMark certified product", Japan's environmental label.



#### KURABO INDUSTRIES LTD.

4-31, 2-Chome, Kyutaro-machi, Chuo-ku, Osaka 541-8581, Japan  
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 E-mail uniform\_sect@kurabo.co.jp  
 URL <http://www.kurabo.co.jp/>



logo

## Eco-materials

EM-3-006

Natural materials

air purifiers

### Mist-emission Equipment featuring Nano-Hiba oil aiming for Air Purification

Aomori Prefecture has beautiful forests of the broad-leaved arborvitae (called "Aomori Hiba") that are famous for being one of the "Three Great Beautiful Forests in Japan" as well as "Hinoki cypress" forests in Kiso district in Nagano Prefecture and "Japanese cedar" forests in Akita Prefecture.

The Tsugaru and Shimokita Peninsulas are home to the "Aomori Hiba", accounting more than 82 percent of Hiba forests across Japan.

"Aomori Hiba" are mostly used for building houses after sawing at lumber mills which produce sawdust 20 to 30 % of the total Hiba materials processed. Research has been underway to find some useful application of the sawdust. "Aomori Hiba oil" is one of the outcomes. There is growing evidence that "Aomori Hiba oil" includes number of active substances as well as "Hinokitiol". Now "Aomori Hiba oil" attracts public attention and offers useful applications because of its safety but excellent germ and insect resistant effect. "Mist-emission equipment", one of our products, has been developed by taking an advantage of "Aomori Hiba oil" to provide access for achieving comfortable, allergy-free room environment or debugging at a greenhouse



#### ANDES Electric Co., Ltd.

1-3-1, Kikyono Kogyodanchi, Hachinohe City, Aomori 039-2292, Japan  
 039-2292, Japan  
 Tel Fax  
 E-mail  
 URL



Available in : Japan

## Eco-materials

EM-3-007

Natural materials

tatami mattings

### "環良草®" : stronger skin rush

Rush is a kind of plant that has been used in Japanese housing from the old days, and it is widely known as a material of "Tatami". The features of "Tatami" are not only the fragrance and strength, but also the humidity control. In addition, it has been lately found that the rush has a function of adsorbing chemical substances and that of deodorizing. The "環良草®" rush has stronger skin compared to the previous rush, (ref., the photograph of electron-microscopy). This is a result due to the cultivation in which the intrinsic activity of rush was fully taken out. Every piece of the rush is thick and uniform. The life of the product made from "環良草®" is therefore long. Rush is a plant and glows by taking CO<sub>2</sub> in its body. Namely, the long-life "環良草®" product fixes CO<sub>2</sub> for a longer period than conventional products. We are therefore contributing to the fixation of CO<sub>2</sub> by raising the young plant of rush, every year.



#### IKEHIKO CORPORATION Co.,Ltd.

1052 Miyamatsu, Ooki-machi, Mizuma-gun, Fukuoka 830-0424, Japan  
Tel 81-944-32-1203 Fax 81-944-33-1059  
E-mail  
URL <http://www.ikehiko.com>

Available in : Japan

KANRYOUSOU®

## Eco-materials

EM-3-008

Natural materials

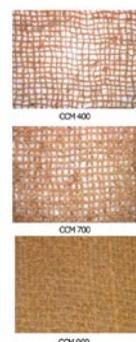
ecm-erosion control materials

### ABACUScoir Natural Fibers Erosion Control Matting

ABACUScoir is used for protection of exposed soils surface from rainfall, snow, floods. Soils protected do not flow into the waterways which would clogged and cause damage to the environment.

ABACUScoir comes in weight of 400, 700 and 900 gm/m<sup>2</sup> and can be shipped in any part of the world. It is a natural, biodegradable and strongly recommended to replace synthetics matting, especially when used for surface soil protection.

ABACUScoir is one way for engineers and environment officers to employ to obtain clean and skyblue waterways.



#### Abacus Corporation Pte Ltd

Blk 1 Defu Lane 10, #03-571 530182, Singapore  
Tel (65) 62856100 Fax (65) 62817761  
E-mail [abacuscmt@gmail.com](mailto:abacuscmt@gmail.com)  
URL <http://www.abacuscop.com.sg>

Available in : ASEAN, Asia, Worldwide

## Eco-materials

EM-3-009

Natural materials

food containers

### Recyclable, Reusable Microwaveable Food Container

Paper Food Container, made from Food grade board, from sustainable reforestation plantations, recycling the land to grow trees.

Preventing and reduction from cutting virgin Forest. 100% waterproof, oil proof, washable, reusable and recyclable.

Reusable: Do not have to be thrown away after only one time use. As a FREEZER box, Microwave reheating box. Or office stationery box etc.

A multiple design awards- SingaporeStar Design award - ecstatic appearance. AsiaStar Japan Award for Point of Sales efficiency. WorldStar USA Award: design convenience and safety- including Interlocking Safety, High Speed Microwave Cooking technology, keep warm Bento box.

Prevents contamination. Compression strength more then 35kg 'not break'.

Used by the Singapore Military since 2004.

#### Microwave Packaging (S) Pte Ltd

196 Pandan Loop, #07-24 Pantech Industrial Complex 128384, Singapore

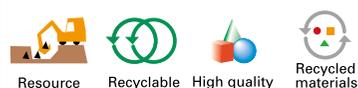
Tel (65) 67790891 Fax (65) 6775 2719

E-mail [leonard@microwave-packaging.com](mailto:leonard@microwave-packaging.com)

URL [www.microwave-packaging.com](http://www.microwave-packaging.com)

Available in : Singapore

SAF 160.114.58



## Eco-materials

EM-3-010

Natural materials

biopolymer

### BIOFRONT®, heat resistant polylactic acid

Teijin Biofront® (SteroComplex PLA) is only the biopolymer to satisfy the requirement of the high heat resistance in each high end application such as automobile, office automation etc. which the current PLA can't be applied because of the limited heat resistance. Envisioned applications are as follows;

**Fibers:** In-vehicle products, interior products and materials requiring heat-resistant, dye-affinity and anti-bacterial properties

**Films:** Optical applications requiring transparency and heat resistance

**Plastic resins:** Electric/Electronic parts and chassis requiring heat resistance and molding.

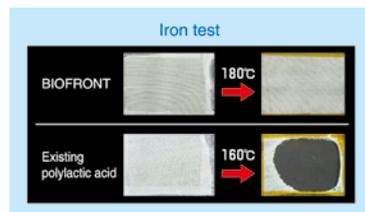
#### Teijin Limited

2-1, Kasumigaseki 3-chome, Chiyoda-ku, Tokyo 100-8585, Japan

Tel 81-3-3506-4533 Fax

E-mail [a.kumatori@teijin.co.jp](mailto:a.kumatori@teijin.co.jp)

URL <http://www.teijin.co.jp/english/index.html>



## Eco-materials

EM-4-001

Foam

urethane insulations

### Non-fluorocarbon Urethane insulation

1  
2  
3  
4  
5  
6  
7

Bridgestone switched a foaming agent of the spraying urethane insulation for the building from fluorocarbon to carbon dioxide, and achieved "no fluorocarbon".

And as a result of LCA (Life Cycle Assessment) about a fluorocarbon insulation and a non-fluorocarbon one, a non-fluorocarbon one has less influence on Global Warming, if the fluorocarbon that remains in the insulation is recovered and resolved at the demolition in 50 years.

Bridgestone won "The 8th ozoneosphere protection and global warming prevention grand prize, Minister of the Environment prize" by this technology and the LCA in 2005.

#### Bridgestone Corporation

10-1, Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
Tel 81-3-5202-6861 Fax 81-3-5202-6866  
E-mail  
URL <http://www.bridgestone.co.jp/english/index.html>



Global warming



Energy saving



Non-fluorocarbon Urethane insulation

## Eco-materials

EM-4-002

Foam

polymers, plastics, plastic products

### Freon-gas-free sophisticated high-performance phenolic foam insulation

The use of combustible hydrocarbon gas as a blowing agent and flame resistant property of the product are both accomplished by its unique forming technology. It contributes to the prevention of the ozone layer and global warming by not using Freon gases. Furthermore, we realized high heat insulation performance, which is well over that of the conventional products (by 1.5-2 times). It is the product with long-lasting thermal resistance, significantly administering to high athermalize (energy-saving) of the structures



Global warming



Resource



High quality



Energy saving



#### ASAHI KASEI CONSTRUCTION MATERIALS CORPORATION

2-12-7, Higashi-Shinbashi, Minato-ku, Tokyo 105-0021, Japan  
Tel 81-3-5473-5321 Fax 81-3-5473-5285  
E-mail  
URL <http://www.asahikasei-kenzai.com>

NEOMA® FOAM

## Eco-materials

EM-5-001

Ceramics and Glass

optical glass materials

### Optical glass (Eco-glass) without harmful lead & arsenic

There are more than 100 types of optical glass and, in the past, NIKON used huge amounts of lead as a primary ingredient for about half of these optical glasses, while a small amount of arsenic was used in most types. These two elements have highest risk of damaging to the environment among all of ingredients used for optical glass.

However, we have now developed almost full types of optical glass, being referred to Eco-glass, without using these two elements.

We have secured optical performance solely with Eco-glass for most optical apparatus through appropriate optical design.



Lenses and prisms made with Eco-glass

#### NIKON CORPORATION

Fuji Bldg., 2-3, Marunouchi 3-chome, Chiyoda-ku, Tokyo 100-8331, Japan  
Tel 81-3-3214-5311 Fax  
E-mail  
URL <https://www.nikon.co.jp>

Available in : World wide

## Eco-materials

EM-5-002

Ceramics and Glass

building bricks

### Crystal Clay CLB-series : ceramic quality blocks

< Environment-friendly >

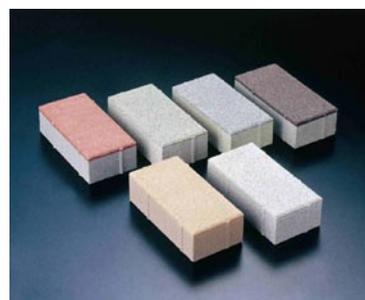
- The product is resource-saving goods, in which the amount of clay was suppressed by the use of 70% of the waste glass.
- By using the waste glass as the raw material, the baking at a low temperature is realized, and thereby, the CO<sub>2</sub> discharge can be reduced in the manufacturing process.

< Performance >

- On account of its high strength, the blocks are usable at the car-passing zone.
- Because of the property of burned products, the discoloration is small for a long period, and the changes in other properties are also small.
- A large sliding friction makes it hard to slip down.

#### CRYSTAL CLAY CORP.

4-11-4, Roppongi, Minato-ku, Tokyo , Japan  
Tel 81-3-5775-0021 Fax 81-3-5775-0024  
E-mail [sokato@crystalclay.co.jp](mailto:sokato@crystalclay.co.jp)  
URL <http://www.crystalclay.co.jp/>



Crystalclay CLB Series

## Eco-materials

EM-5-003

Ceramics and Glass

building bricks

### Crystal Cray CT2-series: water- permeable / -reten

< Environment-friendly >

- The product is resource-saving goods that suppressed the amount of clay by using the mixture of the glass waste (30%) and the ceramic waste (65%).
- By using the waste glass as the raw material, the baking at a low temperature is realized, and thereby, the CO<sub>2</sub> discharge can be reduced in the manufacturing process.

< Performance >

- The product is excellent in the following properties: water-permeability, water-retention, lowering of the surface temperature of the road, sound absorption, and heat insulation.
- On account of its high strength, the blocks are usable at the car-passing zone.
- Because of the property of burned products, the discoloration is small for a long period, and the changes in other properties are also small.
- A large sliding friction makes it hard to slip down.

#### CRYSTAL CLAY CORP.

4-11-4, Roppongi, Minato-ku, Tokyo , Japan  
Tel 81-3-5775-0021 Fax 81-3-5775-0024  
E-mail sokato@crystalclay.co.jp  
URL <http://www.crystalclay.co.jp/>



Crystalclay CT2 Series

## Eco-materials

EM-5-004

Ceramics and Glass

tiles

### Crystal Clay FT-series: stoneware quality tiles

< Environment-friendly >

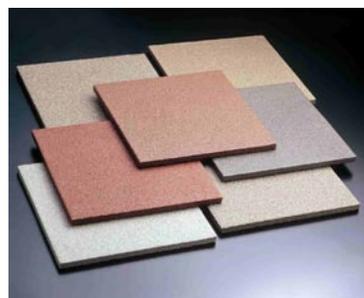
- The product is resource-saving goods, in which the amount of clay was suppressed by the use of 60% of the waste glass.
- By using the waste glass as the raw material, the baking at a low temperature is realized, and thereby, the CO<sub>2</sub> discharge can be reduced by 32% in the manufacturing process.

< Performance >

- The goods are excellent in the durability.
- A large sliding friction makes it hard to slip down.
- Because of the property of burned products, the discoloration is small for a long period, and the changes in other properties are also small.

#### CRYSTAL CLAY CORP.

4-11-4, Roppongi, Minato-ku, Tokyo , Japan  
Tel 81-3-5775-0021 Fax 81-3-5775-0024  
E-mail sokato@crystalclay.co.jp  
URL <http://www.crystalclay.co.jp/>



Crystalclay FT Series

## Eco-materials

EM-5-005

Ceramics and Glass

tiles

### Crystal Clay FP-series : porcelain quality tiles

< Environment-friendly >

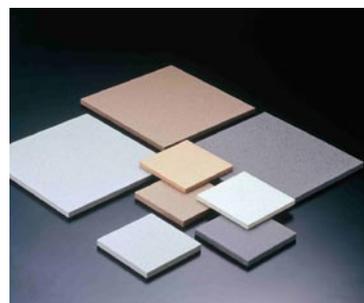
- The product is resource-saving goods, in which the amount of clay was suppressed by the use of 60% of the waste glass.
- By using the waste glass as the raw material, the baking at a low temperature is realized, and thereby, the CO<sub>2</sub> discharge can be reduced in the manufacturing process.

< Performance >

- The goods are excellent in the durability.
- A large sliding friction makes it hard to slip down.
- Because of the property of burned products, the discoloration is small for a long period, and the changes in other properties are also small.

#### CRYSTAL CLAY CORP.

4-11-4, Roppongi, Minato-ku, Tokyo , Japan  
 Tel 81-3-5775-0021 Fax 81-3-5775-0024  
 E-mail sokato@crystalclay.co.jp  
 URL <http://www.crystalclay.co.jp/>



Crystalclay FP Series

## Eco-materials

EM-5-006

Ceramics and Glass

paving materials

### Road Cool

This pavement material contains ground granulated BF slag to reduce urban heat island effects. Road Cool excellently retains rainwater and ensures watersprinkling effects.



#### JFE Steel Corporation

2-2-3 Uchisaiwaicho, Chiyoda-ku, Tokyo 100-0011, Japan  
 Tel Fax  
 E-mail  
 URL <http://www.jfe-steel.co.jp/>



## Eco-materials

EM-5-007

Ceramics and glass

ceramic, stone and clay products

### Reefs for Coral and Seaweed : Marin Block

JFE has been developing restoration technologies for marine environments by utilizing steel slag, which is a byproduct of manufacturing. Porous Marine Block, which is JFE's block product made from steel slag and CO<sub>2</sub> through a solidification reaction, has been adopted for coral reef restoration works in Sekisaishoko on a trial basis. So far, good results have been observed. Marine Block has also been used in rejuvenation experiments for seaweed reefs close to Japan because of its excellent performance as an implantation base for seaweed.



#### JFE Steel Corporation

2-2-3 Uchisaiwaicho, Chiyoda-ku, Tokyo 100-0011, Japan  
 Tel Fax  
 E-mail  
 URL <http://www.jfe-steel.co.jp/>

## Eco-materials

EM-5-008

Ceramics and glass

Soil conditioner

### KATATUMURI The foudation improvement material

The object for the character of the improvement--it burries and they are an object for return, and the improvement material with it covers and which it used for hardening. It is improvement material for carrying out effective use of the muddy soil, which comes out of pond, river, lake, construction site, etc.. The weak soil, and surplus soil. It solidifies enough in the amount of addition of ten to about twenty percent of the soil. Moreover, incinineral ashes, coal ashes, recycling gypsum, etc., of paper manufacture sludge are the main ingredient of this product of this itself is a recycled product. And 6 chromium is not included as a feature of this product. -PH also becomes neutrality immediately again. (non-cement)



#### BAIO WORTH Co., Ltd.

350, Sodai, Mino-shi, Gifu, Japan  
 Tel 81-575-33-2714 Fax 81-575-33-2612  
 E-mail [s-ogawa@ogawakenzai-mino.co.jp](mailto:s-ogawa@ogawakenzai-mino.co.jp)  
 URL

This is a bag of 4Kg, others 10kg, 20kg, 1t.

### Ceramic Bearing Ball for Wind Turbine Bearings

Toshiba Materials Co., Ltd. has developed large ceramic balls for windmill power generator bearings, taking advantage of its unique grain-boundary control technology. They are made of silicon nitrides known to have excellent properties such as high strength, high hardness and light weight as well as longer serviceable life, making them environmentally friendly.

Unlike steel balls, ceramic balls have good insulation property enabling considerable cost reduction for maintenance work because a highly durable and reliable system can be realized that is largely free from electric corrosion.

- **Energy saving:** Reduction in energy loss through bearing rotation.
- **Resource saving:** Threefold increase in bearings' serviceable life.
- **Reduction in use of chemical substances:** Reduction in use of grease lubricant for bearings

#### Toshiba Materials Co., Ltd.

1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan  
 Tel 81-3-3457-4875 Fax 81-3-5444-9235  
 E-mail  
 URL <http://www.toshiba-tmat.co.jp/>



Ceramic Balls for Windmill Power Generator Bearings

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7

## Eco-materials

EM-6-001

Composites

special wood products

### New timber made from architectural waste of woods and logging residue

This product is a timber for pillars, beams and cores of fixtures made from architectural waste of woods and logging residue. The current waste recycling rate is about 40%, which means that about 60% of the waste is burned or used for landfill. Using this timber could increase the recycling rate of architectural waste of woods. Most of the logging residue is left in the forest. Using this timber made of wood residue is one of the solutions for forest conservation. This timber use environmental-friendly non-formaldehyde glue.



#### Sekisui Chemical Co., Ltd. Urban Infrastructure & Environmental Products Headquarters

Toranomon 2-chome Tower, 3-17 Toranomon 2-chome, Minato-ku,  
Tokyo 105-8450, Japan  
Tel 81-(0)3-5521-0776 Fax 81-(0)3-5521-0601  
E-mail karukaya001@sekisui.jp  
URL <http://www.sekisui.co.jp/wood/>



Eco Value Wood

## Eco-materials

EM-6-002

Composites

adhesives

### Water-based Emulsion adhesive products with various foams

These are pressure-sensitive adhesive (PSA) products which have no organic solvent. Conventional PSA has organic solvent, which is the half weigh of undiluted solution of adhesive. Therefore, conventional PSA has emitted a lot of organic solvents in the air, and caused air pollution and sick house syndrome.

New type PSA solves these problems. It has water instead of organic solvents, but its performance is equal to conventional one. It is very easy on the environment.

New PSA is applicable to various products. For example, the polyurethane foam, polyethylene foam, and EPDM foam.



#### Bridgestone Corporation

10-1, Kyobashi 1-chome Chuo-ku, Tokyo 104-8340, Japan  
Tel 81-3-5202-6830 Fax 81-3-5202-6833  
E-mail  
URL <http://www.bridgestone.co.jp/english/index.html>



Water-based Emulsion adhesive products with various foams

## Eco-materials

EM-6-003

Composites

carbon fiber

### Carbon Fibers "Torayca" & Composite Materials

Used in a wide range of applications from primary structural components in airplanes to common industrial uses in automobiles and reinforcement materials and sports applications in fishing rods and golf club shafts, Toray's carbon fiber "TORAYCA" products have earned widespread recognition for their excellent performance. Toray is the largest manufacturer of PAN based carbon fibers in the world.

"Toray's Carbon Fiber Reinforced Plastic (CFRP) is a composite material made of a carbon fiber impregnated with a polymer such as epoxy resin, which is then hardened and molded. While just as strong and rigid as steel and aluminum, CFRP's have the advantage of being much lighter. When used for car hoods, propeller shafts and other components, CFRP's help make cars lighter and improve fuel consumption, thereby contributing to reduced CO<sub>2</sub> emissions."



carbon fiber "Torayca"

#### Toray Industries, Inc.

2-2-1, Nihonbashi-Muromachi, Chuou-ku, Tokyo 103-8666, Japan  
 Tel 81-3-3245-5115 Fax 81-3-3245-5344  
 E-mail Product@nts.toray.co.jp  
 URL <http://www.toray.jp>

## Eco-materials

EM-6-004

Composites

foamed urethane

### Eslon Neo-Lumber FFU

Eslon Neo Lumber FFU (Fiber-reinforced Foamed Urethane) is an anti-corrosive and light-weight material that is made with formed urethane reinforced by long glass fiber strand. It is a very durable, excellent workability just like the wood, and great water resistance with much less maintenance. Therefore, Eslon Neo Lumber has been gaining a great amount of attention as to replace many conventional materials such as railroad sleepers.

#### Ecological aspects;

- Help preserving forest.
- LCC (Life Cycle Cost) can be reduced because of less maintenance and its excellent durability.
- Can be reused by repair.
- Can be recycled from grinding-up granules.
- Environmental impact is much less because of no termite repellents and preservatives.

#### preservatives. Applications;

- Railroad sleepers.
- Deodorizing lids for water treatment facility.
- Anchor walls for civil engineering.
- Water mills.
- Balconies.
- Flooring boards.
- Supporter for floor.
- Bulkheads.
- Track beds.



#### Sekisui Chemical Co., Ltd.

2-3-17, Toranomon, Minato-ku, Tokyo, Japan  
 Tel Fax  
 E-mail [kankyo@sekisui.jp](mailto:kankyo@sekisui.jp)  
 URL <http://www.sekisui.co.jp/>

**Sulfron™ improves fuel consumption and enhances the durability of tires**

Sulfron™, modified aramid derived from Twaron®, is a unique rubber ingredient that has been chemically processed from cut fiber and when absorbed by the tread of a tire, it disperses inside the rubber and as it conforms to the rubber, the tire becomes more durable. It also reduces a rolling resistance, which improve fuel efficiency. Performance of Sulfron;

1. Improves fuel consumption by 5%
2. Increases tire durability by suppressing heating while moving
3. Prevents tire tread cracking

**Teijin Aramid BV**

Westervoortsedijk 73 P.O.Box 9600 6800 TC Arnhem,  
The Netherlands  
Tel 31-26-366-4396 Fax 31-26-366-4110  
E-mail Rabin. Datta@Teijinaramid.com  
URL <http://www.teijinaramid.com/>

## Eco-materials

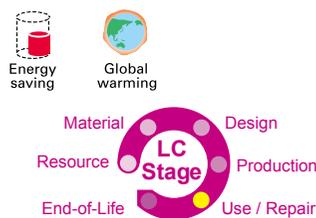
EM-7-001

Others

paints and related products

### Heat ray shielding paint with energy saving and CO<sub>2</sub> reduction effects

Our heat-rays shielding paint is a clear coating-material containing highly dispersed ultra-fine ceramic particles absorbing heat rays in sun light. You can apply this paint for directly coating on glass or film, and give them heat-rays shielding performance without losing their high transparency. As the paint also has good weatherability and radio-wave permeability, as well as high transparency, it has been used widely for glasses of automobile, train, and housing windows, and reduces their air conditioning load. Consequently, the application of this paint contributes significant energy-saving and CO<sub>2</sub> gas emission reduction.



#### Mitsubishi Materials Corporation

1-6-1 Yokoami, Sumida-ku, Tokyo 130-0015, Japan  
 Tel 81-3-5819-7325 Fax 81-3-5819-7327  
 E-mail  
 URL <http://www.mmc.co.jp/adv/>

Available in : Global

Film coated with IR cutting paint

## Eco-materials

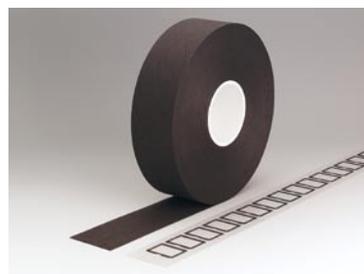
EM-7-002

Others

polymers, plastics, plastic products

### SCF(Super Clean Foam), sealing material for electromics

This is a halogen-free, phosphorous-free foam sealing material for electronics. Foam sealing material is what is put the gap for dust-proof, impingement protection, vibration isolation. Previously, halogen group flame retardants were used where high flame resistance(UL94HF-1) is required. SCF offers high flame resistance(UL94HF-1) without the use of harmful substances and also uses thermoplastic resin of high purity. The bubble diameter is as short as 80 micrometer, providing a downsized/weight-saving approach.



#### Nitto Denko Corporation

HERBIS OSAKA,2-5-25,Umeda,Kita-ku, Osaka 530-0001, Japan  
 Tel 81-6-6452-2101 Fax 81-6-6452-2102  
 E-mail  
 URL <http://www.nitto.co.jp>

SCF(Super Clean Foam)

## Eco-materials

EM-7-003

Others

concrete blocks for construction

### Environment-conscious porous concrete

Environment conscious construction method is recently required for bank protection work. Porous concrete has been developed to be a material for bank protection to content both strengthening and environmental functions.

The void size of this environment-conscious porous concrete (maximum diameter size of inscribed circle: 14mm) is about double of that of conventional porous concrete, which enables various plants and animals to live and cheap soil filling materials to be used. In spite of its large void size, its compressive strength keeps 10N/mm<sup>2</sup>, which is necessary condition for porous concrete bank.

This product can be made from aggregate (5~40 mm) from crushed concrete. Its construction cost is reduced by operating main process within construction site. Machines, admixture and method for quality control specially provided for porous concrete realized efficient and large-scale construction.

#### Kajima Corporation

6-5-11, Akasaka, Minato-ku, Tokyo 107-8348, Japan  
 Tel 81-3-5544-0741 Fax 81-3-5544-1733  
 E-mail env-act@ml.kajima.com  
 URL <http://www.kajima.co.jp/prof/environment/index.htm>



Purification



Environment-conscious porous concrete

## Eco-materials

EM-7-004

Others

non-ferrous metal products

### Columnar-crystal large-diameter silicon for solar cell and semiconductor apparatus

We have developed columnar crystal silicon with the aim of using it as the parts of solar cell and semiconductor apparatus. The product is excellent in machining characteristics, mechanical strength, and chemical resistance, compared to with the poly-crystal products prepared by other methods. Moreover, it has the performance of almost the same level as that of single crystal. It is therefore expected as a substitute in the field where the single crystal has been used. Since a large-diameter product can be made, the demand of columnar silicon crystal is rapidly increasing in the field where SiC, quartz and carbon have been used. From the view-point of the global environmental problems, the product contributes to energy saving and CO<sub>2</sub> emission reduction, because it is the main part of solar cell. In comparison with the competitive Si product in the same field, the product of our company is superior in the efficiency of component manufacturing owing to its large diameter. This reveals an environmentally low-load manufacturing process.

#### JEMCO Inc.

3-1-6 Barajima, Akita City, Akita 010-8585, Japan  
 Tel 81-18-864-6011 Fax 81-18-864-4002  
 E-mail  
 URL <http://www.jemco-mmc.co.jp/index.html>



Global warming



High quality



Columnar Crystal Silicon of the plate type

Available in : Global

**SlurMix®:Eco-friendly, designed for steel and cement industry**

AMITA has developed an easy-to-handle auxiliary fuel called SlurMix for the steel and cement industry, made by compounding and homogenizing certain types of waste oils, oil-containing sludge and waste solvents, all by-products which previously could only be disposed through incineration. The residue remaining after combustion of SlurMix can be used as a raw material in manufacturing cement. SlurMix has about 4,500kcal/kg of calorific value so that it could be an alternative fuel of coal which leads reduction of green house gas emission and saving natural resources. This means that SlurMix ultimately results in zero waste product; it realizes 100% recyclability.



**AMITA CORPORATION**

28, Sanban-cho, Chiyoda-ku, Tokyo 102-0075, Japan  
 Tel 81-3-5215-8255 Fax 81-3-5215-8256  
 E-mail info@amita-net.co.jp  
 URL http://www.amita-net.co.jp

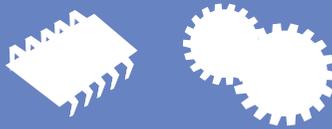
Available in : Asia

SlurMix®

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# Eco-components



- 1 Construction components**
- 2 Electrical and electronic components**
- 3 Semiconductor manufacturing devices**
- 4 Machine parts**
- 5 Automobile parts**
- 6 Packaging**
- 7 Others**

In the *Eco-products Directory 2008*, “eco-components” refer to “environment-conscious components and functional parts assembled using such components.” Eco-components include components that have only low environmental impact when manufactured and components that enable finished (assembled) products to help reduce environmental impact. For example, vacuum insulation materials can be used in refrigerators to achieve energy savings. Components are often called “half-finished products” relative to “finished products,” i.e., many are used in finished products.

As for eco-materials, environmental impact reduction throughout the life cycle is a key point for eco-components. Hence, the six factors under the definition of eco-materials (see the title page “Eco-materials” in the directory) also partly apply to eco-components. For example, when eco-components can provide “high performance when used,” they can increase the energy saved by finished products. The reuse of components as functional parts is a good example of “easy recyclability.” It should be noted, however, that various requirements must be met prior to the reuse of used components, e.g., in terms of long life, quality, and reliability.



## Eco-components

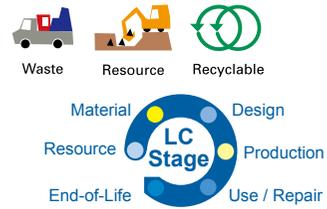
EC-1-001

Construction components

paving materials

### “Ex-shell”, asphalt pavement including scallop shell

The shell of scallop is a byproduct of seafood industry about which the disposal is worried. In the method we have developed, the shell of scallop is crushed into the chips of below 20mm, and they are used as a part of the paving materials. The standard mixing ratio of the shell is 20% in weight. By treating the pavement surface with a sweeping machine such as the shot blast, we get the pavement surface in which the shell is exposed. It is the superior pavement in the views.



**watanabesato co.,Ltd.**

1-18-4 Minamiazabu, Minato-ku, Tokyo 106-8567, Japan  
 Tel 81-3-3453-7350 Fax 81-3-5476-0695  
 E-mail  
 URL <http://www.watanabesato.co.jp/>



## Eco-components

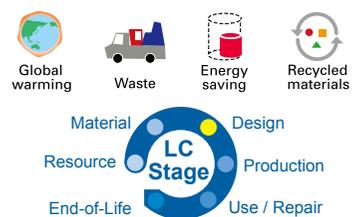
EC-1-002

Construction components

fabrication of finished plastic products

### Non-Freon spray-on thermal insulating material 'Ceramilite-eco®'

In this construction method, We use spray-on thermal insulating material on-site. It does not use Freon-gas, Freon-gas substitute or VOCs which cause 'sickhouse'syndrome. It also contributes to environmental conservation by using recycled products from fractured styrene foam waste as a main material of an insulator. Moreover, because Ceramilite-eco (Semi-non flammable) and Ceramilite-ecoG (Non frammable) does not cause explosive burning like Polyurethane foam does, it obtained high safety against fire. This method received a prize of Ministry of Land, Infrastructure and Transport Government on the 1st Ecoproducts award 2004.



**Obayashi Corporation, Technical research Institute**

640, Shimokiyoto 4-chome, Kiyose-shi, Tokyo 204-8558, Japan  
 Tel 81-42-495-0970 Fax 81-42-495-0908  
 E-mail  
 URL <http://www.obayashi.co.jp/technology/ceramilighteco/index.html>



Available in : SK Kaken co., Ltd. / JAPAN Asia Area

Appearance of Ceramilite-Eco sprayed on wall

## Eco-components

EC-1-003

Construction components

interior and exterior building materials

### Interior/exterior materials from reproduced Al /discarded glass

Alcelite is an interior and exterior finishing material that uses a glass balloon as the primary material. It is made from reproduced aluminum and discarded glass. Its raw materials include recycled products and, in addition, aluminum can be extracted through fusion by heating after use, allowing it to be re-used.



ALCELITE G type

#### Obayashi Corporation, Technical Research Institute

640, Shimokiyoto 4-chome, Kiyose-shi, Tokyo 204-8558, Japan  
 Tel 81-42-495-1265 Fax 81-42-495-0908  
 E-mail mitani.hitofusa@obayashi.co.jp  
 URL <http://www.obayashi.co.jp/>

## Eco-components

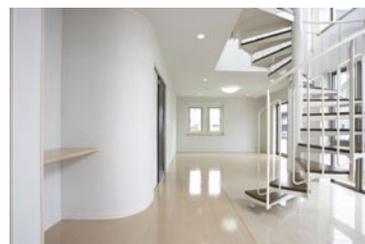
EC-1-004

Construction components

fiber wall materials

### Next-generation interior-decoration building materials "MOISS" for the environment

"MOISS" is the architecture material in the next generation. It is used as an interior material and a proof-stress plane material of the housing. "MOISS" has a humidity control function to absorb/release the moisture in the air, and thereby, balances the humidity of the indoor. It prevents the condensation of dew and the generation of mold and tick, and makes the living conditions comfortable. In addition, it has a function to adsorb volatile organic compound (VOC) and that to reduce unpleasant smell. A natural material "vermiculite" which is the main ingredient, can adsorb the formaldehyde, and detoxify it by the decomposition. This action keeps the indoor air clean. "MOISS" is a recyclable building material. It can be returned to soil after the use, because it consists of natural material and does not include any harmful substances.



#### TOSTEM CORPORATION

1-1, Ojima 2-chome, Koto-ku, Tokyo 136-8535, Japan  
 Tel 81-3-3638-8187 Fax 81-3-3638-8254  
 E-mail  
 URL <http://www.tostem.co.jp/>

## Eco-components

EC-1-005

Construction components

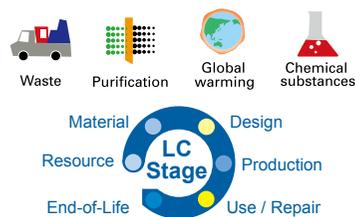
fiber wall materials

### “Air-nice”, a plastered wall material using rush and natural materials

The rush is a building material that has been used in Japan from the old days, and suitable for the Japanese climate of high temperature and humidity. It is mainly used for the Japanese housing as the grass mat “tatami”, which is known to have the function of humidity control. In general, till the “tatami” mat is woven up, one-third of the rush is emitted as waste. Recently, it has been proven that “tatami” adsorbs chemical substances such as nitrogen dioxide and formaldehyde. Then, we pulverize the waste of “tatami” which used to be burned up before, mixed with natural materials and made a plastered wall material as a commercial goods. Completed was a wall material having a warm atmosphere which is not felt from the usual plaster and diatomaceous earth. The new product regulates the indoor environment by the functions of the humidity control and the adsorption, as well as restrains the emission of carbon dioxide by the neglect of incineration of the waste. As for the recent, air-tight houses, the influence of chemical substances on human body becomes a serious matter. By using the rush wall-material, we can improve the living conditions.

**IKEHIKO CORPORATION Co.,Ltd.**

1052 Miyamatsu, Ooki-machi, Mizuma-gun, Fukuoka 830-0424, Japan  
Tel 81-944-32-1203 Fax 81-944-33-1059  
E-mail  
URL <http://www.ikehiko.com>



RushFiberWallMaterial"KUUKIYOI"

## Eco-components

EC-1-006

Construction components

heat insulating film

### Reftel®, Highly Transparent, Heat Insulating Film

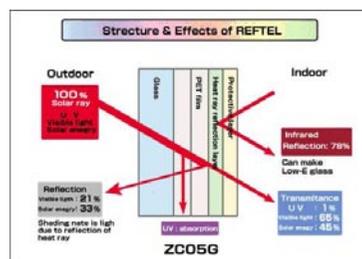
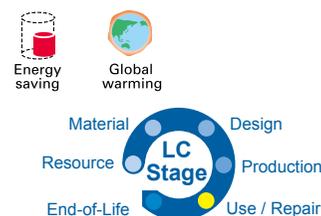
Reftel® is the highly transparent and heat reflective insulating film developed by Teijin firstly in the world.

It is made by coating Teijin's polyester (PET) film with ultra thin metal layers by sputtering method. It has a selective heat and light transmittance, and gives higher transparency, higher heat shield and better durability compared with Aluminum vapor deposited films, colored films or IR (Infrared) absorbing film. It is hardly noticeable when it is installed to glass window because it has 60 to 80% transmittance of visible light.

There are variety of grades which have different visible light transmittance to meet any requirement. It has high infrared reflectivity and thus yield high energy saving effectiveness. It is one the Teijin's products which contribute the effective usage of resources and protection of environment of Earth.

**N.I. Teijin Shoji Co., Limited**

Sumitomo fudosan Shibadaimon Bldg., 5-5, Shibadaimon 2-chome, Minato-ku, Tokyo 105-0012, Japan  
Tel 81-3-6402-7006 Fax 81-3-6402-7071  
E-mail [tshinguu11134@ni-teijinshoji.co.jp](mailto:tshinguu11134@ni-teijinshoji.co.jp)  
URL <http://www.teijin.co.jp/english/about/reftel/>



Structure and effect of Reftel® (Type ZC05G)

**Recycling waste for Construction Industry; recycled aggregates supplier**

SamGreen provides collection service for all types of cementitious and bituminous based Construction and Demolition waste. These products are sent to our yard in Kranji and Lim Chu Kang for screening and filtering of un-recyclable wastes, followed by crushing and sorting into various sized aggregate products. We supply and deliver recycled aggregates ranging from 5mm up to 20mm according to our client's requirement. Our aggregates are being used by Clients in non-structural concrete components, road base and applications in various road levels.

SamGreen also have our very own in-house testing and research capabilities. This allows us to constantly improve our formulation and develop innovative usages for new recycled material. We are constantly seeking to value-add to the existing range of products in accordance to the market needs and demands.

By recycling the construction wastes, we have effectively reduced the need for landfill in land scarce Singapore. The innovative use of recycled aggregates has also reduced our dependency on imported aggregate materials from neighboring country, in turn conserving the limited resources of granite aggregate and bituminous products.



**Samgreen Pte Ltd**

51 Kranji Crescent, 728661 Singapore  
 Tel (65) 63672377 Fax (65) 63650512  
 E-mail [samgreen@singnet.com.sg](mailto:samgreen@singnet.com.sg)  
 URL <http://www.samwoh.com.sg>

Available in : Singapore

## Eco-components

EC-2-001

Electrical and electronic components

copper cables

### Eco-green® Environment-conscious type electric wire and cable

#### Background

- (1) The environment-conscious type electric wire with an excellent safety and recyclability is developed.
- (2) The recycling system of the abolition electric wire is established.

#### Feature of Eco-green®

- (1) There is no dioxin when incinerating, and is no harmful substance when laying underground.
- (2) The use material is few, and waste is little.
- (3) The halogen gas is not generated and a smoking amount is low at the fire occurrence.

#### Hitachi Cable, Ltd.

Hitaka Works, 5-1-1 Hitaka-cho, Hitachi-shi, Ibaraki-ken 319-1414, Japan  
 Tel +81-294-25-3835 Fax +81-294-43-3852  
 E-mail [taketani.noriaki@hitachi-cable.co.jp](mailto:taketani.noriaki@hitachi-cable.co.jp)  
 URL <http://www.hitachi-cable.co.jp/>



Eco-green® Environment-conscious type

## Eco-components

EC-2-002

Electrical and electronic components

wire cables

### Self-lubrication magnet wire with heatproof of high strength(KOMAKI)

#### Usage

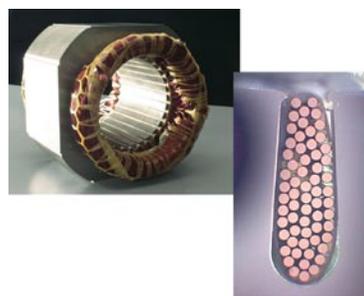
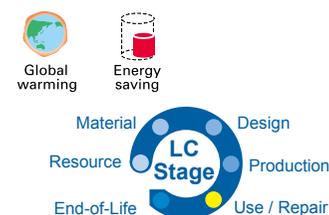
- (1) It uses it for the winding for various motors and generators.
- (2) It widely uses it for the car and the consumer electronic, etc.

#### Feature of KOMAKI

- (1) The wound generation at the winding is suppressed by developing a high strength cover material.
- (2) The lamination factor of the coil improves by the self-lubrication by 10% or more, and the miniaturization is also possible.
- (3) Highly effective of the motor is possible by the improvement of the lamination factor of the coil.

#### Hitachi Cable, Ltd.

Hitaka Works, 5-1-1 Hitaka-cho, Hitachi-shi, Ibaraki-ken 319-1414, Japan  
 Tel +81-294-25-3835 Fax +81-294-43-3852  
 E-mail [taketani.noriaki@hitachi-cable.co.jp](mailto:taketani.noriaki@hitachi-cable.co.jp)  
 URL <http://www.hitachi-cable.co.jp/>



Self-lubrication electric wire(KOMAKI)

## Eco-components

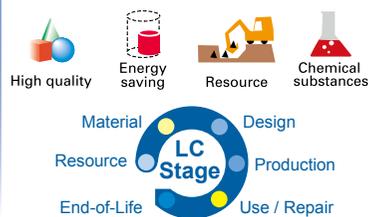
EC-2-003

Electrical and electronic components

motors for washing machine

### DC Brushless motor for Washing machine with internal drive

- Energy Saving: Efficiency is 80% at the rated power of 170W, and 35 points upper than 45% of single-phase induction motors.
- Higher Quality: This motor comprises a drive circuit inside and is easily connected to that of washing machines, so that the precous control of the speed and position can be achieved in the washing machine's dinamic motion and quick response to oincrease the washing performance.
- Resource Saving: Small size is achived by the increase of power density, and the weight is reduced to 2.6kg from 4.2kg of a single-phase induction motor and its volume is reduced to 63%.
- Non-Use of Specific Chemical Substances \*  
(\*: Lead, mercury, cadmium, hexavalent chromium, two specific brominated flame retardants, designated by the EU RoHS Directive.)



**Matsushita Electric Industrial Co.,LTD. Motor Company**

7-1-1, Morofuku, Daito, Osaka 574-0044, Japan  
Tel Fax  
E-mail  
URL

Available in : Global

DC Brushless motor for Washing machine with internal drive, AR-9W

## Eco-components

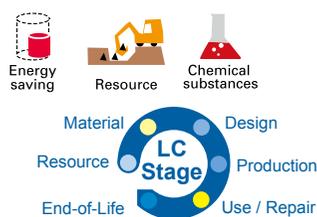
EC-2-004

Electrical and electronic components

motors for air-conditioning

### DC Brushless Fan Motor for Air-conditioning

- Energy Saving: Efficiency is 80% at the power of 195W, and 2 points upper than 78% of ferrite SPM-structured motors by driving rare earth IPM- structured motors with an original position control.
- Resource Saving: Small size is achived by the increase of power density, and the volume is reduced to 62% of ferrite SPM-structured motors.
- Non-Use of Specific Chemical Substances \*  
(\*: Lead, mercury, cadmium, hexavalent chromium, two specific brominated flame retardants, designated by the EU RoHS Directive.)



**Matsushita Electric Industrial Co., Ltd. Motor Company**

7-1-1 Morofuku, Daito, Osaka 574-0044, Japan  
Tel Fax  
E-mail  
URL

Available in : Global

DC Brushless Fan Motor for Air-conditioning AR-10 series

## Eco-components

EC-2-005

Electrical and electronic components

motors of drive circuit integrate type

### Brushless Motor with internal drive; B1-G,B3-G series

It is a high efficiency DC brushless motor of drive circuit integrating type which is widely used for the industry.

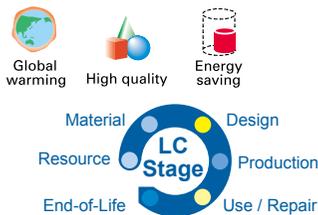
The equipment development makes easy to compose at the conventional induction motor and in the identical shape, to replace a motor only and to become energy saving.

The loss is reduced to about a half. The downing with 23% of volume and 28% of mass compared with the conventional induction motor + inverter is achieved. Position control is available and the speed control range is becoming more than 10 times.

It is used for conveyors and automatic doors and so on.

Non-Use of Specific Chemical Substances \*

(\*: Lead, mercury, cadmium, hexavalent chromium, two specific brominated flame retardants, designated by the EU RoHS Directive.)



#### Matsushita Electric Industrial Co.,LTD. Motor Company

7-1-1 Morofuku, Daito City, Osaka 574-0044, Japan  
Tel 81-120-70-3799 Fax 81-72-870-3120  
E-mail  
URL <http://industrial.panasonic.com/>

Available in : Global except China

Drive circuit integrate type motor MBMC5A2AXB

## Eco-components

EC-2-006

Electrical and electronic components

breakers

### 1 pole-module "KANTACCHI-RIMOKON" Breakers

This product is a 1 pole-module breaker called "KANTACCHI-RIMOKON" integrated remote control relay for lighting control.

1. A half space needed for equipment by incorporating remote control relays into 1 pole-size.
2. No connecting wires by no wires from breaker to relay.
3. No pressure terminal installation by adopting quick connecting terminal of solid wires.



#### Matsushita Electric Works Electric Control Equipment & Systems, Ltd.

1123 Tsunoda, Sango-cho, Owariasahi, Aichi 488-8520, Japan  
Tel 81-561-54-3518 Fax 81-561-54-6649  
E-mail  
URL <http://group.mew.co.jp/meweces/>

Available in : Japan

KANTACCHI-RIMOKON Breaker : BKFR2200RT

## Eco-components

EC-2-007

Electrical and electronic components

parts of electric lighting fixtures

### Longer Lamp Life & Eco Lighting: Digital Starter Pro

Have you got the problem of frequent fluorescent lamps/starters replacement in your buildings and elevators? and the problem of disposing heaps of lamp wastes that contain toxic mercury?

The Digital Starter Pro has a built-in microcomputer chip for software control of emitter diffusion in lighting the lamp. It offers maintenance-free effect by drastically extending lamp service life up to 30 times longer than the conventional glow starter.

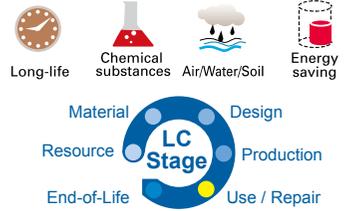
The longer lamp life directly leads to save environment by minimizing the number of fluorescent lamp wastes. Moreover, Digital Starter Pro facilitates the diligent turn on/off of lamps to achieve greater energy saving.

#### Features

1. Advanced digital circuit assures the best optimized lamp preheating time and High Voltage Pulse level
2. Multiple pulse lighting system assures reliable lighting even under cold environment
3. Instantaneous lighting
4. Automatic relighting function makes retries to start lamps in the event of momentary voltage drop
5. Double safety protection system with automatic power cut off feature for lamps near the end of service life

#### DCT Co., Ltd.

3-15-6, Higashi Shibuya-ku, Tokyo 150-0011, Japan  
 Tel 81-3-5468-7131 Fax 81-3-5468-7399  
 E-mail [info@dct-web.co.jp](mailto:info@dct-web.co.jp)  
 URL <http://www.dct-web.co.jp>



Available in : Japan, China, EU countries

Digital Starter Pro series:FDS-1E, 1P and 4P/5P

## Eco-components

EC-2-008

Electrical and electronic components

parts of electric lighting fixtures

### PM Sensor Digital Starter Pro/ Sensor lighting realized by fluorescent lamp starter

PM Sensor Digital Starter Pro is the world-first revolutionary technology that realizes photo/motion sensor lighting by fluorescent lamp starter.

Photo/Motion sensor embedded Digital Starter is driven by the cutting-edge technology that combines fluorescent lamp starter function and photo/motion sensor driver in one ASIC.

DCT ASIC receives signal from sensor part and automatically turn on/off the lamp accordingly without physical switching :proprietary Quenching Technology.

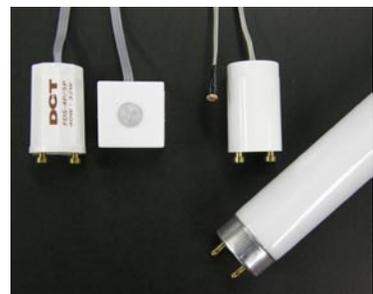
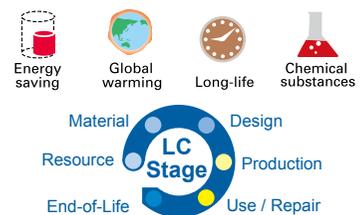
Combined with the longer lamp life characteristic of Digital Starter, sensor Digital Starter overcomes the problems of conventional sensor lighting such as shorter lamp life and shorter fixture life especially in out-door applications.

#### Features

1. Easy to install: just replace starter to DCT in existing magnetic ballast based fixtures.
2. PM Digital starter controls the turns on/off the lamp by sensor without physical switchings.
3. Longer lamp life even under frequent turn on/off by sensors
4. Super environment-friendly: reducing lamp disposal and saving electricity consumption.

#### DCT Co., Ltd.

3-15-6 Higashi, Shibuya, Tokyo 150-0011, Japan  
 Tel 81-3-5468-7131 Fax 81-3-5468-7399  
 E-mail [info@dct-web.co.jp](mailto:info@dct-web.co.jp)  
 URL <http://www.dct-web.co.jp>



Available in : Japan, EU countries and China

FDS-PM series

## Eco-components

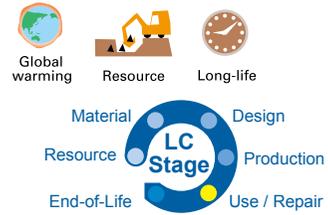
EC-2-009

Electrical and electronic components

secondary batteries

### NAS battery systems

The NAS battery is an energy storage battery that uses sodium in the negative electrode, sulfur in the positive electrode, and solid electrolyte made from beta-alumina ceramics. It is a clean battery that has high energy density, high efficiency, and long life compared to lead-acid battery. This technology is primarily being introduced into factories, office buildings and sewage treatment facilities that wishing to economize their energy cost through load leveling, and into semiconductor plants and customers that need high-quality and highly reliable electric power.



#### Tokyo Electric Power Company

1-1-3 Uchisaiwai-cho, Chiyoda-ku, Tokyo 100-8560, Japan  
Tel 81-3-4216-1111 Fax 81-45-613-7798  
E-mail [tashiro.yoichiro@tepco.co.jp](mailto:tashiro.yoichiro@tepco.co.jp)  
URL <http://www.tepco.co.jp/en/index-e.html>



Available in : Japan

NAS battery system

## Eco-components

EC-2-010

Electrical and electronic components

electrical contacts

### Environment-friendly cadmium-free electric contact

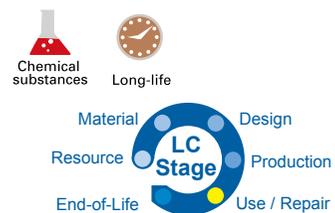
#### < Features >

This product is a high-reliability cadmium-free electric contact, which is excellent in welding resistance and consumption resistance.

These electric contacts provide relays and switches with longer life and higher capacity, also making them much smaller in size.

#### < Uses >

They had been widely used in relays, switches, magnetic contactors, circuit breakers and circuit protectors in on-vehicle electrical components, home appliances, power distribution apparatus, switchboards and others. They are also widely adopted in hybrid cars making them suitable for high voltage power systems.



#### Mitsubishi Materials C.M.I. Corporation

46-1 Sempuku, Susono-city, Shizuoka 410-1116, Japan  
Tel 81-55-992-6111 Fax 81-55-992-6137  
E-mail  
URL <http://group.mmc.co.jp/cmi/>



Available in : Japan, Asia, Europe and North America

Electrical contact for on-vehicle

## Eco-components

EC-2-011

Electrical and electronic components

CCD Camera System for Image Intensifie

### Environment-conscious CCD camera system for medical and industrial uses

This CCD camera system is a system used in the image tube system which is built in a medical or industrial X-ray fluoroscopic device. The device converts the X-ray which penetrates the object to visible light by the image tube, and then makes an observable image with the aid of the CCD camera. This product corresponds to the portion which takes out the output of the image tube as an image. This camera system has been developed by placing the priority on the following items: light weighting / compactification / energy-saving /RoHS correspondence, in comparison with the camera system which is now on sale.

- **Energy-saving:** Power consumption 9% lower than for the previous model.
- **Resource-saving:** Compact system thanks to about 50% reduction in weight and about 60% reduction in volume compared with the previous model.
- **Elimination of harmful chemical substances:** Compliant with regulations covering use of specific hazardous substances.

The product won a prize at the 4th Eco-Products Awards in Japan. (The prize was given to X-ray CT diagnostic apparatus / X-ray tube / CCD camera for new generation environment.)

#### Toshiba Electron Tubes & Devices Co.,Ltd

1385, Shimoishigami, Otawara-shi, Tochigi 324-8550, Japan  
Tel Fax 81-287-26-2059  
E-mail  
URL [http://www.toshiba-tetd.co.jp/tetd/index\\_j.htm](http://www.toshiba-tetd.co.jp/tetd/index_j.htm)



Camera head(up side),Camera Control Unit(down side)

## Eco-components

EC-2-012

Electrical and electronic components

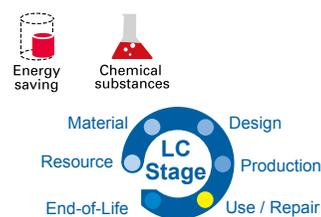
semiconductor IC

### Single Chip Inverter IC

Hitachi intelligent power IC. Making of the logic element and the power switching element to the single-chip is possible, and there is no mutual interference between between elements, the element, and the substrate. The Hitachi high resisting pressure monolithic IC is intelligent power IC to develop by an original dielectric substance separation (DI) technology. Even if a high resisting pressure and the large current output circuit exist together to the logic circuit, it is possible to make it to IC with between elements and the element because of the structure of there is no latch-up between substrates. It is possible to miniaturize it compared with the past, discrete composition substrate hybrid integrated circuit.

#### Hitachi, Ltd.

Akihabara Daibiru Building, 18-13 Soto-Kanda 1-chome, Chiyoda-ku, Tokyo 101-8618, Japan  
Tel Fax  
E-mail  
URL <http://www.hitachi.com/>



Single Chip Inverter IC

## Eco-components

EC-2-013

Electrical and electronic components

Organic Light Emitting Diode for mobile phones

### Organic Light Emitting Diode for mobile phones, pursuing beauty and extreme thinness

This product is a next generation display module, which has a function of the spontaneous light emission like the CRT. The image of wide angle, vivid color, and less afterimage was realized in spite of the compact module. In addition, the backlight is unnecessary. This contributes greatly to the thinness and the light weight of cellular phones. Moreover, although the organic electroluminescence needs the electric power for light emission, energy saving on the whole of the display system can be expected owing to the needless of backlight.

- **Energy saving:** For the power cut of back light source, the power consumption was reduced by about 270mV as the back light of liquid crystal.
- **Resource Saving:** Reduction of the number of back light parts ( Number of the parts was reduced by 50% and back light weight by about 4.5g in the comparison of liquid crystal panel.)
- **Elimination of harmful chemical substances:** Mercury inclusion "zero" of the small fluorescent lamp which is light source was realized.



3.2inch WQVGA organic light emitting diode for mobile phones

#### Toshiba Matsushita Display Technology Co., Ltd.

Rivage Shinagawa4-1-8, Konan, Minatoku, Tokyo 108-0075, Japan  
Tel 81-3-5462-7331 Fax 81-3-3458-0075  
E-mail  
URL [http://www.tmdisplay.com/tm\\_dsp/jp/index.html](http://www.tmdisplay.com/tm_dsp/jp/index.html)

## Eco-components

EC-2-014

Electrical and electronic components

LCD module for mobile phones

### LCD module for mobile phones emphasizing thinness

The product is a thin light liquid crystal module of 0.99mm thick. It was made on the basis of the low-temperature poly-silicon technology, by the introduction of thin type glass substrates process and by the combination with a newly-developed thin-type LED back light. It is a high-quality and high-functional liquid crystal module which is suitable for animation owing to a high definition (QVGA, 240×320 pixel).

- **Energy saving:** Backlight power was reduced by the introduction of a LED backlight
- **Resource saving:** Module thickness of 0.99mm and total weight of 3.9g was realized. This contributed to the decrease of the used materials.
- **Elimination of harmful chemical substances:** An emission diode was used as the light source of backlight, so the mercury which was contained in the conventional backlight was disused.



2.0inch QVGA LCD module

#### Toshiba Matsushita Display Technology Co., Ltd.

Rivage Shinagawa4-1-8, Konan, Minatoku, Tokyo 108-0075, Japan  
Tel 81-3-5462-7331 Fax 81-3-3458-0075  
E-mail [greenproc@tmdisplay.com](mailto:greenproc@tmdisplay.com)  
URL [http://www.tmdisplay.com/tm\\_dsp/jp/index.html](http://www.tmdisplay.com/tm_dsp/jp/index.html)

## Eco-components

EC-2-015

Electrical and electronic components

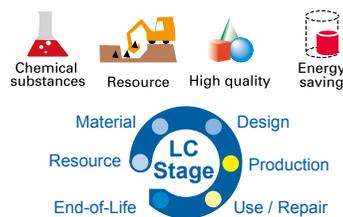
hard disk drive

### 2.5 inch hard disk drive which realized a large storage capacity of 320GB

“MK3252GSX” realized a 320GB hard disk drive, which is the largest storage capacity\*<sup>1</sup> of 2.5-inch hard disk drive in the world.

\*<sup>1</sup> The industry's largest commercially available capacity in a 2.5-inch hard disk drive, as of August 21, 2007 (source: Toshiba)

- **Energy saving:** In comparison with MK6015MAP, energy consumption efficiency was improved to about above 1/70.
- **Resource Saving:** when the 3.5-inch hard disk drive is replaced with this product, lightening of weight to below 1/6 is possible.



MK3252GSX

#### TOSHIBA CORPORATION Digital Media Network Company

1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan  
 Tel Fax  
 E-mail [tsuyoshi.sasaki@dpg.toshiba.co.jp](mailto:tsuyoshi.sasaki@dpg.toshiba.co.jp)  
 URL <http://www.toshiba.co.jp>

## Eco-components

EC-2-016

Electrical and electronic components

solar charge controllers

### Solar Charge Controllers

Phocos is one of the largest suppliers of off-grid power supply system components in the world. Headquartered in Ulm, Germany, Phocos develops, designs and manufactures products to suit the needs of all stake-holders in the global solar power market.

Phocos is strongly committed in developing and producing products that meet the company strict specifications in terms of quality, innovation and technology in our products.

We manufacture wide range of core system components for energy conversion, energy management and energy utilisation in photovoltaic and other renewable energy sources.

We offer comprehensive range of solar charge controllers between 4A to 300A with charging current of 12, 24 and 48V. Flexible programmable hybrid system controllers are available as well.



#### PHOCOS SEA PTE LTD

51 Ayer Rajah Crescent, #06-15 139948, Singapore  
 Tel (65) 6778 9509 Fax (65) 6778 0119  
 E-mail [info-sea@phocos.com](mailto:info-sea@phocos.com)  
 URL <http://www.phocos.com>

Available in : Worldwide

Solar Charge Controllers

## Eco-components

EC-3-001

Semiconductor manufacturing devices

communications cables

### Modifaid II tin plating FFC(Flexible Flat Cable)

#### Usage

- (1) FFC(Flexible Flat Cable) is a flat multi wick cable, and it is used for the internal wiring material.
- (2) It is used for the office suppliesthe and consumer electronic such as the digital camera, audio and LCD TVs.

#### Feature of Modifaid 2 tin plating FFC(Flexible Flat Cable)

- (1) Lead not acceptable to use according to the RoHS directive is not used.
- (2) The generation of Wisca was reduce without the gold plate.

#### Hitachi Cable, Ltd.

Hitaka Works, 5-1-1 Hitaka-cho, Hitachi-shi, Ibaraki-ken 319-1414, Japan  
 Tel +81-294-25-3835 Fax +81-294-43-3852  
 E-mail [taketani.noriaki@hitachi-cable.co.jp](mailto:taketani.noriaki@hitachi-cable.co.jp)  
 URL <http://www.hitachi-cable.co.jp/>



Modifaid II tin plating FFC(Flexible Flat Cable)

## Eco-components

EC-3-002

Semiconductor manufacturing devices

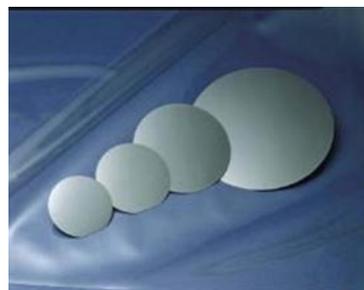
parts of semiconductor manufacturing equipments

### Dummy Wafer

Bridgestone Corporation is a globally focused tire company engaged in a wide range of activities. Along with our strong research and development program, which has produced numerous achievements, "PureBeta". A high-purity silicon carbide sintered product of the highest quality; created through the combination of high-level polymer technology. With Bridgestone's recently developed nano-technologies. Purebeta is manufactured on a very clean production line that integrates the synthesis of SiC powder, by sintering, processing and cleaning. PureBeta provides high performance and cost efficiency compared to Si. In the semiconductor manufacturing process, Si wafers are typically used as dummy wafers, however, are scrapped after several usage. On the other hand, because of its excellent resistance against wet cleaning, SiC wafers can be used almost permanently which is also good for the environment. This is an ultra high purity Dummy Wafer suitable for various applications. Also applicable to the 300mm wafer processes.

#### Bridgestone Corporation

10-1, Kyobashi 1-chome Chuo-ku, Tokyo 104-8340, Japan  
 Tel 81-42-342-6486 Fax 81-42-342-6428  
 E-mail [pbinfo@group.bridgestone.co.jp](mailto:pbinfo@group.bridgestone.co.jp)  
 URL <http://www.purebeta.com/global/>



Dummy Wafer

## Eco-components

EC-3-003

Semiconductor manufacturing devices

relays

### Ultra-compact 1c-type 3GHz high-frequency relay "RS Relay"

#### <Product Features>

- The smallest\* high frequency relay with 3GHz capability. (\*as of 30.Nov.2006)
- Compared to our conventional product "RK relay", the volume is cut down approximately 60%, and still excellent high frequency quality is obtained.
- Noiseless type (30dB) is also available for networking and other various markets.

#### <Environmental Features>

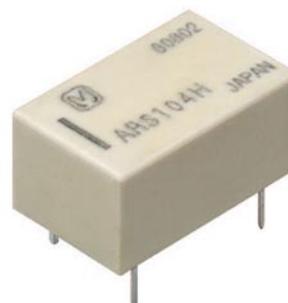
- The volume is cut down approx. 60% compared to our conventional product "RK relay".
- Non-Use of Specific Chemical Substances\* (\*Lead, mercury, cadmium, hexavalent chromium, PBB and PBDE, designated by the EU RoHS Directive.)



Resource



High quality



RS Relay : ARS104H

#### Matsushita Electric Works, Ltd.

1048 Kadoma, Kadoma, Osaka 571-8686, Japan  
 Tel 81-6-6908-1073 Fax 81-6-6909-2415  
 E-mail  
 URL <http://www.mew.co.jp/ac/e/>

Available in : Global

## Eco-components

EC-3-004

Semiconductor manufacturing devices

semiconductor and ic measuring instruments

### Intelligent Power Module

#### -----<< M : Material >>-----

New insulation package technology with high heat dissipation allows about 60% super-miniaturization compared to previous designs.

#### -----<< E : Energy >>-----

Intelligent Power Modules are the very key devices for energy saving of almost all kinds of electric appliances or machines and have been delivered around the world.

#### -----<< T : Toxicity >>-----

Uses completely lead-free solder for chip connections and terminal plating inside product.



Energy saving



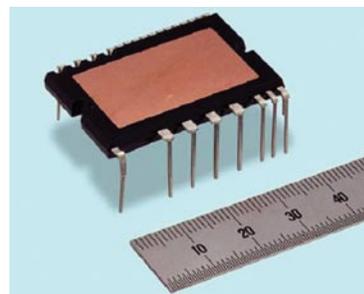
Chemical substances



Resource



High quality



#### Mitsubishi Electric Corporation

2-7-3, Marunouchi, Chiyoda-ku, Tokyo 100-8310, Japan  
 Tel 81-3-3218-2238 Fax 81-3-3218-2465  
 E-mail [eqd.eco@pj.MitsubishiElectric.co.jp](mailto:eqd.eco@pj.MitsubishiElectric.co.jp)  
 URL <http://www.MitsubishiElectric.co.jp/corporate/eco>

Available in : worldwide

Dual-in-line Package Intelligent Power Module

## Eco-components

EC-3-005

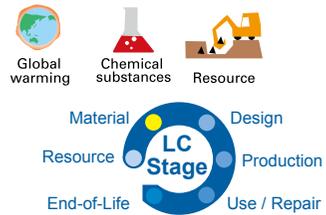
Semiconductor manufacturing devices

radio applied equipments

### Ultra small and low-power, Bi-directional Wireless Module

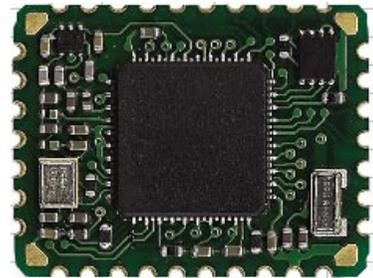
This bi-directional wireless module achieves ultra small size and ultra low-power.

- Low transmitting and receiving current and hi-speed carrier sense makes low time and power consumption.
- Small size with 1-chip LSI(wireless circuit + microcomputer) leads resource saving.



#### Matsushita Electric Industrial Co., Ltd.

800 Tsutsui-cho, Yamato-koriyama, Nara 639-1188, Japan  
 Tel 81-743-56-9176 Fax 81-743-56-0154  
 E-mail  
 URL



Available in : Japan

Wireless Module GB-M1CSB21

## Eco-components

EC-3-006

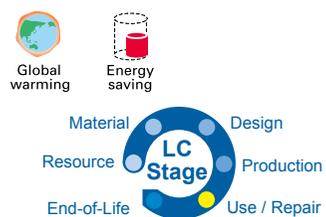
Semiconductor manufacturing devices

silicon transistors

### Low Resistance(on) Trench MOSFET

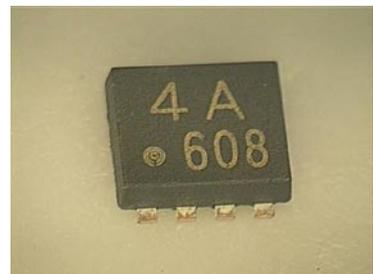
Low energy consumption semiconductor device.

Super low resistance(on) of industrial top-level is realized by using a fine process technology for reducing R(on).  
 40 m  $\Omega$   $\rightarrow$  28 m  $\Omega$



#### Panasonic Semiconductor Discrete Devices Co., Ltd.

8-1 Minamihiro-machi, Umezu, Ukyo-ku, Kyoto 615-0901, Japan  
 Tel 81-75-871-1500 Fax  
 E-mail  
 URL



Available in : Global

MTMC8E28 (Dual MOSFET in SO8-F1 Package)

## Eco-components

EC-3-007

Semiconductor manufacturing devices

semiconductor devices

### Maicovicon Image Sensor with high image-quality and low power consumption

This MAICOVICON Image-sensor has the following characteristics.

<Miniaturization>

8 million pixels of the industrial top-level is realized for the 4/3 system to be minimum as an image sensor for a digital single lens reflex camera.

<Low Power Consumption>

Low power consumption is achieved by the high-speed processing and low noise with the low voltage drive of 5.0V. As a result, taking a movie for a long time is possible without consuming so much energy.

<Resource Saving>

The production process of MAICOVICON Image-sensors is much reduced than that of CCD Image-sensors. So that the resources and energy for production process are reduced remarkably.



4/3"-8.0M-pixel Maicovicon (MN39960)

**Matsushita Electric Industrial Co., Ltd.  
Semiconductor Company**

1 Kotari-yakemachi, Nagaokakyo, Kyoto 617-8520, Japan  
Tel 81-75-956-9347 Fax 81-75-957-3682  
E-mail  
URL <http://panasonic.co.jp/semicon/>

Available in : mostly Japan, possibly Global

## Eco-components

EC-3-008

Semiconductor manufacturing devices

connectors for printed boards

### Narrow-pitch connectors for board-to-board connection P35S

To satisfy the trend toward mobile phones that are getting more compact and sophisticated, mounting components including connectors are required to be downsized. To meet such growing needs, P35S reduces the terminal pitch from 0.4mm to 0.35mm with maintaining the high contact reliability of P4S already on the market, and therefore requires less space. This downsized design contributes to the reduction of material and energy consumption for component manufacturing.

<Environmental Characteristics>

- Resource saving: Space-saving of 12% compared to the currently sold P4S
- Non-Use of Specific Chemical Substances\*  
(\*Lead, mercury, cadmium, hexavalent chromium, PBB and PBDE, designated by the EU RoHS Directive.)



Narrow-pitch connectors : P35S

**Matsushita Electric Works, Ltd.**

1048 Kadoma, Kadoma, Osaka 571-8686, Japan  
Tel 81-6-6908-1073 Fax 81-6-6909-2415  
E-mail  
URL <http://www.mew.co.jp/ac/>

Available in : Global

## Eco-components

EC-3-009

Semiconductor manufacturing devices

connectors for printed boards

### microSD Card Socket

To satisfy the trend toward mobile phones that are getting thinner and more compact, further downsizing of memory cards are required, and the microSD card has rapidly become popular. The ultra-low height and high-reliable socket for the microSD has been developed, which achieves super robustness and EMI resistance.

#### <Product Characteristics>

- This socket has RF terminals as standard for the first time in the industry. (supporting the card's advanced feature)
- Robustness and thickness reduction are realized by double-sided metal shell and laser welding.
- The detection switch detects a card in the card insertion direction, which enables to narrow socket's width.

#### <Environmental Characteristics>

- Resource saving: Space-saving of 65% compared to the currently sold miniSD volume.
- Non-Use of Specific Chemical Substances\*  
(\*Lead, mercury, cadmium, hexavalent chromium, PBB and PBDE, designated by the EU RoHS Directive.)

#### Matsushita Electric Works, Ltd.

1048 Kadoma, Kadoma, Osaka 571-8686, Japan  
Tel 81-6-6908-1073 Fax 81-6-6909-2415  
E-mail  
URL <http://www.mew.co.jp/ac/>



microSD Card Socket

Available in : Global

## Eco-components

EC-3-010

Semiconductor manufacturing devices

rigid printed boards

### High-reliability Al circuits substrate (DBA substrate) for motor-drive of eco-cars

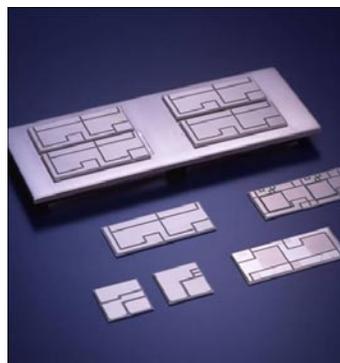
Using the different materials junction technique of aluminum and ceramics (AlN), we manufacture the Al circuits substrate (DBA substrate) with high-reliability for power modules.

As the parts for the automobile field, it is required that peeling-off and cracking at the junction portion do not occur by the thermal cycling test (-40 ~ 125 °C, more than 3000 cycles). The conventional substrates have not cleared this severe condition. Our company's product satisfied this severe request, and has been used as an important part in the mobile application which needs high reliability. For example, it is used as a part of the inverter for motor drive of the eco-cars such as hybrid vehicle and electric automobile.

Since the beginning of mass-production, 10 years have passed. During the period, DBA substrates are mounted on the hybrid vehicles of above 1 million. At present, AlN insulator is the main stream, but we promote also the practical use of various ceramics including silicon nitride and others for DBA substrates.

#### Mitsubishi Materials Corporation (Sanda Plant Shizuoka DBA Center)

1400 Saganuma, Oyamacho, Suntogun, Shizuoka 410-1312, Japan  
Tel 81-550-76-3106 Fax 81-550-76-3107  
E-mail [suzukiss@mmc.co.jp](mailto:suzukiss@mmc.co.jp)  
URL <http://www.mmc.co.jp>



DBA(Direct Brazed Aluminum)Substrates

Available in : Japan, USA and Europe

## Eco-components

EC-3-011

Semiconductor manufacturing devices

permanent magnets

### Neodymium-Iron-Boron Permanent Magnets "NEOMAX®"

These high-energy neodymium-iron-boron (Nd-Fe-B) magnets have the most powerful magnetic properties available today. These products are suitable for a use in such extreme temperature situations as alternators and drive motors of hybrid/electric vehicles (HEVs), which contributes to reduced automobile fuel consumption. NEOMAX® products are also used in such household applications as refrigerators and airconditioners as well as in wind-powered electricity generation, thereby significantly contributing to the prevention of global warming.



#### Hitachi Metals, Ltd.

SEAVANS North Building, 1-2-1, Shibaura, Minato-ku, Tokyo  
105-8614, Japan  
Tel 81-3-5765-4202 Fax  
E-mail  
URL [http://www.hitachi-metals.co.jp/e/prod/prod03/p03\\_21.html](http://www.hitachi-metals.co.jp/e/prod/prod03/p03_21.html)

NEOMAX®

## Eco-components

EC-3-012

Semiconductor manufacturing devices

soft magnetic parts

### EMC Noise Reduction Products

While IT and electronics devices continue to become smaller and to achieve greater performance as well as increased functionality, EMC regulations are becoming even more stringent. In this situation, electronics manufacturers require materials and components with high EMC noise suppression capabilities. Hitachi Metals offers its FINEMET® series of nanocrystalline soft magnetic materials for high-performance EMC noise reduction. These products are lead-free and RoHS compliant.



#### Hitachi Metals, Ltd.

SEAVANS North Building, 1-2-1, Shibaura, Minato-ku, Tokyo 105-8614,  
Japan  
Tel 81-3-5765-4429 Fax  
E-mail  
URL <http://www.hitachi-metals.co.jp/e/prod/prod02/prod02.html>

EMC Noise Reduction Products

## Eco-components

EC-3-013

Semiconductor manufacturing devices

HAND flash memory

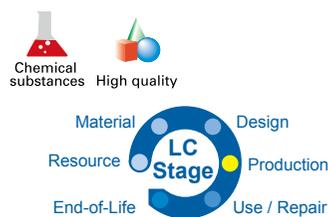
### High-capacity memory products developed by Toshiba to save energy

NAND flash memory was developed by use of Toshiba's original technology. The memory is energy-saving and hard to be broken, because it doesn't need machine drive when it reads and writes information. The SD memory card came to be used for the digital camera and recently for the video camera. USB flash memory is working in the field of PC, and micro SD memory card is working in the field of cellular phone. For the memory capacity, bulk storage of 500 times in comparison with that of 2000 fiscal year has been realized owing to the adoption of the technology of advanced process and multi-level cell technology. In addition, we warrant a high-speed transfer at the time of writing date by the speed class display (High-speed type, Class 4, Minimum 4MB/second)

- **Energy Saving:** At our state-of-the-art semiconductor plant, energy consumption is minimized by a novel air conditioning system and use of waste heat.
- **Resource Saving:** Use of materials per bit is cut by advanced process technology and multi-level cell technology.

#### TOSHIBA CORPORATION Semiconductor Company

1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan  
 Tel 81-3-3457-3375 Fax 81-3-5444-9342  
 E-mail  
 URL <http://www.semicon.toshiba.co.jp>



TransMemory™ 32GB,SD-HC032GT4(32GB), SD-HC016GT4(16GB),SD-MH008GA

## Eco-components

EC-3-014

Semiconductor manufacturing devices

films for a solar cells

### EVA film for a solar cell

The photovoltaic system represents a clean system on zero emission basis and produces no harmful by-products. Hence, it becomes more important from the viewpoint of the global environment preservation.

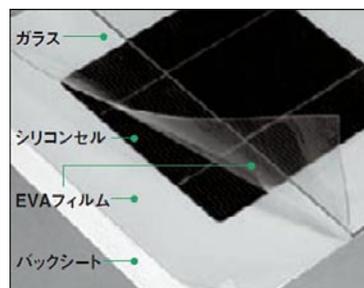
Bridgestone product "EVA-film (brand name: EVASKY)" is a vital component for the photovoltaic (solar) modules using silicon or other media.

Bridgestone EVASKY offers special advantages in a form of high efficiency, high productivity and excellent durability.



#### Bridgestone Corporation

10-1, Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
 Tel 81-3-5202-6907 Fax 81-3-5202-6842  
 E-mail  
 URL <http://www.bridgestone.co.jp/english/index.html>



EVA film for a solar cell

## Eco-components

EC-4-001

Machine parts

copper products

### High Performance Heat Transfer Tube for ECO CUTE

#### Usage

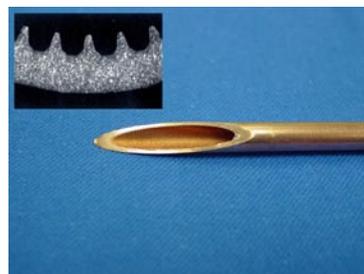
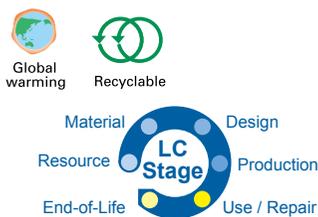
- (1) Heat exchanger that evaporate refrigerant in copper tube.
- (2) It is used for ECO CUTE(natural refrigerant heat pump water heater), the air conditioner, the package air conditioner, the chiller unit, and the refrigerator.

#### Feature of high performance heat transfer tube for ECO CUTE.

- (1) The flow of the refrigerant changes by spiral grooves, and the higher heat transfer rate than the inner surface area increasing rate is acquired.
- (2) The more increase of heat transfer rate than that of pressure loss is acquired in comparison with smooth tube.
- (3) Because the outside is smooth, it is bent as much as smooth tube.
- (4) The heat transfer ratio is the top of the industry in heat transfer tube for ECO CUTE. (at the time of July, 2006)
- (5) The copper material can be recycled by 100%.
- (6) The energy saving was achieved by improving the process of manufacturing.

#### Hitachi Cable, Ltd.

Hitaka Works, 5-1-1 Hitaka-cho, Hitachi-shi, Ibaraki-ken 319-1414, Japan  
 Tel 81-294-25-3835 Fax 81-294-43-3852  
 E-mail [taketani.noriaki@hitachi-cable.co.jp](mailto:taketani.noriaki@hitachi-cable.co.jp)  
 URL [//www.hitachi-cable.co.jp/](http://www.hitachi-cable.co.jp/)



Thermo-fin tube

## Eco-components

EC-4-002

Machine Parts

power transmissions, and parts

### Induction-Starting-Synchronous Gear Motor:IS Gear Motor

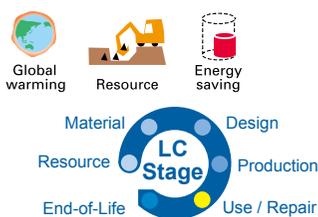
High efficiency was achieved by developing an Induction-Starting-Synchronous Gear Motor based on the design that considered the environment, also space-saving and a low noise were achieved by the closed structures (no cooling fan).

As a result, the motor efficiency was able to improve by about 10 points (from 75% to 84% in 50Hz, 77% to 86% in 60Hz), and to miniaturize capacity to 0.9 times compare with our Induction Gear Motor.

Gear motor in using stage has much effect on "Global Warming", and "IS gear motor" is the ecological products which can achieve energy conservation and the saving resource in this respect.

#### NISSEI CORPORATION

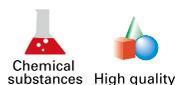
Headquarters/Main Plant 1-1 Inoue, Izumi-cho, Anjo-shi, Aichi 444-1297, Japan  
 Tel 81-566-92-1151 Fax  
 E-mail  
 URL <http://www.nissei-gtr.co.jp/>



IS Gear Motor G3LM-28-25-K075

### TMG1 Series Hydraulic Gear Pump

The TMG1 series is a hydraulic gear pump for forklift that was developed to reduce a noise and environmental load. In addition, we have tried to reduce lead included in the pump bearings and paint, and hexavalent chromium included in the joint components in order to comply with European directive on End-of Life Vehicle (ELV). We have started to produce ELV compliant products since March 2006.



#### Shimadzu Corporation

1, Nishinokyo-kuwabara-cho, Nakagyo-ku, Kyoto-shi 604-8511, Japan  
 Tel 81-75-823-1113 Fax 81-75-823-2062  
 E-mail  
 URL



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## Eco-components

EC-5-001

Automobile parts

wire cables

### Power cable Harness for hybrid vehicles

Usage:

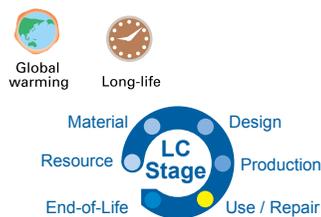
- (1) Cable harness that transmits a high current for such as hybrid vehicles and electric vehicles
- (2) At a high voltage, low noise use for automobiles and with a short installation time.

Feature of massive-capacity harnesses for hybrid:

- (1) Cable sizes and connection methods fitted to various types of vehicle system and space are provided.
- (2) A high grade product using Fluonlex for the insulator has greatly improved heat and oil resistance.

#### Hitachi Cable, Ltd.

Hitaka Works, 5-1-1 Hitaka-cho, Hitachi-shi, Ibaraki-ken 319-1414, Japan  
 Tel +81-294-25-3835 Fax +81-294-43-3852  
 E-mail [taketani.noriaki@hitachi-cable.co.jp](mailto:taketani.noriaki@hitachi-cable.co.jp)  
 URL <http://www.hitachi-cable.co.jp/>



Power cable Harness for hybrid vehicles

## Eco-components

EC-5-002

Automobile parts

tires for trucks and buses

### Tire for Super Single Drive Axle GREATEC

Bridgestone launched the GREATEC line in 2000 as ultralow aspect ratio tires to replace dual drive tires on trucks and buses with single tires.

GREATEC tires improve fuel economy because a GREATEC tire and rim weighs less than two conventional tires and rims.

In addition, this concept contributes to waste saving.



GREATEC 495/45R225 for Truck

#### Bridgestone Corporation

10-1, Kyobashi 1-chome Chuo-ku, Tokyo 104-8340, Japan  
 Tel 81-3-3563-6972 Fax 81-3-3563-1165  
 E-mail  
 URL <http://www.bridgestone.co.jp/english/index.html>

## Eco-components

EC-5-003

Automobile parts

tires for trucks and buses

### Fuel economy Truck and Bus Tires ECOPIA M891II

It is necessary to develop the new generation tire for fuel saving and preserving environment of the earth. Especially, it is useful for truck and bus which are gas-guzzling cars to reduce the rolling resistance of its tires.

Bridgestone corporation has developed the low rolling resistance truck and bus tires, and has already launched to the market, dubbed ECOPIA line. ECOPIA has superior low rolling resistance for a long haul users keeping basic tire performances.

ECOPIA M891II has launched to the market as successor of ECOPIA M881.



TBR ECOPIA M891II  
11R22.5 16PR 06.11

ECOPIA M891II 11R225 for Truck

#### Bridgestone Corporation

10-1, Kyobashi 1-chome Chuo-ku, Tokyo 104-8340, Japan  
Tel 81-3-3563-6972 Fax 81-3-3563-1165  
E-mail  
URL <http://www.bridgestone.co.jp/english/index.html>

## Eco-components

EC-5-004

Automobile parts

tires for small trucks

### DURAVIS R670 (Tire for van and light truck)

Tire (DURAVIS R670) for van and light truck that completes high economy and safety, applying the tire technology "AQ Donuts II". Wear Life performance is improved about 20% comparing to previous products, by uniformizing ground contact pressure.



LVR DURAVIS R670  
195/80R15 06.10.5T

DURAVIS R670

#### Bridgestone Corporation

10-1 Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
Tel 81-3-3563-6972 Fax 81-3-3563-1165  
E-mail  
URL <http://www.bridgestone.co.jp/english/index.html>

Available in :

## Eco-components

EC-5-005

Automobile parts

tires for small trucks

### ECOPIA M812 (All season tire for light truck)

All season tire for light truck that is balanced for the fuel efficiency, wear life and wet performance. Comparing M812 with current M810, Rolling Resistance is cut down 20%.



Global warming



Energy saving



LSR ECOPIA M812  
205/85R16 117/115L '05.06.5T

ECOPIA M812

#### Bridgestone Corporation

10-1 Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
Tel 81-3-3563-6972 Fax 81-3-3563-1165  
E-mail  
URL <http://www.bridgestone.co.jp/english/index.html>

## Eco-components

EC-5-006

Automobile parts

tires for passenger car

### SSR (Self Supporting Runflat Tire)

They can keep a tire functioning to drive a car safely at a specified speed for a specified distance even after a loss of tire pressure.

Resources can be saved by eliminating the need for a spare tire with a wheel, which are often discarded even in mint condition. (90% of spare tires have been discarded in mint condition.)



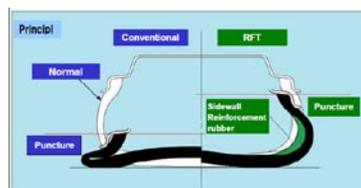
Waste



Resource



Energy saving



#### Bridgestone Corporation

10-1, Kyobashi 1-chome Chuo-ku, Tokyo, 104-8340, Japan  
Tel 81-3-3563-6972 Fax 81-3-3563-1165  
E-mail  
URL <http://www.bridgestone.co.jp/english/index.html>

SSR (Self Supporting Runflat Tire)

## Eco-components

EC-5-007

Automobile parts

tires for passenger car

### Eco-friendly tire "B'STYLE EX"

"B'STYLE EX" is a well balanced tire consists safety with ECO friendly performance.

B'STYLE EX possesses outstanding braking performance in wet conditions, and reduces its rolling resistance about 10%.

So B'STYLE EX gives you safety driving and contributes to save energy and reduce CO<sub>2</sub> emissions when running.



Global warming



Energy saving



PSR B'STYLE EX(BSTEFZ)  
215/45R17 87W '06-01-5T

Eco-friendly tire "B'STYLE EX"

#### Bridgestone Corporation

10-1 Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
Tel 81-3-3563-6972 Fax 81-3-3563-1165  
E-mail  
URL <http://www.bridgestone.co.jp/english/index.html>

## Eco-components

EC-5-008

Automobile parts

tires for passenger car

### Eco-friendly tire "SNEAKER"

"SNEAKER" gives you basic and economic performance as a standard tire.

In environmental side, SNEAKER reduces rolling resistance about 10% compared with previous model, so it contributes to save energy and reduce CO<sub>2</sub> emissions when running.



Global warming



Energy saving



PSR SNEAKER SNK2(SNK2FZ)  
215/45R17 087W '06-10-5T

Eco-friendly tire "SNEAKER SNK2"

#### Bridgestone Corporation

10-1 Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
Tel 81-3-3563-6972 Fax 81-3-3563-1165  
E-mail  
URL <http://www.bridgestone.co.jp/english/index.html>

## Eco-components

EC-5-009

Automobile parts

tires for passenger car

### Eco-friendly tire "Playz"

Playz provides you smoothy ride bey controlling car trembling.  
Playz also provides you silence in your car by 20% noise energy reduction.

In environmental side, Playz reduces rolling resistance about 10% compared with previous model,so it contributes to save energy and reduce CO<sub>2</sub> emissions when running.



Global warming



Energy saving



PSR PLAYZ PZ-1 (PZ01FZ)  
215/45R17 87W '04.GE.S1

Eco-friendly tire "Playz"

#### Bridgestone Corporation

10-1 Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
Tel 81-3-3563-6972 Fax 81-3-3563-1165  
E-mail  
URL <http://www.bridgestone.co.jp/english/index.html>

## Eco-components

EC-5-010

Automobile parts

tires for passenger car

### Eco-friendly tire "REGNO"

"REGNO" provide you first class ride comfort & superexcellent silence in your car.

REGNO focus on high frequency tire noise reduction by applying Bridgestone latest silence technology.

Also REGNO reduces rolling resistance about 16% compared with previous model ,so it contributes to save energy and reduce CO<sub>2</sub> emissions when running



Global warming



Energy saving



PSR REGNO GRV (GRVZ)  
215/45R17 87W '04.GE.S1



PSR REGNO GR-9000  
215/45R17 87W '04.GE.S1

#### Bridgestone Corporation

10-1 Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
Tel 81-3-3563-6972 Fax 81-3-3563-1165  
E-mail  
URL <http://www.bridgestone.co.jp/english/index.html>

① REGNO GRV ② REGNO GR-9000

## Eco-components

EC-5-011

Automobile parts

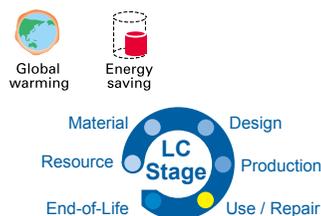
tires for passenger car

### Eco-friendly tire "ECOPIA EP100"

The "ECOPIA EP100" employs a new top rubber which applies Bridgestone's unique materials technology NanoPro-Tech to reduce rolling resistance.

Comparing the ECOPIA EP100 with the general commodity tire, rolling resistance is cut down 30%, so it contributes to save energy and reduce CO<sub>2</sub> emissions when running.

Also ECOPIA EP100 has outstanding braking performance in wet conditions in order to maintain safety.



ECOPIA EP100

ECOPIA EP100

#### Bridgestone Corporation

10-1, Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
Tel 81-3-3563-6972 Fax 81-3-3563-1165  
E-mail  
URL <http://www.bridgestone.co.jp/english/index.html>

Available in :

## Eco-components

EC-5-012

Automobile parts

rubber hoses

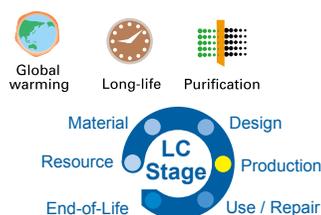
### Brake hoses

#### Usage

- (1) Brake hose for automobiles and motorcycles
- (2) To meet needs such as low volumetric expansion and high durability various hoses are assorted, and it is possible to correspond with various metal fittings.

#### Feature of brake hose

- (1) Long life is achieved by development of the material and review of the construction.
- (2) A new forged manufacturing method of metal fittings is developed, the material loss is lost, and energy conservation is achieved.
- (3) Adoption of new surface treatment that doesn't use hexavalent chromium.



#### Hitachi Cable, Ltd.

Hitaka Works, 5-1-1 Hitaka-cho, Hitachi-shi, Ibaraki-ken 319-1414, Japan  
Tel 81-294-25-3835 Fax 81-294-43-3852  
E-mail [taketani.noriaki@hitachi-cable.co.jp](mailto:taketani.noriaki@hitachi-cable.co.jp)  
URL <http://www.hitachi-cable.co.jp/>

Brake hoses

## Eco-components

EC-5-013

Automobile parts

constant velocity joints

### Constant velocity joints for drive shaft : Lightwe

Constant velocity joints are used to smoothly transmit engine torque to tires.

We developed E-series constant velocity joints to be highly efficient while smaller and lighter. Traditionally, six balls were used for the joints, but this system uses eight balls. these products provide high levels of functionality and environmental solutions by offering reduced weight, compactness, and high transmission efficiency. And also to reduce environmental impact, lead-free grease is used



Resource



#### NTN Corporation

1-3-17, Kyomachibori, Nishi-ku, Osaka-shi, Osaka 550-0003, Japan  
Tel 81-6-6443-5001 Fax  
E-mail  
URL <http://www.ntn.co.jp/>



Constant Velocity Joints, E-series

## Eco-components

EC-5-014

Automobile parts

parts of internal combustion engines for motor vehicles

### Ceramic Filter for Medium- and Heavy-Duty Diesel Commercial Vehicles

Composed of cordierite ceramics, our Diesel Particulate Filter reduces particulate matter (PM) of exhaust gas in medium-duty and heavy-duty diesel commercial vehicles. This environmentally conscious product functions effectively to help vehicles meet increasingly stringent exhaust gas regulations. Our Diesel Particulate Filter has been developed through Hitachi Metals' accumulated ceramics manufacturing technologies.

Our unique filter with an optimal pore structure, size and distribution demonstrates both low-pressure loss characteristics to contribute to lower fuel consumption and high PM trapping performance, enabling the capture of micro-particles as small as 10nm.



Chemical substances



Purification



#### Hitachi Metals, Ltd.

Hiramoto Building, 6-27-19, Haramachida, Machida-shi, Tokyo 194-0013, Japan  
Tel 81-42-732-5335 Fax  
E-mail  
URL [http://www.hitachi-metals.co.jp/e/prod/prod06/p06\\_09.html](http://www.hitachi-metals.co.jp/e/prod/prod06/p06_09.html)



## Eco-components

EC-5-015

Automobile parts

parts of internal combustion engines for motor vehicles

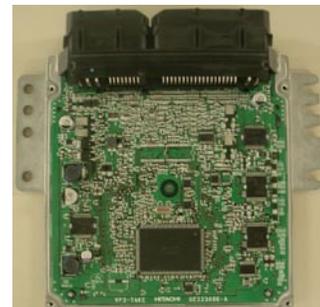
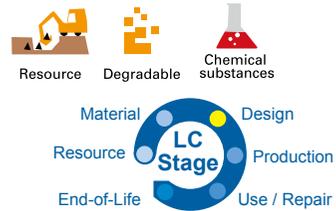
### Automobile Electronic Controller

#### Description of Products

High-reliability electronic control unit for the use of automobile engine control.

#### Concept of Development

- Compact, advanced, lightweight controller based on high-density packaging.
- Reduction of hazardous substances using lead-free soldering.



WaterProof type Engine Control Unit

#### Hitachi, Ltd., Automotive Systems

1-18-13, sotokanda, chiyoda-ku, Tokyo 101-8608, Japan  
 Tel 81-3-3258-1111 Fax  
 E-mail  
 URL <http://www.hitachi.co.jp/Div/apd/en/index.html>

## Eco-components

EC-5-016

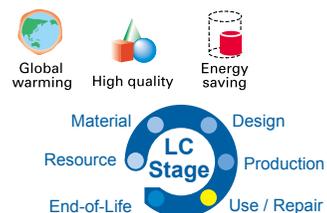
Automobile parts

parts of internal combustion engines for motor vehicles

### Water Cooled Alternator

An alternator that contributes to less emission and improvement in fuel consumption of the vehicle.

- A compact size alternator with high output (44% higher than conventional (air cooled) unit at a speed of engine idling) Higher power generation efficiency (Approximately 7% higher than the conventional unit)
- Low acoustic noise (20 dB at 10,000 r/min(alternator speed) lower than air cooled unit)
- Versatile potential for applying to various kinds of systems (Ex. Motorized 4WD system; one of Hitachi's other contribution for ecology)



LR945-901B

#### Hitachi, Ltd., Automotive Systems

1-18-13, sotokanda, chiyoda-ku, Tokyo 101-8608, Japan  
 Tel 81-3-3258-1111 Fax  
 E-mail  
 URL <http://www.hitachi.co.jp/Div/apd/en/index.html>

## Eco-components

EC-5-017

Automobile parts

parts of internal combustion engines for motor vehicles

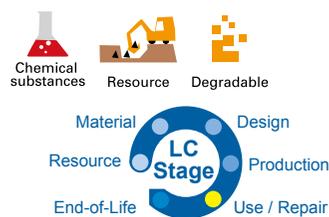
### Pulley Assy-VTC

#### Description of Products

VTC designed for continuously controlling the phase of the valve timing in the automobile engine depending on the load conditions, improving the torque/fuel efficiency and reducing the volume of discharged gas.

#### Development Concept

Lightweight, compact VTC that reduces the impact to the environment by restricting the use of hazardous substances.



Vane type VTC

#### Hitachi, Ltd., Automotive Systems

1-18-13, sotokanda, chiyoda-ku, Tokyo 101-8608, Japan  
Tel 81-3-3258-1111 Fax  
E-mail  
URL <http://www.hitachi.co.jp/Div/apd/en/index.html>

## Eco-components

EC-5-018

Automobile parts

parts of driving, transmission and operating units

### Energy Saving Electrical Power Steering ( Motor and Controller )

The electric power steering system assists a driver in steering only when he or she turns the steering wheel ; hence it serves to improve fuel economy by 3 to 5% compared with the conventional hydraulic system. It is also easy to install because of its modular design.

The compact yet high-power motor has realized system lineups for a full range from light motor vehicles up to oversized vehicles.

It has its original control algorithm that creates excellent steering feeling and stability.

-----<< Material >>-----

Compact size and High power Motor/Controller contributes to design of light weight vehicles.

-----<< Energy >>-----

Consumes energy only when steering wheel is operated and this improves a vehicle's fuel consumption efficiency.

-----<< Toxicity >>-----

Maintainance free

#### Mitsubishi Electric Corporation

2-7-3 Marunouchi Chiyoda-ku, Tokyo 100-8310, Japan  
Tel 81-3-3218-9024 Fax 81-3-3218-2465  
E-mail [eqd.eco@pj.MitsubishiElectric.co.jp](mailto:eqd.eco@pj.MitsubishiElectric.co.jp)  
URL <http://www.Global.MitsubishiElectric.com>



Motor for Electrical Power Steering

Available in : Worldwide

## Eco-components

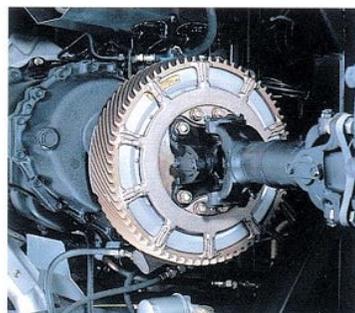
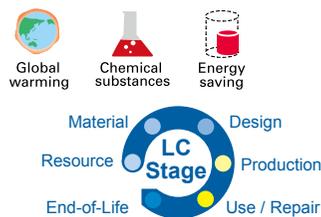
EC-5-019

Automobile parts

parts of driving, transmission and operating units

### Neotard Retarder

The Neotard Retarder was launched in 1990 as the world's first retarder to utilize permanent magnets. Since then, it has been used widely as an auxiliary brake on large trucks and buses. By reducing the load on a vehicle's main brake, this component not only improves safety and comfort, but also reduces the amount of hazardous materials generated, such as brake lining wear powder. In addition, because permanent magnets are used in the power source, the component requires only an extremely small amount of energy, thus making a large contribution to automotive society and to the preservation of the Earth's environment.



#### Sumitomo Metal Industries, Ltd.

1-8-11 Harumi, Cho-ku, Tokyo 104-6111, Japan  
Tel 81-3-4416-6183 Fax 81-3-4416-6793  
E-mail [chikyu-kan@sumitomometals.co.jp](mailto:chikyu-kan@sumitomometals.co.jp)  
URL <http://www.sumitomometals.co.jp/>

Available in : Worldwide

Retarder

## Eco-components

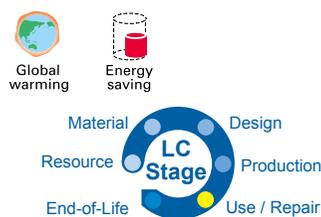
EC-5-020

Automobile parts

parts of chassis and bodies

### Plastic Back Door Module for Automotive

The plastic back door module for automobile has a benefit of high styling flexibility by integrating the components and achieved weight reduction compared to the conventional steel back door. We have developed and mass-produced the plastic back door modules first in Japan, by adopting the structure using the inner panel made of glass fiber reinforced thermoplastic having high strength and rigidity and the outer one made of thermoplastic having excellent appearance.



#### Hitachi Chemical Co., Ltd.

1150 Goshomiya, Chikusei-shi Ibaraki 308-8524, Japan  
Tel 81-296-20-2472 Fax 81-296-28-3279  
E-mail  
URL <http://www.hitachi-chem.co.jp>

Plastic Back Door Module for Automotive

## Eco-components

EC-5-021

Automobile parts

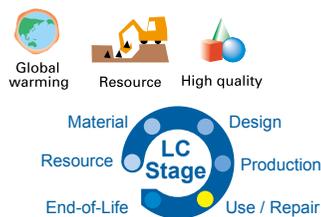
parts of driving, transmission and operating units

### Variable Displacement Pump

Variable Displacement Pump for Automobile Power Steering can save fuel by controlling displacement according to engine revolution speed.

Fuel consumption is reduced by about 1.5% by reducing driving torque of pump. Pump displacement is controlled suitably according to engine revolution speed.

Cooling piping is simplified and reliability is improved by decreasing oil temperature in the system.



VDP

#### Hitachi, Ltd., Automotive Systems

1-18-13, sotokanda, chiyoda-ku, Tokyo 101-8608, Japan  
Tel 81-3-3258-1111 Fax  
E-mail  
URL <http://www.hitachi.co.jp/Div/apd/en/index.html>

## Eco-components

EC-5-022

Automobile parts

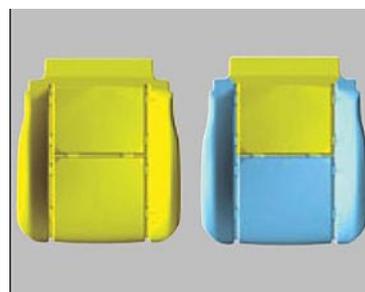
parts of motor vehicles, parts of motorcycles

### The same hardness and different density seat pad

We conventionally reduce the weight of the seat pad with the lightweight formulation, but this way sometimes caused ruining a comfortable ride and durability.

Bridgestone developed "same hardness and different density seat pad" that is reduced its weight, but not ruining a comfortable ride.

Not reduce the weight of the whole seat pad, use high-performance formulation for a part of the bottom that is important for a comfortable ride, use the lightweight formulation for other parts.



#### Bridgestone Corporation

10-1, Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
Tel 81-3-5202-6959 Fax 81-3-5202-8173  
E-mail  
URL <http://www.bridgestone.co.jp/english/index.html>

The same hardness and different density seat pad

**Titanium muffler**

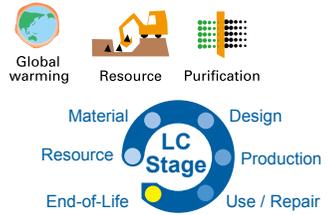
Nippon Steel's titanium materials have high corrosion resistance and are used in a lot of applications: industrial use in the field of electricity and chemicals, marine structures, civil applications including sports goods and office appliances, and the field of construction materials such as roofing and exterior walls which include those used in historical buildings, temples, and shrines (see the cover).

The titanium materials contribute to the extended service life of the finished products. For the purpose of reducing the weight of automobiles and motorcycles, mufflers made of Nippon Steel's titanium were employed in commercialized products first time in the industry in FY 2002.

Titanium is not only light in weight but also suitable for the thermal resistance required for the application temperature range of mufflers (approx. 600). Nippon Steel is going to further expand the application range of titanium by improving the spring characteristics and engine-sound muffling performance in addition to the lightness.

**Nippon Steel Corporation**

2-6-3, Otemachi, Chiyoda-ku, Tokyo , Japan  
 Tel 81-3-3275-5144 Fax 81-3-3275-5979  
 E-mail [kankyo@nsc.co.jp](mailto:kankyo@nsc.co.jp)  
 URL <http://www0.nec.co.jp/kankyou/index.html>



## Eco-components

EC-6-001

Packaging

aluminum beverage cans

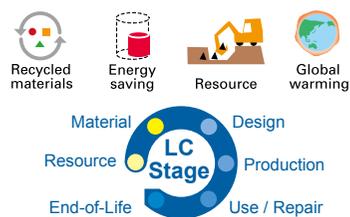
### Aluminium Beverage Cans made from Used Beverage Cans

The aluminium beverage can is made up of a can body and a can end. Universal Can Corporation (hereinafter called "UNICAN") has been in aluminium can business over 35 years. Our aluminium beverage cans include UBCs(used beverage cans) by weight over 50% of the total weight of aluminum can body. (Certified according to the Environmental Product Declaration "EPD" Environmental Labels Type III). Recycling aluminium from UBCs uses 97% less energy than making new aluminium from bauxite.

Usage of more UBCs and less new virgin metal will contribute to save bauxite as natural resources, energy and to prevent global warming. Mitsubishi Materials Group involving UNICAN has established a unique integrated recycling process which consists of retrieving UBCs, pouring recycled aluminium into long ingots and producing can body stocks. This process can help "the Can to Can cycle" function more effectively.

#### Universal Can Corporation

Sumitomofudosan-Korakuen Bldg. Koishikawa1-4-1, Bunkyo-ku, Tokyo 112-8525, Japan  
 Tel 81-3-3868-7471 Fax 81-3-3868-7467  
 E-mail  
 URL <http://www.unican.co.jp/>



## Eco-components

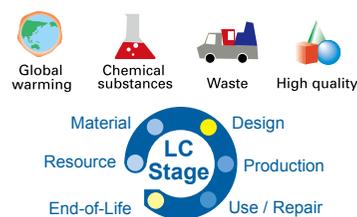
EC-6-002

Packaging

films

### Toppan GL-film, GX-film

Toppan GL and GX films refer to a range of transparent barrier films that do not use chlorine resin and were developed utilizing Toppan's vapor deposition coating technology. The films have been highly appraised particularly as a packaging material that reduces the burden on the environment and GL family currently boasts the top share in the Japanese market.



#### Toppan Printing Co., Ltd

1-5-1, Taito, Taito-ku, Tokyo 110-8560, Japan  
 Tel 81-3-3835-6311 Fax  
 E-mail [info.i@toppan.co.jp](mailto:info.i@toppan.co.jp)  
 URL <http://www.toppan.co.jp/>



Toppan GL-film

## Eco-components

EC-6-003

Packaging

beer

### Can beer using a light can

With the Asahi Breweries, Ltd, we are working on the lightweighting of the can to be used with beer. In 2006, we reduced the weight of aluminum to be used per 1 liter of beer, by 10.6% at the ratio of 1990. We are planning to lighten the can lid in future. For the construction of recycling society, we address the development of container and package which are friendly to the global environment, as well as the promotion of 3R (reduce, reuse, recycling).



#### Asahi Breweries, Ltd.

1-23-1 Azumabashi, Sumida-ku, Tokyo 130-8602, Japan  
 Tel 81-3-5608-5195 Fax 81-3-5608-5201  
 E-mail  
 URL <http://www.asahibeer.co.jp>



Asahi Super Dry 350ml, 500ml

## Eco-components

EC-6-004

Packaging

beverage

### The PET bottle based on the universal design for environment load reduction

- PET bottle with hollow surface and thermal adhesion label  
 Hollow bottle reduced the used quantity of resin by 21%. Its feature is that it is easy to hold and to pour. It is being used as the bottle of the tea drink of the famous brand.  
 The thermal adhesion label can be thermally stuck at only one spot after it was wounded up on the body of the bottle. It can reduce the used amount of label by 22% compared to the convention. The label is easy to be stripped, and it is expected to promote the classification and discharge of the bottle.
- PET bottle with an eco-grip cap  
 The eco-grip cap has the shape of wave which makes it easy to add the finger force. Its feature is that children, aged persons and women can open it easily. In addition, it can reduce the used amount of resin by about 10%, and it is therefore an environment-friendly cap. Asahi Soft Drinks Co., Ltd. contributes to the realization of rich, healthy eating habit of the consumers, through the company's various activities for the next generation to take over the earth in a more healthy state.



#### Asahi Soft Drinks Co., Ltd.

1-23-1 Azumabashi, Sumida-ku, Tokyo 130-8602, Japan  
 Tel 81-3-5608-7227 Fax 81-3-5608-7248  
 E-mail  
 URL <http://www.asahiinryo.co.jp>



1. Juroku-Cha PET 2. Collagen Water PET

## Eco-components

EC-6-005

Packaging

whisky

### Whisky bottle with a cap made from the barrel that finished its role

In the Nikka Whisky Distilling Co., Ltd., the barrel material of the whisky barrel which finished the use period is recycled for the cap of the whisky bottle; it is used in "NIKKA Taketsuru 12 Years Old Pure Malt". In addition to this, the company addresses the construction of the recycling society and the prevention of the global warming.



#### The Nikka Whisky Distilling Co., Ltd.

5-4-31, Minami-Aoyama, Minato-ku, Tokyo 107-8616, Japan  
 Tel 81-3-3498-0331 Fax 81-3-3498-1783  
 E-mail  
 URL <http://www.nikka.com>



NIKKA Taketsuru 12 Years Old Pure Malt

## Eco-components

EC-6-006

Packaging

beverage for baby & kids

### Paper container "Cartocan" using the forest thinning material

Wakodo Co., Ltd. has acquired the public mark of "the forest thinning material" for the paper container "Cartocan", because it uses domestic wood more than 30 % which contains thinning materials more than 10%. By positively using the domestic wood, the expense used to repair the forest is fed back to the mountain, and thereby the mountain has a sound forest. This activity coincides with the mind of the campaign which the Forest Agency is promoting: "National campaign to promote the making of beautiful woods"; "The campaign to use domestic woods". It helps the construction of recycling society and the absorption of CO<sub>2</sub> which is one of the causes of the global warming.



Beverage for baby & kids 125ml pack (8 items)

Genkicchi (Roasted barley Tea, Ion Drink Aqualyte Apple Flavor, Apple & vegetable, Fruit & Vegetable, Yogurt flavored Drink "Yokkuru" ), Non-caffeine blended tea "Juroku-Cha" for baby, Organic (Fruit & Vegetable +Carrot, Fruit & Vegetable +Tomato )

#### Wakodo Co., Ltd.

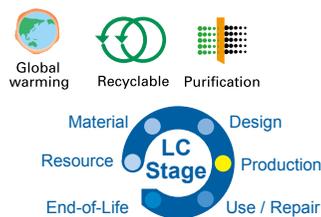
2-14-3 Kanda tsukasa-machi, Chiyoda-ku, Tokyo 101-0048, Japan  
 Tel 81-3-5296-6815 Fax 81-3-5296-6808  
 E-mail  
 URL <http://www.wakodo.co.jp>



Beverage for baby & kids 125ml pack(8 items)

**CARTOCAN, an environment-conscious paper container for soft drinks**

“CARTOCAN” is a paper container used for storing soft drink. The raw material comprises more than 30% domestic paper chips of Japan, and more than 15% forest-thinning wood which is obtained when the foresters take care of forest. The effective use of forest-thinning wood creates an income to the foresters and it contributes to the maintenance of the forest resource absorbing CO<sub>2</sub>. As the barrier film to protect the contents in the container, a ceramic deposited film (GL film) is used. Recycling of the containers is being promoted as that of non-metallic ones. Container sizes are 125ml, 195g, and 250g. “CARTOCAN” has won a Minister of Agriculture, Forestry and Fisheries Prize in the eco-products section of the eco-products grand prix in 2006.



**Conference for Spreading Paper Soft Drink Containers that Protect the Environment**

1-5-1 Taitou, Taitou-ku, Tokyo 110-8560, Japan  
 Tel Fax  
 E-mail [junji.nonoguchi@toppan.co.jp](mailto:junji.nonoguchi@toppan.co.jp)  
 URL <http://www.morikami.com>

1  
2  
3  
4  
5  
6  
7

## Eco-components

EC-7-001

Others

industrial plastic products

### Reverse osmosis membrane element for high quality

This Reverse osmosis membrane is used for producing ultrapure water from river water, or ground water for industrial use, safe drinking water from foul water and agricultural water. It eliminates impurities like salinity contained in water with very fine pores on the membrane surface. The "ESPA series" which is globally supplied under Hydranautics brand can create high quality pure water using around half of the energy required by current products. It was developed to produce ultrapure water vital to manufacture of semiconductors. The membrane has a skin layer of 0.6 micron-meter thick, with a well-developed three-dimensional pleated structure with a depth of 0.4 micron-meter, which increases double the specific surface area. Accordingly, this allows the permeate water to be produced with less pressure than was previously needed.

"ESPA4" has a highest productivity & rejection with next-generation performance.

#### Nitto Denko Corporation

HERBIS OSAKA, 2-5-25, Umeda, Kita-ku, Osaka 530-0001, Japan  
Tel 81-6-6452-2101 Fax 81-6-6452-2102  
E-mail [info@hydranautics.com](mailto:info@hydranautics.com)  
URL <http://www.nitto.com> or, <http://www.membranes.com>



Products/Model: ESPA4 from Hydranautics

## Eco-components

EC-7-002

Others

energy systems

### Thin-Film Photovoltaic Module

This module includes photovoltaic thin film silicon with a thickness of 0.002mm, which was born from a state-of-the-art nanotechnology. The module has a good design with a black outside surface where no wiring appears. Its superior thermal characteristic enables high performance of power generation in a region which has a hot climate. Since the thin-film silicon photovoltaic cell is manufactured by low-temperature processes under 200 degrees Celsius, it requires less energy in production than conventional wafer-type silicon photovoltaic cell.

#### SHARP CORPORATION

22-22, Nagaike-cho, Abeno-ku, Osaka 545-8522, Japan  
Tel 81-6-6625-0438 Fax 81-6-6625-0153  
E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
URL <http://www.sharp.co.jp/>



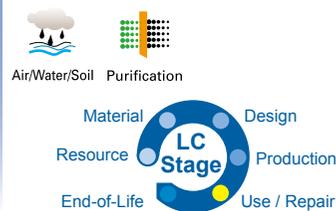
Thin Film Photovoltaic Module NA-901WQ

### Water Treatment Membranes & Systems

There are various types of water treatment methods and systems to adequately treat the water, and Toray specializes in water treatment by membrane separation technology. There are 4 types of membranes which can be selected by the size of the impurities which have to be separated from the raw water in order to produce the right water for the required purpose. The types of membranes are, from the smaller pore size sequentially: Reverse Osmosis (RO), Nanofiltration (NF), Ultrafiltration (UF) and Microfiltration (MF). The RO membrane has been used for the production of ultrapure water and seawater/brackish water desalination. Recently, it is used for the recycling and reuse of various wastewaters. The NF membrane has been used for the softening of water, removal of toxic and pesticide and the pretreatment for seawater desalination. The UF and MF membranes are used for recycling sewage water and producing drinking water from contaminated water.

**Toray Industries, Inc.**

2-2-1, Nihonbashi-Muromachi, Chuo-ku, Tokyo 103-8666, Japan  
 Tel 81-3-3245-5115 Fax 81-3-3245-5344  
 E-mail Product@nts.toray.co.jp  
 URL <http://www.toray.jp>



Reverse Osmosis Membrane

- 1
- 2
- 3
- 4
- 5
- 6
- 7



# Eco-products



- 1 Home electric appliances/Lighting**
- 2 Carriers/Automobiles**
- 3 OA/IT equipment**
- 4 OA/Furniture**
- 5 Apparel/Textiles**
- 6 Interior decoration/Exterior decoration or furniture**
- 7 Building and civil engineering**
- 8 Machines and equipment**
- 9 Others**

"Eco-products" are "environment-conscious products." In this section, they refer particularly to "finished products" to make a clear differentiation from "eco-materials" and "eco-components." Like eco-materials and eco-components, eco-products include "products that help clean and conserve the environment" and "products with high performance, yet creating a low environmental impact." The latter come in a wide variety. The first stage of eco-product development is the design of eco-products. This is called "eco-design." Eco-design proceeds in detail based on three product evaluation points: 1) effective and efficient use of materials, 2) energy saving, and 3) toxicity. Characteristics of eco-products, including the environmentally conscious aspect, are more or less determined during the design stage, and evaluation results are therefore crucial. These three product evaluation points differ from the six factors of eco-materials (see the title page "Eco-materials" in the *Eco-products Directory 2008*). This is because eco-products involve consumers more directly than eco-materials, and the environmental aspects of eco-products are appropriately evaluated from the consumer's viewpoint.

To help consumers understand eco-products better, environmental labels are widely used in Japan. It is hoped that an ideal cycle to support a low environmental-impact society will develop, where more consumers are encouraged by environmental labels to buy eco-products so that manufacturers make further efforts in eco-product development and the provision of environmental information in response to consumer demand.



## Eco-products

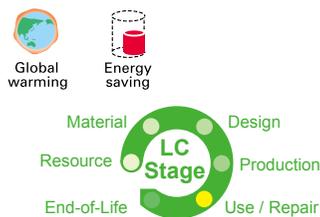
EP-1-001

Home electric appliances / Lightings

hot-water supply system

### Heat pump hot-water supply system

Daikin's "Eco-cute" is a heat pump type boiler using natural refrigerant (CO<sub>2</sub>). Achieving a high efficiency of heat transfer by cutting grooves to pipes of water heat exchanger, in addition to the existing dimple work, to improve the level of agitation. Furthermore, the hot water storage unit is covered by foamed material as its insulation depending on the shape of tanks, which enable to reduce heat radiation loss by approximately 15%.



EQ37FHV

#### DAIKIN INDUSTRIES, LTD.

UmedaCenter Bldg., 2-4-12, Nakazaki-Nishi, Kita-ku, Osaka-shi  
530-8323, Japan  
Tel 81-6-6374-9304 Fax 81-6-6373-4380  
E-mail [kankyo@daikin.co.jp](mailto:kankyo@daikin.co.jp)  
URL <http://www.daikin.co.jp>

Available in : Japan

## Eco-products

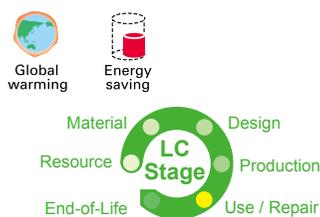
EP-1-002

Home electric appliances / Lightings

heating and cooking apparatus

### IH Cooking Heater

- Wide Top Plate-Induction Heater suitable for open kitchen space.
- High heating efficiency(90%) induction heater
- Energy saving by 0W idling power
- Reduction of 95% smoke and odor using palladium oxidation catalyst
- Silent design approx.35dB; the lowest noise in the home appliance sector (in the case of iron, stainless steel pan heating)



HT-B10TWFS(For Japanese Market)

#### Hitachi Appliances, Inc.

Hitachi Atago Bldg., 15-12, Nishi shimbashi 2-chome, Minato-ku, Tokyo  
105-8410, Japan  
Tel 81-3-3502-2111 Fax  
E-mail  
URL <http://www.hitachi-ap.co.jp/>

## Eco-products

EP-1-003

Home electric appliances / Lightings

power tools

### Cordless impact driver which realizes lightweight, high power and long-life

<Product Features>

- Adopting a cobalt Li-Ion battery cell and an individual cell monitor charging system can achieve the total amount of work performed until the end of battery pack's life to be approx. 3.5 times longer, comparing with the amount of our previous models.
- Brushless motor achieves the life of motor and switch to be about twice longer, comparing with our previous models.
- Max. stalling torque is 150Nm and normal bolt M16 can be dealt with.
- 3 stages of power mode can be switched to minimize the failure.



**Matsushita Electric Works, Ltd.**

1048, Kadoma, Kadoma, Osaka 571-8686, Japan  
 Tel 81-6-6908-1131 Fax  
 E-mail  
 URL <http://national.jp/powertool/>

Available in : Europe, North America, Australia, Japan

Cordless impact driver EZ7540

## Eco-products

EP-1-004

Home electric appliances / Lightings

electric rice cookers

### Steam IH Rice Cooker & Warmer

- The steam IH rice cooker & warmer increases taste of the rice thoroughly and considered environment.
- This product absorbs water sufficiently to increase sweetness taste by enzyme activity inundation technology to realize a delicious white rice cooking rice course with holding down the power consumption.
- The achievement of energy saving standard rate based on the energy saving law is 97% (SR-SW181).
- Standby power is 0.1W : 95% reduction from the 2000 years model SR-HG18A
- Average power consumption is 26Wh and time reservation power is 0.13W : industrial top-level



**Matsushita Electric Industrial Co., Ltd.**

5 Saho, Katou, Hyougo 673-1447, Japan  
 Tel 81-795-42-7000 Fax 81-795-42-7015  
 E-mail  
 URL

Available in : Japan

Steam IH Rice Cooker & Warmer SR-SW1series

## Eco-products

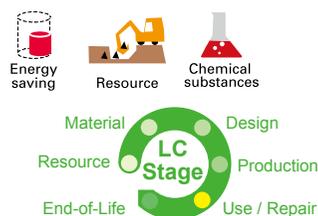
EP-1-005

Home electric appliances / Lightings

electric rice cookers

### Rice Cooker

- Reduced power consumption through the adoption of a high-heating-efficiency "solvent implanted iron inner pot," and adoption of a rice-cooking method that utilizes pressure and steam.
- Streamlined usage of reinforcing materials and reduction of the weight of the main unit by an optimal design based on strength analyses.
- RoHS Directive compliant



#### Hitachi Appliances, Inc

Hitachi Atago Bldg., 15-12, Nishi Shimbashi 2-chome, Minato-ku  
105-8410, Japan  
Tel 81-3-3502-2111 Fax  
E-mail  
URL <http://www.hitachi-ap.co.jp/>



RZ-GV100J (For Japanese Market)

## Eco-products

EP-1-006

Home electric appliances / Lightings

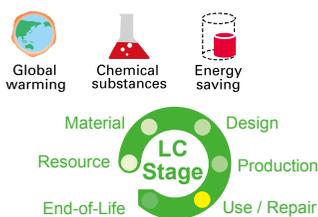
electric rice cookers

### IH rice-cooker using a world's first compact vacuum pump

This product adopted new vacuum technology to make the rice more delicious; it is usable for steaming rice, the rice which was kept warm and the rice which cooled down

It has adopted the world's first compact vacuum pump. The rice is soaked in a vacuum state and cooked under a pressure. Thereby, the taste of rice is drawn from the core.

- **Energy saving:** the degree of achievement is 80% for the energy saving standard based on the energy saving act.
- **Elimination of chemical substances:** stainless steel plates which does not need Pb-free solder and chrome plating.



#### TOSHIBA HOME TECHNOLOGY CORPORATION

2570-1, Urasuda, Kamo-shi, Niigata, 959-1393, Japan  
Tel 81-256-53-2545 Fax 81-256-53-2776  
E-mail  
URL



Available in : Japan

RC-10VSA

## Eco-products

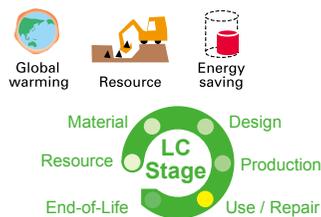
EP-1-007

Home electric appliances / Lightings

electronic ovens

### Energy-efficient steam microwave oven, NE-W300

- Global Warming Prevention and Energy Saving by Increased Energy Efficiency.
- This energy-efficient steam microwave oven achieves a highly effective reheat of food, without the need to cover "Wrap-less", by the use of a triple heating system: steam, double antenna microwave feeding and a 320C-deg high-power heater. The oven also includes a high-efficiency Inverter Power Supply.
- The oven also includes a high-efficiency Inverter Power Supply.



Steam microwave oven : NE-W300

#### Matsushita Electric Industrial Co., Ltd.

800 Tsutsui-cho, Yamato-Koriyama, Nara 639-1188, Japan  
 Tel 81-743-56-9830 Fax 81-743-56-4040  
 E-mail  
 URL

Available in : Japan

## Eco-products

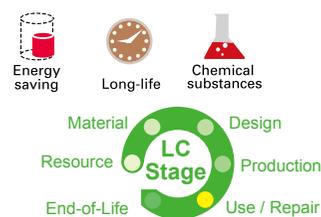
EP-1-008

Home electric appliances / Lightings

electronic ovens

### Microwave Oven

- Features such as "improved heating chamber airtightness", "improved heater insulation structure", "wide PAM power supply", and "standby power consumption OFF function" have improved power consumption.
- Easy to clean with the adoption of a removable, washable "table plate" and "leg covers"; and oil-resistant, easily-wipeable "far-infrared black coat" and "steam care function."
- Compliance with the RoHS Directive by alternating materials and parts with those having less environmental impacts



MRO-CV200(For Japanese Market)

#### Hitachi Appliances, Inc.

Hitachi Atago Bldg., 15-12, Nishi shimbashi 2-chome, Minato-ku, Tokyo  
 105-8410, Japan  
 Tel 81-3-3502-2111 Fax  
 E-mail  
 URL <http://www.hitachi-ap.co.jp/>

## Eco-products

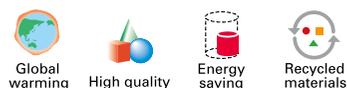
EP-1-009

Home electric appliances / Lightings

electric refrigerators

### French door-type refrigerator bearing plasma clust

Non-CFC (non-chlorofluorocarbon) refrigerator that incorporates eco-friendly materials and improved energy saving functions. The product includes energy saving technologies that we have developed such as a high efficiency compressor and meticulous inverter control and vacuum insulation panel. The product incorporates a flexible power saving mode including a power saving function during your absence. Uses non-CFC refrigerant R-600a. By using advanced technology, it achieves ODP (ozone-depleting potential) of zero and 1/400th of the value of conventional CFC substitutes' GWP (global warming potential). The product has been already compliant with EU RoHS directive and J-Moss by utilizing leadfree solder boards and abolishing bromine fire retardant. Further, the product incorporates recycled resin (PP, Hi-PS).



Products/Model: SJ-HD50P

#### SHARP CORPORATION

22-22, Nagaike-cho, Abeno-ku, Osaka 545-8522, Japan  
 Tel 81-6-6625-0438 Fax 81-6-6625-0153  
 E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
 URL <http://www.sharp.co.jp/>

## Eco-products

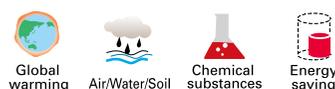
EP-1-010

Home electric appliances / Lightings

electric refrigerators

### REFRIGERATOR

- Advanced technologies such as PAM (Pulse Amplitude Modulation) controlled inverter compressor and high-performance VIP (vacuum heat insulation panel) have achieved 1/2 of the energy consumption, compared with the equivalent model released 10 years ago. (In Japan)
- R-600a refrigerant whose ODP (Ozone Depletion Potential) is zero and GWP (Global Warming Potential) is 3 is employed. Furthermore, Cyclopentane whose ODP is also zero and GWP is 3 is employed as the blowing agent of the urethane in order to preserve the ozone layer and avoid global warming.
- Compliance with RoHS Directive
- World's first vacuum compartment which can avoid oxidization of food and consequently can keep the food fresh.
- Big capacity of 601L(net) relative to small outer dimensions which also saves materials.
- Six doors for each compartment; this multi-door construction saves chill leak when opening and closing the doors.
- Door alarms and power-assisted open-closer for drawers reduce energy loss due to door opening for a long duration can be avoided.
- Automatic ice maker convenient for frequent ice users



R-X6000 (For Japanese Market)

#### Hitachi Appliances, Inc

Hitachi Atago Bldg., 15-12, Nishi Shimbashi 2-chome, Minato-ku  
 105-8410, Japan  
 Tel 81-3-3502-2111 Fax  
 E-mail  
 URL <http://www.hitachi-ap.co.jp/>

## Eco-products

EP-1-011

Home electric appliances / Lightings

electric refrigerators

### REFRIGERATOR

- Advanced technologies such as Hitachi original PAM (Pulse Amplitude Modulation) controlled inverter compressor and high-performance urethane can achieve low energy consumption.
- R-600a refrigerant whose ODP (Ozone Depletion Potential) is zero and GWP (Global Warming Potential) is 3 is employed. Furthermore, Cyclopentane whose ODP is also zero and GWP is 3 is employed as the blowing agent of the urethane in order to preserve the ozone layer and avoid global warming.
- RoHS Directive compliant
- Large capacity of 365L(net) relative to small outer dimensions saves materials.
- Four doors for each compartment; this multi-door construction saves chill leak when opening and closing the doors.
- Door alarm reduce loss of energy due to door opening for a long duration can be avoided.
- Automatic ice maker convenient for frequent ice users



R-SF37WVPH (For Hong Kong Market)

#### Hitachi Appliances, Inc

Hitachi Atago Bldg., 15-12, Nishi Shimbashi 2-chome, Minato-ku  
105-8410, Japan  
Tel 81-3-3502-2111 Fax  
E-mail  
URL <http://www.hitachi-ap.co.jp/>

## Eco-products

EP-1-012

Home electric appliances / Lightings

electric refrigerators

### REFRIGERATOR

- Advanced technologies such as high-performance compressor and high-performance urethane can achieve low energy consumption.
- R-600a refrigerant whose ODP (Ozone Depletion Potential) is zero and GWP (Global Warming Potential) is 3 is employed. Furthermore, Cyclopentane whose ODP is also zero and GWP is 3 is employed as the blowing agent of the urethane in order to preserve the ozone layer and avoid global warming.
- RoHS Directive compliant
- Large capacity of 305L(net) relative to small outer dimensions saves materials.
- Three doors for each compartment; this multi-door construction saves chill leak when opening and closing the doors.
- Door alarm reduce loss of energy due to door opening for a long duration can be avoided
- Automatic ice maker convenient for frequent ice users



R-S31SVG

#### Hitachi Appliances, Inc

Hitachi Atago Bldg., 15-12, Nishi Shimbashi 2-chome, Minato-ku  
105-8410, Japan  
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URL <http://www.hitachi-ap.co.jp/>

## Eco-products

EP-1-013

Home electric appliances / Lightings

electric refrigerators

### Energy saving refrigerator with a high-humidity original refrigeration compartment

The product is a large-size household refrigerator-freezer; it has two types of the rated capacities of 555L (GR-X56FT) and 525L (GR-X53FT). Above models adopted the new twin cooling system that is our original technology, and the improvement of the convenience and the decrease of the consumption electric power were realized installing the release type crisper at the high-humidity refrigeration compartment which is excellent merit.

- **Energy saving:** The energy saving that the efficiency was 125% ( X56FT) and 126%( X53FT) were attained due to the simplification of blow way and the amount reduction of heat leakage.
- **The prevention of the earth warming:** The adoption of non-fluorocarbon refrigerant (R600a)
- **An effective utilization of the resources:** Corrugated cardboard adopts used paper. The decrease of copper diameter of the evaporator and dew proof pipe
- **Recyclability:** Indication of the material name of the plastic resin.



GR-X56FT,GR-X53FT

#### TOSHIBA HOME APPLIANCES CORPORATION

991, Anada-Cho, Seto-Shi, Aichi 489-8610, Japan

Tel Fax

E-mail

URL [http://www.toshiba.co.jp/index\\_j3.htm](http://www.toshiba.co.jp/index_j3.htm), <http://www.toshiba.co.jp/tcm/>

Available in : Japan, developing China and Global

## Eco-products

EP-1-014

Home electric appliances / Lightings

kitchen ware

### Induction heating cooking heater for double all-metal wares

#### [Features]

- Double all-metal wares can be used thanks to induction heating evolution. The heating power is highly enhanced.
- A built-in optical sensor allows customers to operate with energy and resource saving.
- A new type high-performance wide-grill which has the automatic water sensor advanced more easy-to-operate.
- Easy-to-read indicators and easy-to-operate universal design are adopted.

#### [Environmental performance]

- High thermal efficiency of enamel-coated pans approx. 90%, aluminum pans approx. 76% in water-heating mode
- Minimal stand-by power consumption
- Non-use of lead, mercury, cadmium, hexavalent chromium, and specific bromine fire retardants (except lead of sealing agent for sheathed heater)



#### Matsushita Electric Industrial Co., Ltd.

1-5-1 Takatsukadai, Nishi-ku, Kobe, Hyogo 651-2271, Japan

Tel 81-78-992-9468 Fax

E-mail

URL

Available in : Japan

Induction Heating Cooking Heater KZ-VSW33D

## Eco-products

EP-1-015

Home electric appliances / Lightings

kitchen ware

### IH cooking heater: Superior functionality based on the "clean & silent" concept

This article is an IH cooking heater of 75cm top-surface width, which adopted the frameless top surface and the controller of new feeling. The technical base of this article is our company's original DSP inverter, and the concept for this article is "Clean & Silence". The function is satisfactory; a big grill, a rail-type smooth opening/closing grill, etc. are mounted.

- **Energy Saving:** Thermal efficiency 90% has been realized by the adoption of a high performance inverter and the improvement of heating coil. Furthermore, the power consumption zero has been realized for the stand-by state.

#### TOSHIBA HOME APPLIANCES CORPORATION

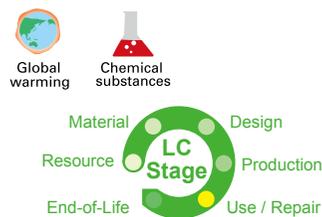
991, Anada-Cho, Seto-Shi, Aichi 489-8610, Japan

Tel Fax

E-mail

URL [http://www.toshiba.co.jp/index\\_j3.htm](http://www.toshiba.co.jp/index_j3.htm), <http://www.toshiba.co.jp/tcm/>

Available in : Japan



BHP-M47CS

## Eco-products

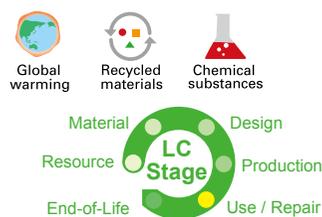
EP-1-016

Home electric appliances / Lightings

ventilators

### Ventilation Fan (Intake type pipe fan) FY-08PS8VD

This product is an intake type pipe fan used for home continuous ventilation. The capacitor motor of a newly developed d=48mm core diameter (the previous model was d=63mm core diameter motor) is adopted, and the highly effective fan optimized to an expansion of the style road in the main body and a low rotation and a high static pressure are also adopted, so that the max. energy-saving of 45% compared with the previous model of the company has been achieved. Moreover, resin (P.P.) used for the main body is a recycled material, and its internal wiring uses the electric wire without PVC.



#### Matsushita Ecology Systems Co., Ltd.

4017 Shimo-nakata, Takaki-cho, Kasugai, Aichi 486-8522, Japan

Tel 81-568-83-5163 Fax 81-568-84-5654

E-mail

URL <http://panasonic.co.jp/mesc/>

Available in : Asia, North America

Ventilation fan (Intake type pipe fan) FY-08PS8VD

## Eco-products

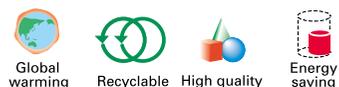
EP-1-017

Home electric appliances / Lightings

air conditioners

### Air Conditioner with energy-saving and air-cleaning

This air-conditioner has many functions such as automatic filter cleaning, air purifying by releasing the ion and changing an air flow direction for the best cooling and heating comfortableness. To maximize the energy efficiency, the high-performance "e-scroll compressor" and "hibrid heat exchanger" have been developed, and this product has already achieved the Japan's 2010 energy-saving target by 100%.



CS-X227A



#### Matsushita Electric Industrial Co.,Ltd. Air Conditioner Business Unit

2-3-1-1 Noji-higashi, Kusatsu, Shiga 525-8520, Japan  
Tel 81-77-567-9807 Fax 81-77-561-3208  
E-mail  
URL <http://national.jp/product/air/aircon>

Available in : Japan

Air Conditioner : CS-X227A

## Eco-products

EP-1-018

Home electric appliances / Lightings

air conditioners

### Air conditioner featuring ion air purification technology

Equipping 2 units of Plasmacluster generator makes it possible not only to inactivate airborne fungus and viruses but also to remove even stubborn cigarette odors, such as those inside the curtains. And "Long panel", "Smooth guides of vertical louver" and "power concentration guide" make this product to be one of the best\* energy saving scores in the industry (COP 4.50), energy saving ratio (141%) and the lowest stand-by power consumption (about 0.5kW).

The product is compliant with EU RoHS directive by utilizing lead-free solder boards and abolishing brominated flame retardant. (COP is acronym for The Coefficient of Performance.

It represents cooling and heating capacity (kW) per 1kW power consumption. The higher the COP value, the greater the energy efficiency.)

\*As of November 12, 2007; Sharp survey



#### SHARP CORPORATION

22-22, Nagaike-cho, Abeno-ku, Osaka-shi, Osaka 545-8522, Japan  
Tel 81-6-6625-0438 Fax 81-6-6625-0153  
E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
URL <http://www.sharp.co.jp>

Air conditioner AY-W50SX

## Eco-products

EP-1-019

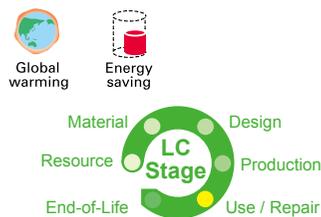
Home electric appliances / Lightings

air conditioners

### High performance, energy-saving air conditioner

#### High energy savings

Daikin has further improved the energy efficiency and realized substantial energy savings compared to conventional models by achieving a high COP of over 4 for both cooling and heating operations.



#### DAIKIN INDUSTRIES, LTD.

Umeda Center Bldg., 2-4-12, Nakazaki-Nishi, Kita-ku, Osaka-shi,  
Osaka 530-8323, Japan  
Tel 81-6-6374-9304 Fax 81-6-6373-4380  
E-mail [kankyo@daikin.co.jp](mailto:kankyo@daikin.co.jp)  
URL <http://www.daikin.co.jp>



FTXG-E Series

## Eco-products

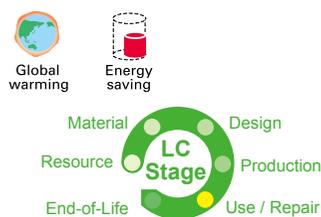
EP-1-020

Home electric appliances / Lightings

air conditioners

### High performance, energy-saving air conditioner

Daikin's "Ururu Sarara R series" of air conditioners offers "Ururu Humidifying" function which air-conditioning as well as humidifying without adding water (extract moisture from outside air). It is also installed a new function "Comfort Eco Operation" which automatically controls temperature, humidity, airflow that affects feeling temperature. "Ururu Sarara R series" can realize both comfort and energy saving. By utilising "Comfort Eco Operation", you can reduce energy consumption by approximately 20% a year.



#### DAIKIN INDUSTRIES, LTD.

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E-mail [kankyo@daikin.co.jp](mailto:kankyo@daikin.co.jp)  
URL <http://www.daikin.co.jp>



FTK(X)S-D Series

Available in : Japan

## Eco-products

EP-1-021

Home electric appliances / Lightings

air conditioners

### Room Air Conditioner

Inverter technology enables a room temperature to reach the required level more rapidly and up to 30% more efficiently than conventional constant speed systems. Inverter technology also eliminates the incessant use of the stop-start mechanism often required to maintain consistent levels of temperature. Rather than starting and stopping the motor when the room temperature is reached, Hitachi inverters adjust (increase/decrease) the speed of the compressor in an energy saving mode in order to maintain the desired temperature.



#### Hitachi Appliances, Inc.

Hitachi Atago Bldg., 15-12, Nishi Shimbashi 2-chome, Minato-ku  
105-8410, Japan  
Tel 81-3-3502-2111 Fax  
E-mail  
URL <http://www.hitachi-ap.co.jp/>



RAS-X13CX

## Eco-products

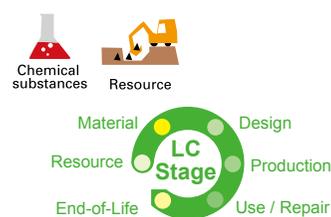
EP-1-022

Home electric appliances / Lightings

air conditioners

### Hybrid Dehumidifier Consisting of Adsorption and Refrigeration Cycles

As a new domestic dehumidifier, a hybrid dehumidification systems has been developed. The hybrid dehumidification systems consists of a refrigeration cycles and a desiccant to solve the problems of each dehumidification systems, which are the temperature dependency of the dehumidification performance of the refrigeration cycle and the high energy consumption of the desiccant.



#### Matsushita Ecology Systems Co.,Ltd.

4017 Shimo-nakata, Takaki-cho, Kasugai, Aichi 486-8522, Japan  
Tel 81-568-83-8159 Fax 81-568-83-8198  
E-mail  
URL <http://panasonic.co.jp/mesc/>



Available in : Asia, North America

Hybrid Dehumidifier Consisting of Adsorption and Refrigeration Cycles F-YHD100

## Eco-products

EP-1-023

Home electric appliances / Lightings

air conditioners

### Energy-saving air conditioner for residential use

"Daiseikai" BDR air-conditioner is designed under the concept of "kind to user's budget and to the earth". It provides high performance and comfort circumstance at various living scenes at home. "Daiseikai" is a 21st century environment creation air-conditioner with highest energy efficiency in the air-conditioning industry.

- Air-purifier provides clean air automatically using dust sensor.
- Cleaning mechanism cleans inside of the indoor unit automatically.
- Energy saving is achieved by spot airflow which provides air only to the recorded area by customer.
- **Energy Saving:** 25% reduction in power consumption is achieved by development of high performance compressor, inverter, and the improvement of airflow performance according to the new Plasma ion charger air-purifier. Automatic cleaning function maintains energy saving and powerful operation.
- **Resource Saving:** Reduce magnet to be used for compressors by 82%.



#### Toshiba Carrier Corporation

Shinagawa Center Building, 23-17 Takanawa 3-chome, Minato-ku, Tokyo 108-0074, Japan

Tel Fax

E-mail

URL <http://www.toshiba-carrier.co.jp/>

RAS-402BDR

## Eco-products

EP-1-024

Home electric appliances / Lightings

electric washing machines

### Full Auto Washer Dryer with Heat Pump System

<Heat pump dry system>

The latest heat pump technology achieves one third of power consumption (electricity cost), a half of water consumption, and a half of time while washing and drying 6kg of load in comparison with the previous model; NA-V81. 65C-degree dehumidified air dries even delicate cloths gently.

<Innovative 'Dancing wash technology'>

In addition to the traditional tumble washing, the brand new 'Dancing wash technology' makes your clothes very clean. This new function reverses the rotation quickly to squeeze the dirt out from cloths.

<'Mist refresh' function>

The mist generated by supersonic wave moistens the clothes to remove odor and to stretch the wrinkles. The mist is so fine that the water molecule can penetrate deeply into the fiber. The laundry will be refreshed after drying.



#### Matsushita Electric Industrial Co., Ltd.

1-2 Kamisu-cho, Toyonaka, Osaka 561-0823, Japan

Tel 81-6-6331-6826 Fax 81-6-6334-0567

E-mail

URL

Available in : Japan

Full Auto Washer Dryer : NA-VR2200

## Eco-products

EP-1-025

Home electric appliances / Lightings

electric washing machines

### Fully Automatic Washer/Dryer Combo with Ag+ Ion Coating

#### <Energy and water saving>

A hole-less stainless steel tub enables energy saving operation from washing to drying. Since water does not pour into the outside of the tub due to its hole-free design, the amount of water and detergent used is drastically reduced. The hole-less stainless steel tub keeps heat inside and the temperature of inner tub rise at shorter time. Then it enables energy saving. Standby energy is 0W.

#### <Recycling>

We have developed our own technology for the recycling of plastic. Sharp is the first company in the industry developed the technology of assessing the degraded state of plastic in a simplified way along with characteristic improvement treatment and quality control technology. This allows collected polypropylene to be repeatedly recycled as material for new products.

#### <Green material>

Main board uses lead-free solder.



Fully Automatic Washer/Dryer Combo ES-TG81G

#### SHARP CORPORATION

22-22, Nagaike-cho, Abeno-ku, Osaka-shi, Osaka 545-8522, Japan  
 Tel 81-6-6625-0438 Fax 81-6-662-0153  
 E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
 URL <http://www.sharp.co.jp>

## Eco-products

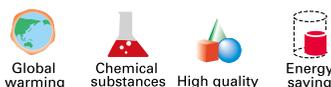
EP-1-026

Home electric appliances / Lightings

electric washing machines

### Drum type Auto Washing Machine

- With a pump for transferring water from bathtub, this model's water consumption(Fuzzy course) is only 20L/cycle(7kg load).
- Thanks to the latest technology , this model has achieved 40% less energy consumption, compared with the equivalent model released 5 years ago. (In Japan)
- This model fully complies with RoHS regulations , thus such hazardous substances as lead ,mercury, cadmium, etc, are not contained.
- This washing machine has a large capacity of 9kg(net) relative to its small outer dimensions. This feature has contributed to saving materials.



BD-V2

#### Hitachi Appliances,Inc

Hitachi Atago Bldg., 15-12,Nishi Shimbashi 2-chome, Minato-ku  
 105-8410, Japan  
 Tel 81-3-3502-2111 Fax  
 E-mail  
 URL <http://www.hitachi-ap.co.jp/>

## Eco-products

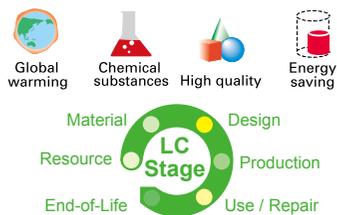
EP-1-027

Home electric appliances / Lightings

electric washing machines

### Auto Washing Machine

- Water Circulation System of this model improved 40% of the water consumption compared with the equivalent model released 9 years ago. (In Japan)
- Drying system without heater can significantly save energy.



#### Hitachi Appliances, Inc

Hitachi Atago Bldg., 15-12, Nishi Shimbashi 2-chome, Minato-ku  
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E-mail  
URL <http://www.hitachi-ap.co.jp/>



BW-105H

## Eco-products

EP-1-028

Home electric appliances / Lightings

electric cleaning machine

### Cyclone Cleaner with Tissue Paper Block System SC-XW66J Series

- 1) Easy disposal (care) of garbage by employing tissue paper in front of a filter (SANYO's original method) and reduction of paper consumption;  
7-year paper consumption reduced 686g, or 65%, as compared to the conventional paper carton type cleaner;
- 2) Wet-cleaning of a filter unnecessary (Reduced water usage: 420 l/year)



#### SANYO Electric Co., Ltd.

1-1, Seta, 1-chome, Otsu City, Shiga 520-2134, Japan  
Tel 81-77-543-5671 Fax 81-77-543-5618  
E-mail [hira074299@sanyo.co.jp](mailto:hira074299@sanyo.co.jp)  
URL <http://www.sanyo.co.jp/>



SC-XW66J Series

## Eco-products

EP-1-029

Home electric appliances / Lightings

electric cleaning machine

### Vacuum Cleaner

- Hitachi's dust compression technology compresses the dust volume approximately 1/2 and minimizes suction power loss.
- No paper bags are needed
- Full compliance with RoHS regulations; the six hazardous substances are not contained.



#### Hitachi Appliances, Inc

Hitachi Atago Bldg., 15-12, Nishi Shimbashi 2-chome, Minato-ku  
105-8410, Japan  
Tel 81-3-3502-2111 Fax  
E-mail  
URL <http://www.hitachi-ap.co.jp/>



CV-SH20V

## Eco-products

EP-1-030

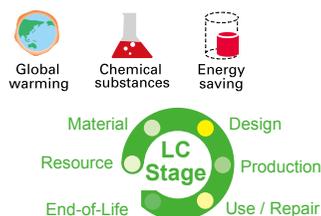
Home electric appliances / Lightings

electric cleaning machine

### Cleaner with two automatic washing functions by air and ozone

This goods is equipped with the "Typhoon robo system XP" which washes the inside of the cleaner by the air power automatically, so the care of filter is unnecessary for ten years. In addition, the "plasma ozone unit" was mounted for the first time in the industry. The unit works to deodorize and sterilize the inside of the cleaner by the action of ozone.

- **Energy Saving:** Power consumption at the "eco-mode" is 20% less than that of conventional machine.
- **Resource Saving:** Paper bag became unnecessary by the adoption of cyclone system.



#### TOSHIBA HOME APPLIANCES CORPORATION

43 Horiyamashita, Hadano-shi, Kanagawa-ken 259-1393, Japan  
Tel Fax  
E-mail  
URL [http://www.toshiba.co.jp/index\\_j3.htm](http://www.toshiba.co.jp/index_j3.htm), <http://www.toshiba.co.jp/tcm/>



VC-105XP

Available in : Japan

## Eco-products

EP-1-031

Home electric appliances / Lightings

electric hot water cleaning seats for toilet

### Energy-efficient personal hygiene system

This product realized the highest level of energy efficiency in domestic market.

- Instant heating of washing water
- Seat made by newly-developed quick heating system for a toilet seat



#### Matsushita Electric Industrial Co., Ltd. Hygiene Toilet Seat & Heating Equipment Business Unit

800 Tsutsui-cho, Yamato-koriyama, Nara 639-1188, Japan  
Tel 81-743-56-9877 Fax 81-743-56-9934  
E-mail  
URL <http://national.jp/product/sumai/toilet/>



Available in : Japan

Personal Hygiene System : DL-GZ70,50,40,20

## Eco-products

EP-1-032

Home electric appliances / Lightings

washer dryer

### Drum-type Automatic Washer and Dryer, AWD-AQ 2000, with water-saving and disinfecting functions

"A challenge to global environment problem" is our keyword. From a viewpoint of making good use of water of the limited resource, this machine was developed with the switch of idea, namely from the conventional idea "reduce the using water" to a new idea "reuse the used water" or "not use water". The machine has two great functions. "Air Wash" works to break the source of various germs and smell by ozone, and thereby we can decompose even smear without using water. "Aqua-loop" works to sterilize rinsing or bath water by ozone and reuse in next washing.

◆Main features of this machine.

1. "Air Wash" –Germ elimination (\*), deodorization, and fouling decomposition by the air (ozone).
2. "Aqua-loop"--Reuse of the used bath water after clarification and disinfection.
3. "Guidance Display" to teach what to do next with large characters, and the universal design including a "Kitchen Work-style" position to reduce the user's physical load.

\* The commissioned organization: Japan Food Research Laboratories Foundation, Testing method: Agar-plate incubation. Sterilization: Ozone.



#### SANYO Electric Co., Ltd

1-1, Seta, 1-chome, Otsu City, Shiga 520-2134, Japan  
Tel 81-77-543-5671 Fax 81-77-543-5618  
E-mail [hira074299@sanyo.co.jp](mailto:hira074299@sanyo.co.jp)  
URL <http://www.sanyo.co.jp/>



AWD-AQ2000

## Eco-products

EP-1-033

Home electric appliances / Lightings

washer dryer

### World's first air conditioner mounted drum-type washing dryer, TW-3000VE

This product is equipped with a new dehydration control system with a pre-heater to remove the implication moisture before drying to a minimum and with a newly developed heat pump system that optimized the efficiency of the clothing drying. Thereby, the power consumption was reduced by about 60%. In addition, the quantity of water at the time of the use was reduced by replacing a conventional heater with the heat pump drying method. Furthermore, the amount of CO<sub>2</sub> discharge at a use stage which occupies 90% of the whole life cycle was improved and the reduction of about 68% has been achieved.

- **Energy Saving:** As described above, the power consumption was reduced by 60% in comparison with that of conventional machine.
- **Resource Saving:** By the heat pump drying method, the consumption of water was saved by 62% compared to the heater type of the conventional machine. Weight of the counter weight (steel plate) was reduced. Regenerative plastic was used for the base plate (4kg). A compact SDD motor of higher power than DD motor was adopted.
- **Recyclability:** For the resin more than 25g, the raw materials were expressed.



TW-3000VE

#### TOSHIBA HOME APPLIANCES CORPORATION

991, Anada-Cho, Seto-Shi, Aichi 489-8610, Japan

Tel Fax

E-mail

URL [http://www.toshiba.co.jp/index\\_j3.htm](http://www.toshiba.co.jp/index_j3.htm), <http://www.toshiba.co.jp/tcm/>

Available in : Japan

## Eco-products

EP-1-034

Home electric appliances / Lightings

sonic power toothbrush

### Super Slim Sonic Power Toothbrush

<Product Features>

1. Smallest and Lightest in the industry. Slim body allows "Pen Grip" brushing as a dental hygienist recommends.
2. Very quiet when brushing due to the new sonic structure.
3. Full washable body to keep it clean always.

<Environmental Considerations>

Combination of a super miniaturized linear motor and an AAA lithium ionic rechargeable battery makes a compact size and light weight power toothbrush. (55% lighter and 25% slimmer body than previous model) As a result, its light and compact body is contributing to CO<sub>2</sub> reduction.



Sonic Power Toothbrush : EW1163

#### Matsushita Electric Works, Ltd.

1048 Kadoma, Kadoma, Osaka 571-8686, Japan

Tel 81-6-6908-1131 Fax

E-mail

URL [http://national.jp/product/beauty/dental\\_care/](http://national.jp/product/beauty/dental_care/)

Available in : Japan

## Eco-products

EP-1-035

Home electric appliances / Lightings

massage chair

### Massage chair for the entire body with low standby power consumption

#### [Product Features]

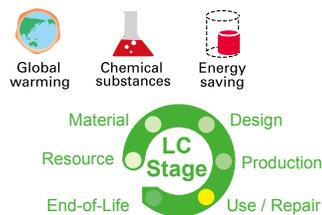
- Newly developed "Kneading Massage Function" is effective against stiff shoulder.
- Three-dimensional 1117 massage patterns are available. Four "auto full-body courses" are also available for a total massage.
- The massage area of the Industry maximum has increased more from our conventional model "EP2110" by the "massage deployment out of shoulder".

#### [Environmental Features]

- The power switch (relay) cuts the power supply to the motor during standby mode, reducing the standby power consumption by approx. 94% from that of our conventional model 'EP2110'(5W → 0.3W).
- All components used for this product (including electronic components and their electrodes, soldered joints, and harnesses) are free from lead.

#### Matsushita Electric Works, Ltd.

1048 Kadoma, Kadoma, Osaka 571-8686, Japan  
 Tel 81-6-6908-1131 Fax  
 E-mail  
 URL [http://national.jp/product/health/massage\\_chair/](http://national.jp/product/health/massage_chair/)



Massage Chair EP30002

Available in : Asia, Europe, North America

## Eco-products

EP-1-036

Home electric appliances / Lightings

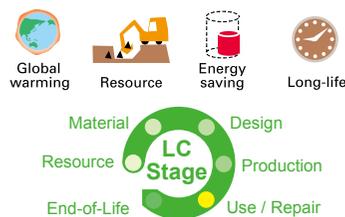
fluorescent lamps

### Screw-in fluorescent lamp "spiraLUPICA mini"

"spiraLUPICA" mini is the compact size screw base fluorescent lamp. Small spiral shaped inner bulb and compact inverter achieve compact size. Consumption power is from quarter to one fifth compared to incandescent lamp(40W, 60W). Therefore it enables to save energy and reduce greenhouse gas. Also the lifetime of "spiraLUPICA mini" is 6 times longer than that of incandescent lamp. Maintenance cost decreases and it leads to efficient use of resources. Run-up speed is fast. Therefore it's bright even right after switching on a light. ON-OFF cycle is up to 20,000 times. (Cycle is 10 seconds on and 170 seconds off.) This new product is also suitable for the places where you frequently repeat switching on and off.

#### MITSUBISHI ELECTRIC OSRAM Ltd.

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 Tel 81-45-323-5187 Fax 81-45-323-5156  
 E-mail  
 URL <http://www.mol-oml.co.jp>



spiraLUPICA mini

## Eco-products

EP-1-037

Home electric appliances / Lightings

fluorescent lamps

### Long life fluorescent lamp "Lupica Power Platinum"

Lupica Power Platinum is long life circular and straight fluorescent lamp. The lifetime: Circular types and Straight 20W type is 13000 hours, straight 40W type is 15000 hours. Circular type lifetime is 2.2 times, Straight type is 1.25 to 1.5 times longer compared with conventional products. They enable to reduce maintenance cost and lead to efficient use of resources. Also lumen maintenance factor is improved to about 80% and they keep original brightness at the end of lifetime. Original lighting color is lined up and you can create favorite atmosphere in your own room by selecting our various original lighting colors.



#### MITSUBISHI ELECTRIC OSRAM Ltd.

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E-mail  
URL <http://www.mol-oml.co.jp>



Lupica Power Platinum circular type

## Eco-products

EP-1-038

Home electric appliances / Lightings

fluorescent lamps

### Self-ballasted compact fluorescent lamp with 1/4 power consumption

Self-ballasted compact fluorescent lamp "Neo-Ball Z REAL" is the substitute of an incandescent 100W lamp. It is an energy saving lamp having equal brightness with about 1/4 power consumption.

- **Energy Saving:** Power consumption has been reduced by 16% compared to that of the conventional product (EFA25EL).
- **Resource Saving:** In comparison with 120g of the conventional product (EFA25EL), the weight of this product is 110g; the resources of about 10% have been saved.
- **Elimination of harmful chemical substances:** Lead-free glass and solder are adopted.



#### TOSHIBA LIGHTING & TECHNOLOGY CORPORATION

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URL <http://www.tlt.co.jp/>



EFA25EL/21-R and two other models

## Eco-products

EP-1-039

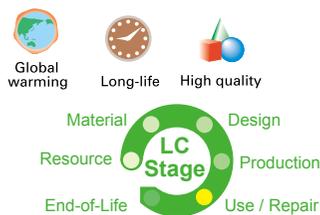
Home electric appliances / Lightings

fluorescent lamps

### Bright fluorescent lamp with a lifetime of 15,000 hours

"Neo-slim Z PRIDE" is the fluorescent lamp for exclusive use of high-frequency lighting. It has the life of 15,000 hours, which is 1.3 times longer than that of the previous product. Also the brightness improved about 5% in comparison with that of the previous product of "Neo-slim Z series, (in the high output lighting condition).

- **Energy Saving:** The brightness is 5% up of the conventional product and the energy saving is about 5% if compared at the same brightness.
- **Resource Saving:** The frequency of lamp exchange decreases owing to the extension of lamp life. Quantity of the emitter material (electron emissive) of the electrode has been optimized. Because of having adopted a new protective film, a long life of 15,000 hours has been realized.



#### TOSHIBA LIGHTING & TECHNOLOGY CORPORATION

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 E-mail takeo.yasuda@tlt.co.jp  
 URL <http://www.tlt.co.jp/>



FHC27ED-PD

## Eco-products

EP-1-040

Home electric appliances / Lightings

fluorescent lamps

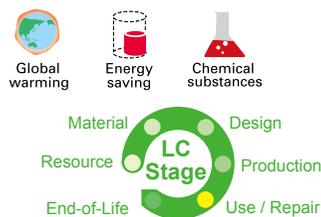
### Lighting fixture with sensor function : "Omakase-SelCon"

#### <Product Features>

- Equipped with brightness sensor and timer built-in block, achieving great energy saving by using daylight and initial illuminance correction function.

#### [Environmental Features]

- About 55% energy saving, compared to the conventional ballast type fixture under same illuminance. (Number of fixture: decrease 40%, energy saving by illuminance correction: about 15%, Energy saving by using outside light: about 40%)
- About 48% energy saving compared to our output power fixed type fixture with high frequency lamps. (Number of fixture: same, Energy Saving by illuminance correction: about 15%, Energy saving by using outside light: about 40%)
- Vinyl chloride free with using eco-electric wire - Reducing packing materials by using see-through package in some models.



#### Matsushita Electric Works, Ltd.

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 Tel 81-6-6908-1131 Fax  
 E-mail  
 URL <http://biz.national.jp/Ebox/shisetsu/index.html>



Available in : Japan

"Omakase-SelCon" : FSS42560A PX9

## Eco-products

EP-1-041

Home electric appliances / Lightings

fluorescent lamps

### Environmentally conscious Lighting Fixture "W-Eco"

New generation's lighting fixture for industrial use with "energy saving" and "resource saving"

The industry's first high output and long-life G-Hf fluorescent lamp and the special inverter (with initial illuminance correction function) realized the same brightness with two lamps even by one lamp.

- Equipped with high power inverter with initial illuminance correction function.
- Newly developed "G-Hf fluorescent lamp" enable longer life time (1.5 times of FLR40W type) and higher output power lamp (2.1 times of FLR40W type).
- One-lamp "W-Eco" fixture realized the same brightness with two-lamp (FLR40W) fixture. About 35% saving energy and about 66% reduction of lamp exchange frequency compared to FLR40Wx2 fixture. (scrap saving and maintenance saving).
- The half size and weight of fixture from old products saves resource. Using eco-electric wire, chrome-free steel, and low VOC painting (organic solvent free).

#### Matsushita Electric Works, Ltd.

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 E-mail  
 URL <http://biz.national.jp/Ebox/shisetsu/index.html>



Available in : Japan

Office Lighting Fixture "W Eco" FX619MA WF9 Maruti Comfort louver type

## Eco-products

EP-1-042

Home electric appliances / Lightings

fluorescent lamps

### Compact spiral down light with silver deposited reflector, SPILE series

<Compact and high power down light featured with high efficiency and long life>

This down light can supply the same brightness with 100W type incandescent lamp (size:d=125mm) by using 20W type florescent lamp (size:d=100mm). It also saves energy by 75%, lasts 7 times longer and 36% compact compared to the conventional model. Low environmental impact is achieved by developing a compact, high efficient and long life lamp together with a high efficient inverter, and applying a silver deposited reflector of 98% reflectance.



#### Matsushita Electric Works, Ltd

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 Tel 81-6-6908-1131 Fax  
 E-mail  
 URL <http://biz.national.jp/Ebox/nashop/index.html>

Available in : Japan

Spiral down light with silver deposited reflector "SPILE series" : NFM21700ENM

## Eco-products

EP-1-043

Home electric appliances / Lightings

fluorescent lamps

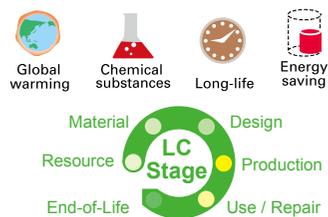
### Luminaire for High frequency Operated Lamp(s) "Hf86 HIGH POWER SERIES"

The Hf86 high-power series are fluorescent lamp fixtures that have increased brightness compared to precious Hf86 type apparatuses with an illuminator equipped with a special inverter and a high power lamp "High-power UV" newly developed by an eco-factor of 1.2. In addition, the lamp achieved a long life 15,000 hours that is about 1.3 times greater longevity than ordinary one.

The brightness becomes equal to the mercury light 400W for (HPK11207VH-EU24) in the case of a fixture equipped with two lights and a shade so that mercury light 400W which have been used frequently in factories and warehouses can be replaced with our fluorescent lamp fixtures. Consequently energy reduction ( and CO<sub>2</sub> reduction) by 54% has been achieved compared to the 400W mercury light. In addition to energy conservation, our technology can contribute to resource conservation and waste reduction by its significant longevity.

#### HITACHI Lighting

2-5-2, Kanda-Sudachou, Chiyoda-ku 101-0041, Japan  
 Tel 03-5296-2947 Fax 03-3255-5279  
 E-mail iwata@hitachi-hll.co.jp  
 URL <http://www.hitachi-hll.co.jp/index.php>



HPK11207VH-EU24

## Eco-products

EP-1-044

Home electric appliances / Lightings

ceramic metal halide lamps

### Ceramic metal halide lamp "HCl series"

HCl series are compact metal halide lamp with ceramic bulb. Both efficiency and color rendering properties are high ability. It keeps stable luminous flux and lighting color from starting to the end of lifetime. Now the bulb of "HCl series" are proceeded to change into ball shaped bulb "POWERBALL" which improves the lamp performance such as efficiency, color rendering properties, lifetime and so on. Many kinds of products are lined up in base, wattage and lighting color. They can be utilized at various places of commercial facilities.

Especially, HCl-TE100W(4000K, transparent type) achieves high efficiency of 115lm/W. SHOPLIGHT type, which is improved in red color reproducibility, is suitable for needs reproducibility of brilliant color in shop.

#### MITSUBISHI ELECTRIC OSRAM Ltd.

Tobu Yokohama Bldg. No.3(4F) 8-29, Kita-Saiwai 2-chome, Nishi-ku, Yokohama 220-0004, Japan  
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 E-mail  
 URL <http://www.mol-oml.co.jp>



HCl-TE100W

## Eco-products

EP-1-045

Home electric appliances / Lightings

light bulbs

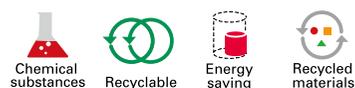
### RoHS-Free Liliput Series Fluorescent Energy Saving Lamp

Established in 1994, MEGAMAN has already established itself as a respected German brand, making it one of the top 3 brands in the CFL industry. In Europe, MEGAMAN is a leading brand in energy-saving lamps that has successfully positioned itself as one of the innovative leaders in lamp designs that are exceptionally outstanding.

Megaman cares for environment, our eco-friendliness lies in the: RoHS compliant features in all MEGAMAN lamps exported to Europe. Lead-free Soldering and Lead-free Glass used in RoHS compliant models. Silicone Sleeve holds broken glass and mercury in place before proper disposal and recycling. Water-based adhesive is used to prevent release of toxic substances during lamp operation.

#### Megaman (S) Electrical & Lighting Pte Ltd

101 Kitchener Road, #01-32 Jalan Besar Plaza 208511, Singapore  
Tel 65-6396-5576 Fax 65-6396-7456  
E-mail sales@megaman.com.sg  
URL www.megaman.com.sg



Available in : Asia

MU111i/E27- RoHS compliant features in Liliput Plus and Liliput with INGENIUM series

## Eco-products

EP-1-046

Home electric appliances / Lightings

DC lamps

### Energy Efficient DC Lamps

Phocos is one of the largest suppliers of off-grid power supply system components in the world. Headquartered in Ulm, Germany, Phocos develops, designs and manufactures products to suit the needs of all stake-holders in the global solar power market.

Phocos is strongly committed in developing and producing products that meet the company strict specifications in terms of quality, innovation and technology in our products.

Besides the comprehensive range of solar charge controllers, Phocos is offering quality 12/24 V DC lamps that have very high illumination efficiency at low power consumption. Our DC Lamps have more than 8,000 hours of life span at 25°C ambient temperature with more than 500,000 switching cycles (IEC925).

For Phocos 11W DC Lamps, an average luminous efficacy is 63lm/W for Warm Light and 61lm/W for Cool Light. The equivalent brightness compared with normal incandescent lamp is 65W!

#### PHOCOS SEA PTE LTD

51 Ayer Rajah Crescent, #06-15 139948, Singapore  
Tel 65-6778-9509 Fax 65-6778-0119  
E-mail info-sea@phocos.com  
URL http://www.phocos.com



Available in : Worldwide

CFL & LED Lamps

## Eco-products

EP-1-047

Home electric appliances / Lightings

energy efficient DC lamps

### EcooLite™ Long Life Lamps

A patented superb high quality lamp which is designed to fill the gap of low power consumption bulb below 4 watts and yet deliver high soothing diffused illumination.

EcooLite™ is a Long-life Lamp that has low heat loss resulting in energy saving and is safe to touch during operation, unlike conventional CFL and incandescent bulb. External non-glass cover provides greater safety factor during usage and handling. As a result, greater life span of the lamp is achieved with more than 25,000 operating hours.

EcooLite™ is highly reliable and durable that it carries 2 years' warranty.

#### The Features of EcooLite™ :

- Durability as it is designed for harsh condition
- Reliability as it operates 25,000 hours or more
- Safety in handling as it is protected by non-glass cover
- Energy efficient as it consumes low power and low heat loss

#### GRENZONE PTE LTD

51 Ayer Rajah Crescent, #06-16/17 139948, Singapore  
Tel 65-6872-2350 Fax 65-6872-5610  
E-mail [info@grenzone.com](mailto:info@grenzone.com)  
URL <http://www.grenzone.com>

Available in : Worldwide

GZE 01202/W/C EcooLite 12V, 2W Warm or Cool



## Eco-products

EP-1-048

Home electric appliances / Lightings

solar signboard lighting system

### Solar Signboard Lighting System

Solar Signboard Lighting System (SSLS) harnesses energy from the sun. Energy generated is used to light up signboard whether it is back lighted or front illuminated.

It can be installed easily anywhere that has unblocked sunlight. SSLS can either act as the sole energy provider to the signboard lighting or as back-up power.

Many urban or sub-urban places still face unstable power from the grid and SSLS solution to ensure the signboard is always illuminated as planned.

SSLS is a cost effective solution for both new and existing signboards

#### The benefits of SSLS:

- Easy to integrate with existing Signboard's AC lamps
- Acts as backup power
- Auto on/off

#### The Features:

- Capable to power up to 4x 36W AC Fluorescent lamps or equivalent
- Standalone or retrofit on existing display
- Smart control system by detecting dusk to turn on the signboard.
- Automatic switch over (non-real time) to battery when blackout occurs (Solar-AC System)

#### GRENZONE PTE LTD

51 Ayer Rajah Crescent, #06-16/17 139948, Singapore  
Tel 65-6872-2350 Fax 65-6872-5610  
E-mail [info@grenzone.com](mailto:info@grenzone.com)  
URL <http://www.grenzone.com>

Available in : Worldwide

Solar Signboard Lighting System



## Eco-products

EP-1-049

Home electric appliances / Lightings

portable lighting solutions

### EcooRay Rechargeable Lantern

EcooRay Rechargeable Lantern, with its aluminium body and tough polycarbonate cover, is suited for rugged outdoor use and handling. It can take a wide range of DC Voltage inputs (9V to 18V), making it the best choice option for remote and rural applications.

**The benefits of EcooRay:**

- Ease of use
- Light and portable
- Provide instant lighting in off-grid locations
- Rugged and handy
- Rechargeable lantern
- RoHS Compliant

**The Features:**

- Long-life lamp with more than 5 years of cycle life without requiring lamp replacement
- Durable with aluminium alloy body, transparent polycarbonate cover that is splash and shatter proof.
- Use commercial NiMH "AA" rechargeable batteries where users can replace it themselves
- Versatile charging channel such as from PV, DC and AC Adaptor (9V, 2A type preferred)
- Ability to charge and use simultaneously
- Built-in microprocessor for efficient charging and discharging control

**GRENZONE PTE LTD**

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 Tel 65-6872-2350 Fax 65-6872-5610  
 E-mail [info@grenzone.com](mailto:info@grenzone.com)  
 URL <http://www.grenzone.com>



Available in : Worldwide

GZR 05402C EcooRay Rechargeable Lantern

## Eco-products

EP-1-050

Home electric appliances / Lightings

solar street light

### EsoLit Solar Lighting System

EsoLit Solar Lighting System is the ideal solution for streetlight for park, junction, factory, housing estate and other common areas that requires reasonable illuminations. It operates at low voltage level which is safe for public use.

EsoLit is fully autonomous as it will automatically turn on/off the lamp according to the daylight condition. The default setting is dusk-to-dawn operation. Other operational modes such as dusk on, midnight off can be programmed too.

**The benefits of EsoLit:**

- Easy to install, no long cables to be laid compared with conventional street lighting
- Provide instant lighting in off-grid locations
- Auto on/off
- Back-up power of 3-days
- Low cost

**The Features :**

- Highly energy efficient with use of compact fluorescent lamp (CFL) or low pressure sodium lamp (LPS). Both lamps consume less power and supply much higher illumination compared to conventional tungsten lamp
- Fully autonomous operation. Default mode is dusk-to-dawn uninterrupted lighting.
- 3-days standby backup power
- Built-in protection circuits for overcharging and discharging of the battery.
- Weather proof lamp fixture fitting

**GRENZONE PTE LTD**

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 E-mail [info@grenzone.com](mailto:info@grenzone.com)  
 URL <http://www.grenzone.com>



Available in : Worldwide

GZS 06215W /C EsoLit Solar Lighting System

## Eco-products

EP-1-051

Home electric appliances / Lightings

linelight

### Linelight

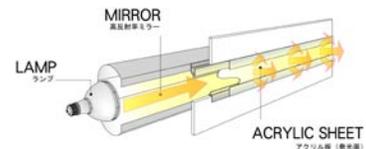
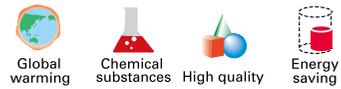
Linelight maximizes the illumination potential of artificial lighting by efficiently channeling the illumination of a single or two light sources along a significant length of line. Linelight is comprised by a highly-reflective aluminum mirror housing with a total reflection of 98% fronted by an acrylic sheet for even dispersion, which is contained within an aluminum frame.

Linelight accepts lamps from 35 to 150 Watts in power, and will carry bright light 30 feet or more using only a single or two lamps. It boasts of flexible design and strong expressiveness, while saving energy, particularly if used for indirect lighting.

Not only are fewer fixtures required compared with conventional point-source installations, but maintenance is also simplified, as only a single or two fixtures must be changed.

#### Materialhouse Co., Ltd.

1-19-3, Naka-ikegami, Ota-ku, Tokyo 146-0081, Japan  
 Tel 81-3-3751-5158 Fax 81-3-3755-0065  
 E-mail [h.arai@materialhouse.co.jp](mailto:h.arai@materialhouse.co.jp)  
 URL <http://www.materialhouse.co.jp>



Linelight

## Eco-products

EP-1-052

Home electric appliances / Lightings

LED task lighting

### VIOLED Sensor LED Lighting with Backup Battery

The Sensor LED Lamp automatically reduces power and energy consumption in normal operation by providing reduced constant lighting and yet able to increase the light intensity for a time period when required to save power and energy costs substantially. Various models in ranging LED power ratings 5W/11W, 8W/16W, 11W/22W, 11W/25W, 11W/35W are also available with and without backup battery power pack for emergency lighting. The operation of the backup battery provides 11W power for lighting during emergencies for corridors and stairways.



#### VIOLED International Pte Ltd

55 Ubi Avenue 1 #04-01 408935, Singapore  
 Tel 65-6842-1623/6747-9719 Fax 65-6842-5623  
 E-mail [patrick@lmw.com.sg](mailto:patrick@lmw.com.sg)  
 URL

Available in : Made in Singapore, available Worldwide

V-SENSOR LED LIGHT-BBP-11W/25W

## Eco-products

EP-1-053

Home electric appliances / Lightings

lighting fixtures

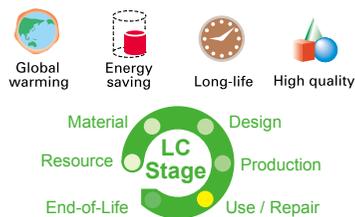
### highly-efficient and power-saving "LED Desk Lamp"

[product features]

- With power-saving LED devices and "MiLED ILLUMINATION UNIT" [International Application No.:PCT/JP2005/016848], color shading and shadow of illumination light have been settled.
- With the effect of "MiLED ILLUMINATION UNIT" and LED devices, High illuminance (1,000 lux), low power (5W) and color rendering properties (Ra90) have been realized.
- With the constant current power supply, function of flicker-Free dimmer control have been realized.

**MIRAI Co.,LTD.**

Nishimotokosannishikicho BLDG. 5F 3-23, Kandanishikicho, Chiyoda-ku, Tokyo 101-0054, Japan  
 Tel 81-3-5217-2233 Fax 81-3-5217-2235  
 E-mail mirai@miraijapan.com  
 URL <http://www.miraijapan.com/>



M005

## Eco-products

EP-1-054

Home electric appliances / Lightings

lighting fixtures

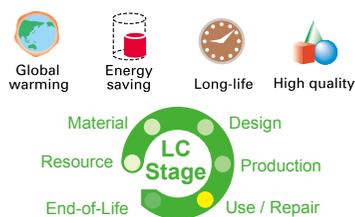
### highly-efficient and power-saving "LED Downlight Unit"

[product features]

- With power-saving LED devices and "MiLED ILLUMINATION UNIT" [International Application No. : PCT/JP2005/016848]with two different surface treatment, color shading and shadow of illumination light have been settled.
- With the effect of "MiLED ILLUMINATION UNIT" and power saving LED devices, 4.5W low power and 200lm luminous flux have been realized.
- With controlling the LED heat generation, the lighting unit was realized the appliance height of 35mm with which placing is possible even in the narrow ceiling space.

**MIRAI Co.,LTD.**

Nishimotokosannishikicho BLDG. 5F 3-23, Kandanishikicho, Chiyoda-ku, Tokyo 101-0054, Japan  
 Tel 81-3-5217-2233 Fax 81-3-5217-2235  
 E-mail mirai@miraijapan.com  
 URL <http://www.miraijapan.com/>



M006

## Eco-products

EP-1-055

Home electric appliances / Lightings

lighting fixture

### Energy saving HID lighting fixture for high-ceilinged rooms

NEOCERA 250W lamp has a high color rendition and the industry's highest lamp efficiency. By combining this lamp with a newly developed film which has an increased reflection factor, the industry's top-level fixture efficiency was realized. The combination realized a decrease in number of the fittings to be placed. Thereby, 52% of the consumption energy was saved in comparison with the conventional lamp instruments (400W mercury lamp plus fittings). Moreover, an inverter having a 100%- 50% continuous dimming function also contributes to energy saving through the flexible lighting control.

- **Energy Saving:** Owing to the increased reflectivity of the mirror from 80% to 94%, the energy consumption was halved in comparison with the conventional mercury lamp. Dimming function is also useful.
- **Resource Saving:** Number of fittings was reduced by 25%.
- **Elimination of harmful chemical substances:** Cr-free steel and Pb-free solder was used as instrument materials. Pb-free electric wire was used for the wiring in the instrument.



DD-25111FK-DPM2

#### TOSHIBA LIGHTING & TECHNOLOGY CORPORATION

Minamishinagawa JN Bldg, 2-13, Minamishinagawa 2-chome,  
Shinagawa-ku, Tokyo 140-8660, Japan  
Tel 81-3-5463-8769 Fax 81-3-5463-8824  
E-mail  
URL <http://www.tlt.co.jp/>

## Eco-products

EP-1-056

Home electric appliances / Lightings

emergency lighting fixture

### Factory-use Emergency Lighting Fixture with reduced harmful chemical substances

- **Elimination of harmful chemical substances:** A Cd-free nickel metal-hydride battery was adopted as the emergency battery. A Cr-free steel plate without any soil pollutant was used for the main body. Pb-free printed circuit board was adopted for the lighting unit. Pb-free wire is used for electric wiring inside the lighting fixture. As above mentioned, we have promoted the reduction of harmful chemical substances.
- **Resource Saving:** The number of fixtures was reduced by 20-30% compared to that of the conventional incandescent emergency-light, which contributes to resource saving.



IEM-13821HN

#### TOSHIBA LIGHTING & TECHNOLOGY CORPORATION

Minamishinagawa JN Bldg, 2-13, Minamishinagawa 2-chome,  
Shinagawa-ku, Tokyo 140-8660, Japan  
Tel 81-3-5463-8769 Fax 81-3-5463-8824  
E-mail  
URL <http://www.tlt.co.jp/>

## Eco-products

EP-1-057

Home electric appliances / Lightings

office lighting fixture

### High-efficiency office luminaire offering both energy and resource savings

High efficiency of the luminaire (lighting fitting) was achieved by using a white steel-plate reflector and aluminum mirror reflector with a reflectivity of more than 90%. Environmental load was reduced by using Cr-free steel plate without the soil pollution material, and by Pb-free electric wire and solder. In addition, total material quantity of the product was reduced by miniaturization and partial packaging. As for the source voltage to be used, the universal voltage of 100-242V has been realized.

- **Energy Saving:** The reflectance was improved from 83 % to 92 % for the main body and from 80% to 94% for the louver reflectance, and thereby the luminaire efficiency increased from 56% to 72%. As a result, the energy saving of 30% has been realized.
- **Resource Saving:** By the adoption of the voltage-free inverter, the stock space was halved. The height of luminaire was reduced from 83mm to 70mm, so the package material was reduced by 50%.
- **Elimination of harmful chemical substances:** steel plate not containing six valence chromium, Pb-free electric wire, and Pb-free solder are used.



#### TOSHIBA LIGHTING & TECHNOLOGY CORPORATION

Minamishinagawa JN Bldg, 2-13, Minamishinagawa 2-chome, Shinagawa-ku, Tokyo 140-8660, Japan  
Tel 81-3-5463-8769 Fax 81-3-5463-8824  
E-mail  
URL <http://www.tlt.co.jp/>



FHR-42941NK-PH9

## Eco-products

EP-1-058

Home electric appliances / Lightings

high efficiency led downlight

### High-efficiency LED Downlight, considering economy and global warming prevention

In the accomplishment plan of the Kyoto Protocol, many measures were set for the prevention of global warming. Among them, "The spread of high efficiency lighting (LED) "was planned. "E-CORE" achieved the required performance for energy saving as well as economical efficiency, for the first time in the industry.

- **Energy Saving:** The same brightness as the incandescent bulb was realized with 1/7 power consumption.
- **Resource Saving:** The life of LED is 40,000 hours, which is 20 times of life of the incandescent bulb. Exchange of lamp is unnecessary for 10 years so 20 lamps are reduced.
- **Elimination of harmful chemical substances:** As the materials of the main body, chromium-free steel plate and lead-free solder were used. Lead-free electric wire was used for the wiring in the instrument.

The product won a prize at the 4th Eco-Products Awards.(E-CORE40) in Japan.



#### TOSHIBA LIGHTING & TECHNOLOGY CORPORATION

Minamishinagawa JN Bldg, 2-13, Minamishinagawa 2-Chome, Shinagawa-ku, Tokyo 140-8660, Japan  
Tel 81-3-5463-8768 Fax 81-3-5463-8824  
E-mail  
URL <http://www.tlt.co.jp/>



E-CORE60:LEDD-66001W-LS1, E-CORE40:LEDD-44001W-LS1

## Eco-products

EP-1-059

Home electric appliances / Lightings

ceramic metal halide lamps

### Ceramic metal halide lamp, giving energy-saving high-grade illumination space

NEOCERA <PRIDE>145W is a high color rendering lamp. It has a lamp efficiency of 130lm/W in which is highest in the lamp industry. It is a beautiful, bright light source of energy saving type, and it can realize a high-grade illumination space with small power consumption. If a street light is designed with this lamp and its exclusive appliance, 64% of energy saving is possible in comparison with the conventional street light.

- **Energy Saving:** Power consumption decreased from 400W to 145W, which gives 64% reduction.
- **Resource Saving:** The lamp became slim; the outer diameter decreased from 116mm to 40mm.
- **Elimination of harmful chemical substances:** The amount of mercury was reduced to below 1/5.



Neocera "PRIDE"145W

#### TOSHIBA LIGHTING & TECHNOLOGY CORPORATION

Minamishinagawa JN Bldg, 2-13, Minamishinagawa 2-chome,  
Shinagawa-ku, Tokyo 140-8660, Japan  
Tel 81-3-5463-8750 Fax 81-3-5463-1085  
E-mail  
URL <http://www.tlt.co.jp/>

## Eco-products

EP-1-060

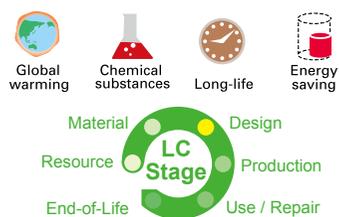
Home electric appliances / Lightings

ceiling lights

### Japanese-style house-lighting equipment which adopted the plastic of plant origin

This product is friendly to earth and human being, and authorized by Japan Organics Recycling Association as the "biomass mark goods". By using this, it is possible to reduce the discharge of the greenhouse effect gas CO<sub>2</sub> which is a cause of the global warming, and to contribute to construct the recycling society.

- **Energy Saving:** Energy consumption efficiency was raised up by 8% compared to a comparison product (Model: FPH-7691ZK).
- **Resource Saving:** The fossil resources consumption at the time of the plastic production reduces about 30% in comparison with the oil-based plastic.



#### TOSHIBA LIGHTING & TECHNOLOGY CORPORATION

8-13, Sotokanda 1-chome, Chiyoda -ku, Tokyo 101-0021, Japan  
Tel 81-3-5297-5715 Fax 81-3-3251-6601  
E-mail  
URL [http://www.tlt.co.jp](http://www.tlt.co.jp/)

FVH77607

## Eco-products

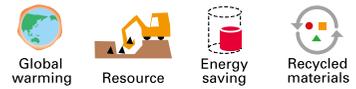
EP-1-061

Home electric appliances / Lightings

daylighting system

### Solatube Daylighting System

Eurolite offers Solatube, Natural Daylighting System, which is energy - efficient & environmentally friendly . Engineered for Peace of Mind, innovations from Solatube offer huge amount of saving in utilities and contribution toward clean and green environment. Suitable for a wide variety of application including warehouse, industrial, commercial, education, etc.



#### Eurolite Group

20 Bukit Batok Crescent, Enterprise Centre 658080, Singapore  
 Tel 65-6896-3131 Fax 65-6899-3131  
 E-mail [solatube@eurolite.com.sg](mailto:solatube@eurolite.com.sg)  
 URL <http://www.eurolitegroup.com>

Available in : Worldwide

## Eco-products

EP-1-062

Home electric appliances / Lightings

the daylighting system using mirror ducts

### The Daylighting System using Mirror Ducts

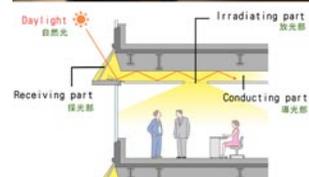
The daylighting system using mirror ducts (the System) brings daylight into indoors. It is easy to use because it thoroughly diffuses and controls light during the receiving and conducting processes.

The System contributes to CO<sub>2</sub> discharge reduction by decreasing electric power usage for lighting as well as the creation of comfortable environments that artificial lighting cannot provide. It has the following characteristics:

1. A simple structure, utilizing mirrors to lead daylight into rooms, which supplies plenty of light economically.
2. High energy-use efficiency because the System simply uses natural light without converting it into electricity, etc.
3. No energy consumption to operate any machinery or equipment because there is nothing like sun-chasing devices.
4. Maintenance-free for significant time of period because its closed up structure protects itself from most trouble and deterioration.

#### Materialhouse Co., Ltd.

1-19-3, Naka-ikegami, Ota-ku, Tokyo 146-0081, Japan  
 Tel 81-3-3751-5158 Fax 81-3-3755-0065  
 E-mail [h.arai@materialhouse.co.jp](mailto:h.arai@materialhouse.co.jp)  
 URL [www.materialhouse.co.jp](http://www.materialhouse.co.jp)



The Daylighting System using Mirror Ducts

## Eco-products

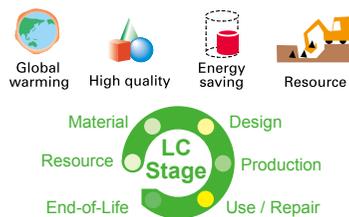
EP-1-063

Home electric appliances / Lightings

video cameras

### High Definition Video Camera, HDC-SD5

- Standby power consumption of AC adaptor reduced to 0.1W due to low power circuit technology.
- Achieved Main Product weight(w/o Battery) of 340g (reduced by 20% compared with our current model HDC-SD3).
- Circuits have been integrated to promote energy saving, and compactness and light weight of circuit boards and fundamental parts have been improved.
- Non-Use of Specific Chemical Substances \*  
(\*: Lead, mercury, cadmium, hexavalent chromium, two specific brominated flame retardants, designated by the EU RoHS Directive.)



**Matsushita Electric Industrial Co., Ltd.**  
**Panasonic AVC Networks Company**

1-15 Matsuo-cho, Kadoma, Osaka 571-8504, Japan  
Tel 81-6-6905-8356 Fax 81-6-6905-4755  
E-mail  
URL <http://panasonic.co.jp/pavc/>



Available in : Japan

High Definition SD Card Video Camera : HDC-SD5

## Eco-products

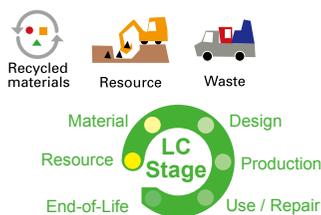
EP-1-064

Home electric appliances / Lightings

video cameras

### Digital video camera recorder "Handycam" DCR-SR62

CDs disposed of by optical disc manufacturer Sony Music Manufacturing Inc. in Japan are converted into recycled polycarbonate using a proprietary method developed by the Sony Group that removes the surface coating through crushing and chemical cleaning. This recycled high quality plastics are used in the front panel of camcorder "DCR-SR62". Recycling loop started to go around within the Sony Group.



**Sony Corporation**

1-7-1 Konan Minato-ku, Tokyo 108-0075, Japan  
Tel 81-3-6748-2111 Fax 81-3-6748-2244  
E-mail  
URL <http://www.sony.net>



Digital video camera recorder "Handycam" DCR-SR62

## Eco-products

EP-1-065

Home electric appliances / Lightings

video cameras

### Digital high-definition video camera recorder "Handycam" HDR-SR8

While PVC currently is not regulated by any laws that apply to chemical substances used in electronics products, Sony is working to eliminate PVC wherever a viable alternative is available. For example, Sony has succeeded in eliminating PVC from the casing and packaging materials used for its products. In addition, Sony has switched to Polyolefin materials for certain power cables, AC adapter cords and electrical cords used in its products. Sony plans to substitute PVC in all new models of Mobile products (excluding accessories) by the end of fiscal 2010, provided that the substitute meets all product quality and technical requirements.

And also, Sony is promoting the use of alternatives to brominated flame retardants (BFRs), which can generate harmful substances if treated improperly after disposal. Sony plans to substitute BFRs in the casing and main PWBs of all new models of Mobile products by the end of fiscal 2010, provided that the substitute meets all product quality and technical requirements.

#### Sony Corporation

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Tel 81-3-6748-2111 Fax 81-3-6748-2244  
E-mail  
URL <http://www.sony.net>



Digital high-definition video camera recorder "Handycam" HDR-SR8

## Eco-products

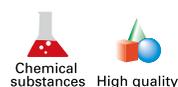
EP-1-066

Home electric appliances / Lightings

video cameras

### BD CAMERA

5.3 Mega Pixel 1/2.8" CMOS Image Sensor Captures high definition video through a newly developed CMOS image sensor that can record video at 1920 x 1080/60Hz and still images at 2400 x 1800 pixels. 8 cm BD-RE/-R/DVD Drive Hitachi has developed a compact, low power consuming, quiet and highly reliable 8 cm BD/DVD drive which is compatible with five types of industry standard discs: BD-RE/-R, DVD-RAM/-RW/-R.



#### Hitachi, Ltd.,

292 Yoshida-cho, Totsuka-ku, Yokohama 244-0817, Japan  
Tel 81-45-866-6152 Fax 81-45-866-5920  
E-mail  
URL <http://www.av.hitachi.co.jp>

DZ-BD7HSW

## Eco-products

EP-1-067

Home electric appliances / Lightings

digital cameras

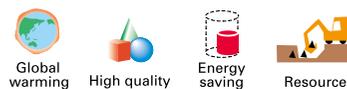
### Digital Camera, LUMIX FZ18

/28mm wide-angle LEICA DC VARIO-ELMARIT lens with f/2.8-4.2 brightness and a powerful 18x optical zoom (equivalent to 28-504mm on a 35mm film camera) plus an 8.1 megapixel CCD into a compact, portable body.

- Achieved power consumption of 1.5W (reduced by 6% compared with our current model DMC-FZ8) due to low power circuit technology.
- Power saving performance realizing about 400 continuous shots.
- Circuits have been integrated to promote energy saving, and compactness and light weight of circuit boards and fundamental parts have been improved.
- Non-Use of Specific Chemical Substances \*  
(\*: Lead, mercury, cadmium, hexavalent chromium, two specific brominated flame retardants, designated by the EU RoHS Directive.)

**Matsushita Electric Industrial Co., Ltd.**  
**Panasonic AVC Networks Company**

1-15 Matsuo-cho, Kadoma, Osaka 571-8504, Japan  
Tel 81-6-6905-8356 Fax 81-6-6905-4755  
E-mail  
URL <http://panasonic.co.jp/pavc/>



Digital Camera : LUMIX FZ18

Available in : Japan

## Eco-products

EP-1-068

Home electric appliances / Lightings

digital camera

### Digital Movie Camera VPC-HD1000

Smallest & Lightest (As of 24/08/2007 SANYO study of 1080i High Definition Video Camera)

Complies with RoHS Directive



**SANYO Electric Co., Ltd.**

1-1, Seta, 1-chome, Otsu City, Shiga 520-2134, Japan  
Tel 81-77-543-5671 Fax 81-77-543-5618  
E-mail [hira074299@sanyo.co.jp](mailto:hira074299@sanyo.co.jp)  
URL <http://www.sanyo.co.jp/>

VPC-HD1000

## Eco-products

EP-1-069

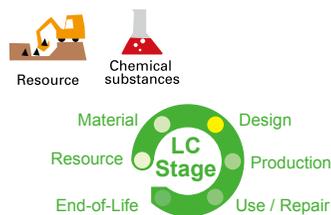
Home electric appliances / Lightings

digital camera

### Digital Movie Camera VPC-HD700

Smallest & Lightest! (As of 11/01/06 SANYO study of 720p High Definition Video Camera)

Complies with RoHS Directive



#### SANYO Electric Co., Ltd.

1-1, Seta, 1-chome, Otsu City, Shiga 520-2134, Japan  
 Tel 81-77-543-5671 Fax 81-77-543-5618  
 E-mail [hira074299@sanyo.co.jp](mailto:hira074299@sanyo.co.jp)  
 URL <http://www.sanyo.co.jp/>



VPC-HD700

## Eco-products

EP-1-070

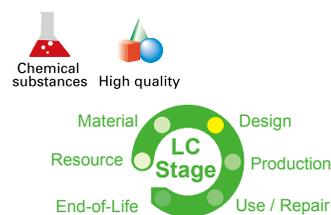
Home electric appliances / Lightings

digital camera

### Digital Movie Camera VPC-CA65/E1

The world's 1st waterproofing Digital Movie Camera

Complies with RoHS Directive



#### SANYO Electric Co., Ltd.

1-1, Seta, 1-chome, Otsu City, Shiga 520-2134, Japan  
 Tel 81-77-543-5671 Fax 81-77-543-5618  
 E-mail [hira074299@sanyo.co.jp](mailto:hira074299@sanyo.co.jp)  
 URL <http://www.sanyo.co.jp/>



VPC-CA65/E1

## Eco-products

EP-1-071

Home electric appliances / Lightings

blu-ray disc players

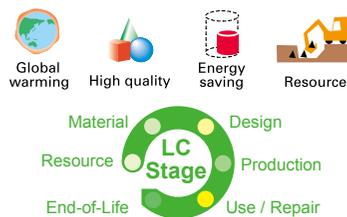
### Blu-ray Disc player with SD Card Slot, DMP-BD30

Blu-ray Disc Player with SD Card Slot, Final Standard Profile, Precise Digital Audio & Video and UniPhier Technology

- Achieved power consumption of 25W (reduced by 40.4% compared with our current model DMP-BD10) due to low power circuit technology.
- Circuits are highly integrated to conserve energy, and compact and light weight design are employed for circuit boards and key components.
- Non-Use of Specific Chemical Substances \*  
(\* Lead, mercury, cadmium, hexavalent chromium, two specific brominated flame retardants, designated by the EU RoHS Directive.)

**Matsushita Electric Industrial Co., Ltd.**  
**Panasonic AVC Networks Company**

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Tel 81-6-6905-8356 Fax 81-6-6905-4755  
E-mail  
URL <http://panasonic.co.jp/pavc/>



Available in : Japan

Blu-ray Disc player with SD Card Slot : DMP-BD30

## Eco-products

EP-1-072

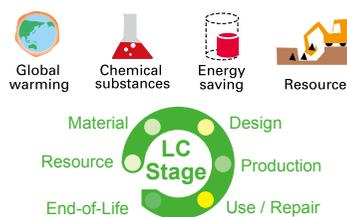
Home electric appliances / Lightings

blu-ray disc recorders

### Blu-Ray disc recorder with digital HD tuner and HDD

Using lead-free solder and reducing standby power consumption by approx. 12 %,\* the product is environmentally designed and achieved to save weight and thickness of its packaging while maintaining protective functions. The product not only reduces cardboard materials used but gives consideration to environmental impact due to transportation through improving transport efficiency.

- \* Compared with our model "BDZ-V9." Brightness: lights-out Standby mode: Standard



**Sony Corporation**

1-7-1 Konan Minato-ku, Tokyo 108-0075, Japan  
Tel 81-3-6748-2111 Fax 81-3-6748-2244  
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BDZ-X90

## Eco-products

EP-1-073

Home electric appliances / Lightings

digital audio players

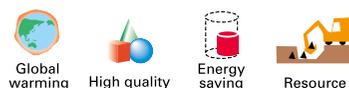
### SD Audio Player, SV-SD850N

- Achieved power consumption of 0.023W (reduced by 27% compared with our current model SV-SD350V) due to low power circuit technology.
- Circuits have been integrated to promote energy saving, and compactness and light weight of circuit boards and fundamental parts have been improved.
- Non-Use of Specific Chemical Substances \*  
(\*: Lead, mercury, cadmium, hexavalent chromium, two specific brominated flame retardants, designated by the EU RoHS Directive.)

**Matsushita Electric Industrial Co., Ltd.**  
**Panasonic AVC Networks Company**

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Tel 81-6-6905-8356 Fax 81-6-6905-4755  
E-mail  
URL <http://panasonic.co.jp/pavc/>

Available in : Japan



SD Audio Player, SV-SD850N

## Eco-products

EP-1-074

Home electric appliances / Lightings

portable dvd player

### Portable DVD Player DVP-FX850/FX860DT

Mercury-free backlight is used in high-definition LCD which you can enjoy more beautiful DVD images. You can watch or play DVDs with a battery capacity of up to approx. 6 hours, so you do not have to be worried about the battery to run out soon. DVD-FX860DT is equipped with one-segment broadcasting tuner and its battery will allow you to watch one-segment broadcasting program for approx. six hours continuously.

\*In case of using LCD backlight at minimum with headphones (sold separately) indoors. The battery life depends on the use environment or status of the battery and might shorten the time you watch/play DVDs.

**Sony Corporation**

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Tel 81-3-6748-2111 Fax 81-3-6748-2244  
E-mail  
URL <http://www.sony.net>



DVP-FX860DT (Model equipped with one-segment broadcasting tuner)

## Eco-products

EP-1-075

Home electric appliances / Lightings

HDD & DVD recorder

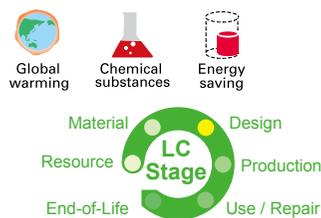
### HDD & DVD recorder "RD-E301"

RD-E301 is a DVD recorder corresponding to recording the high-definition television broadcasting to the hard disk. And it corresponded to two programs recording of the high-definition television broadcasting and the analog broadcasting simultaneously.

- **Energy Saving:** 22% of the power consumption was reduced. 19 grams a day of CO<sub>2</sub> emissions were reduced.(Benchmark model: RD-X1)
- **Resource Saving:** 46% of the volume and 33% of the weight were reduced by the adoption of a thin-type design. (Benchmark model: RD-X1)

#### TOSHIBA CORPORATION Digital Media Network Company

1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan  
 Tel 81-3-3457-2581 Fax 81-3-5444-9407  
 E-mail  
 URL <http://www.toshiba.co.jp>



Available in : Japan

RD-E301

## Eco-products

EP-1-076

Home electric appliances / Lightings

batteries

### eneloop HR-3UTG

As part of the new "eneloop lifestyle", eneloop is thought of as a "living battery", not a disposable one. eneloop can be used repeatedly and can be recycled. eneloop was created by SANYO Electric as the first "ready to use" rechargeable battery that can replace dry cells.

We believe that by creating this necessary product we are contributing to and helping maintain a beautiful world for our children and their future. eneloop was developed as the first product that embodies the "Think Gaia" SANYO vision. It can be safely recycled, is resource efficient and of course RoHS compliant. eneloop is more powerful than dry batteries, especially useful at low temperatures, longer lasting and rechargeable. Moreover, it can be used about 1000 times, which makes it economical. SANYO's eneloop unites a more comfortable lifestyle with a concern for the global environment.

#### SANYO Electric Co., Ltd.

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 Tel 81-77-543-5671 Fax 81-77-543-5618  
 E-mail [hira074299@sanyo.co.jp](mailto:hira074299@sanyo.co.jp)  
 URL <http://www.sanyo.co.jp/>



eneloop HR-3UTG

## Eco-products

EP-1-077

Home electric appliances / Lightings

primary batteries

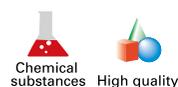
### Mercury-Free Silver Oxide Batteries

Silver oxide batteries, used in wristwatches and other small products, traditionally contain mercury to prevent the generation of hydrogen gas; a cause of the deterioration of batteries. Because the production of silver oxide batteries without mercury has generally been seen as unfeasible, the use of mercury in these batteries is exempted <sup>※1</sup>. Sony has been conducting research with the aim of realizing mercury-free silver oxide batteries since the 1990s. These efforts led to the development of the technologies; new zinc alloy powder, new anticorrosion material in anode and new zinc anticorrosion process onto the collector. These technologies have facilitated the production of mercury-free batteries that deliver equal safety and performance as their conventional batteries.

※1 Under the EU Directive 2006/66/EC on batteries and accumulators, exemption provided for mercury content of maximum 2% by weight.

#### Sony Corporation

1-7-1 Konan Minato-ku, Tokyo 108-0075, Japan  
Tel 81-3-6748-2111 Fax 81-3-6748-2244  
E-mail  
URL <http://www.sony.net>



Mercury-free silver oxide battery, SR626SW

## Eco-products

EP-1-078

Home electric appliances / Lightings

digital audio players

### WALKMAN NW-A800 series

While PVC currently is not regulated by any laws that apply to chemical substances used in electronics products, Sony is working to eliminate PVC wherever a viable alternative is available. For example, Sony has succeeded in eliminating PVC from the casing and packaging materials used for its products. In addition, Sony has switched to Polyolefin materials for certain power cables, AC adapter cords and electrical cords used in its products. Sony plans to substitute PVC in all new models of Mobile products (excluding accessories) by the end of fiscal 2010, provided that the substitute meets all product quality and technical requirements.

And also, Sony is promoting the use of alternatives to brominated flame retardants (BFRs), which can generate harmful substances if treated improperly after disposal. Sony plans to substitute BFRs in the casing and main PCBs of all new models of Mobile products by the end of fiscal 2010, provided that the substitute meets all product quality and technical requirements.

#### Sony Corporation

1-7-1 Konan Minato-ku, Tokyo 108-0075, Japan  
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E-mail  
URL <http://www.sony.net>



WALKMAN NW-A808

## Eco-products

EP-1-079

Home electric appliances / Lightings

mini discs

### Mini Disc using Recycled Plastic

Sony's Bianca minidisc (MD) uses recycled resin for approximately 30% of total plastic content, excluding the disc itself. Index cards are made from recycled paper and printed using volatile organic compound (VOC)-free vegetable oil-based ink.



#### Sony Corporation

1-7-1 Konan Minato-ku, Tokyo 108-0075, Japan  
 Tel 81-3-6748-2111 Fax 81-3-6748-2244  
 E-mail  
 URL <http://www.sony.net>



Minidisc, 5MDW74BAA

## Eco-products

EP-1-080

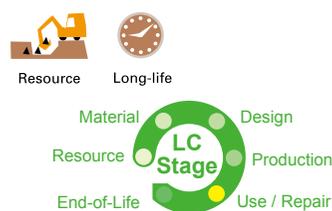
Home electric appliances / Lightings

magnetic discs

### Next-Generation DVD HD DVD-R

Hitachi Maxell has developed a next-generation DVD HD DVD-R product with a 15 gigabyte storage capacity, 3.2 times larger than that of conventional DVD-Rs.

A newly developed recording player with organic dye and high-precision stamper (master) have realized higher density and capacity. Efficient energy and resource utilization has been also achieved. As a result, CO<sub>2</sub> emissions per unit capacity is reduced by 70%.



#### Hitachi Maxell, Ltd.

1-1-88 Ushitora, Ibaraki-shi, Osaka 567-8567, Japan  
 Tel 81-72-623-8250 Fax 81-72-623-9014  
 E-mail [kankyo@maxell.co.jp](mailto:kankyo@maxell.co.jp)  
 URL <http://www.maxell.com/>



HDR 15P. 1P

## Eco-products

EP-1-081

Home electric appliances / Lightings

radio receivers

### Portable Radio ICF-B01

Cranking the handle will charge a built-in rechargeable battery. You can listen to FM/AM radio or use the light without having dry batteries. In addition, you can charge your mobile phone by cranking the handle or dry batteries. A minute of cranking gives you an hour of AM reception, 15 minutes of light, 90 minutes of keeping the standby screen of the mobile or 3 minutes of talk on the mobile <sup>\*1</sup>. The radio has two light settings, high-intensity LED flashlight and soft light. This product is splash resistant and specifically designed for use in emergency situations. A big tuning knob and a handle cranked in both directions are examples of our focus on user-friendliness. The product has all hand-cranked goodness.

<sup>\*1</sup> Standby time or duration of call should be used only as a guide, and do not adjust to all of the models.

#### Sony Corporation

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Tel 81-3-6748-2111 Fax 81-3-6748-2244  
E-mail  
URL <http://www.sony.net>



TV(1-3ch)/FM/AM Portable radio [ICF-B01]

## Eco-products

EP-1-082

Home electric appliances / Lightings

television receivers

### Hi-vision Plasma-TV "VIERA" PX70 Series (37)

Energy saving, high definition and high quality Plasma-TV

- Big image, space saving and high quality
- "VIERA LINK" making possible a remote controle of Panasonic's DVDs and AV amps by controle signals with HDMI cables
- Under speaker type

1. Non-Use of lead for plasma panels (world's first)
2. Non-Use of vinyl chloride resins for internal wires
3. Annual power consumption: Reduced by approx. 45% (compared with the conventional model, TH-37PX300)
4. Long lifetime design of LCD panel: Approx. 60,000 hours
5. Brightness sensor: Automatic picture brightness control according to room brightness
6. Power consumption switching mode: Peak brightness down with bright seans by setting
7. Automatic power off: In case of no signals for more than ten minutes or no directions for more than three hours

#### Matsushita Electric Industrial Co., Ltd. Panasonic AVC Networks Company

1-15 Matsuo-cho, Kadoma, Osaka 571-8504, Japan  
Tel 81-6-6905-5758 Fax 81-6-6905-5927  
E-mail  
URL <http://panasonic.jp/tv/>



Plasma-TV "VIERA" : TH-37PX70

Available in : Japan

## Eco-products

EP-1-083

Home electric appliances / Lightings

television receivers

### Hi-vision Plasma-TV "VIERA" PX70S Series (37)

Energy saving, high definition and high quality Plasma-TV

- Big image, space saving and high quality
- "VIERA LINK" making possible a remote controle of Panasonic's DVDs and AV amps by controle signals with HDMI cables
- Side speaker type

1. Non-Use of lead for plasma panels (world's first)
2. Non-Use of vinyl chloride resins for internal wires
3. Annual power consumption: Reduced by approx. 45% (compared with the conventional model, TH-37PX300)
4. Long lifetime design of LCD panel: Approx. 60,000 hours
5. Brightness sensor: Automatic picture brightness control according to room brightness
6. Power consumption switching mode: Peak brightness down with bright seans by setting
7. Automatic power off: In case of no signals for more than ten minutes or no directions for more than three hours

**Matsushita Electric Industrial Co., Ltd.**  
**Panasonic AVC Networks Company**

1-15 Matsuo-cho, Kadoma, Osaka 571-8504, Japan  
Tel 81-6-6905-5758 Fax 81-6-6905-5927  
E-mail  
URL <http://panasonic.jp/tv/>



Plasma-TV "VIERA" : TH-37PX70S

Available in : Japan

## Eco-products

EP-1-084

Home electric appliances / Lightings

television receivers

### Hi-vision Plasma-TV "VIERA" PX70 Series (42)

Energy saving, high definition and high quality Plasma-TV

- Big image, space saving and high quality
- "VIERA LINK" making possible a remote possible of Panasonic's DVDs and AV amps by controle signals with HDMI cables
- Under speaker type

1. Non-Use of lead for plasma panels (world's first)
2. Non-Use of vinyl chloride resins for internal wires
3. Annual power consumption: Reduced by approx. 45% (compared with the conventional model, TH-42PX300)
4. Long lifetime design of LCD panel: Approx. 60,000 hours
5. Brightness sensor: Automatic picture brightness control according to room brightness
6. Power consumption switching mode: Peak brightness down with bright seans by setting
7. Automatic power off: In case of no signals for more than ten minutes or no directions for more than three hours

**Matsushita Electric Industrial Co., Ltd.**  
**Panasonic AVC Networks Company**

1-15 Matsuo-cho, Kadoma, Osaka 571-8504, Japan  
Tel 81-6-6905-5758 Fax 81-6-6905-5927  
E-mail  
URL <http://panasonic.jp/tv/>



Plasma-TV "VIERA" : TH-42PX70

Available in : Japan

## Eco-products

EP-1-085

Home electric appliances / Lightings

television receivers

### Hi-vision Plasma-TV "VIERA" PX70 Series (50)

- Big image, space saving and high quality
- "VIERA LINK" making possible a remote controle of Panasonic's DVDs and AV amps by controle signals with HDMI cables
- Side speaker type

1. Non-Use of lead for plasma panels (world's first)
2. Non-Use of vinyl chloride resins for internal wires
3. Annual power consumption: Reduced by approx. 41% (compared with the conventional model, TH-50PX300)
4. Long lifetime design of LCD panel: Approx. 60,000 hours
5. Brightness sensor: Automatic picture brightness control according to room brightness
6. Power consumption switching mode: Peak brightness down with bright seans by setting
7. Automatic power off: In case of no signals for more than ten minutes or no directions for more than three hours

**Matsushita Electric Industrial Co., Ltd.**  
**Panasonic AVC Networks Company**

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Tel 81-6-6905-5758 Fax 81-6-6905-5927  
E-mail  
URL <http://panasonic.jp/tv/>



Plasma-TV "VIERA" : TH-50PX70

Available in : Japan

## Eco-products

EP-1-086

Home electric appliances / Lightings

liquid crystal television receivers

### "REAL" - A LCD television having various energy saving functions

-----<< E : Energy >>-----

- (1) "Brightness sensor" detects the brightness of the room automatically and controls the brightness of the screen ideally.
- (2) There are various functions for consumption electricity savings.
  - "Electric energy saving mode" holds down the brightness of the screen and saves consumption electricity.
  - "No operation economy in power consumption mode", switches it off automatically when it was not operated for about 3 hours.
  - "No signal economy in power consumption mode" switches it off automatically when it passed for about 10 minutes as soon as broadcast was finished and back video signal cried.
  - "Sensor economy in power consumption mode" cuts a power supply automatically about 6 seconds later after a room becomes dark.
  - "Delete picture mode" deletes a screen and outputs only a sound.
- (3) It is designed to consume absolutely 0W when the main power supply is off.

-----<< M : Material >>-----

It adopts recycled styrene in the stands

-----<< T : Toxicity >>-----

Does not use any substances subject to the EU's RoHS Directive or JIS's J-Moss

**Mitsubishi Electric Corporation**

2-7-3, Marunouchi Chiyoda-ku, Tokyo 100-8310, Japan  
Tel 81-3-3218-9024 Fax 81-3-3218-2465  
E-mail [eqd.eco@pj.MitsubishiElectric.co.jp](mailto:eqd.eco@pj.MitsubishiElectric.co.jp)  
URL [www.MitsubishiElectric.co.jp](http://www.MitsubishiElectric.co.jp)



"REAL" LCD-H52MZ75

Available in : Japan

## Eco-products

EP-1-087

Home electric appliances / Lightings

television receivers, except liquid crystal receivers

### Plasma Display Television

The visual experience of HD is all about resolution-that is, the number of lines and pixels on the screen. Hitachi's revolutionary ALIS Panel serves as the canvas on which the colors and shapes of the visual artist are painted.

- Product features
  - High resolution full HD panel for digital HD broadcast.
  - Just insert the removable HDD 「iVDR-S」 into 「iV pocket」 for easy recording and increasing capacity.
  - Reproduces 24-exposure films to smooth motion pictures.
- Environment consideration
  - Adapted to RoHS.
  - Use of non halogen plastic material for the cabinet part.
  - 「Low power consumption mode」 feature, can adjust screen brightness.
  - 「Automatic power off」 feature, after certain period of no operation and receipt of no signals, the power will be cut automatically.
  - Using eco paint to reduce VOC materials.
  - Encouraging the use of ester alcohol materials instead of toluene and xylene (VOC) for environment consideration.



P50-XR01

**Hitachi, Ltd.,**

292 Yoshida-cho, Totsuka-ku, Yokohama 244-0817, Japan  
 Tel 81-45-866-6152 Fax 81-45-866-5920  
 E-mail  
 URL <http://av.hitachi.co.jp>

## Eco-products

EP-1-088

Home electric appliances / Lightings

hi-definition plasma TV

### Hi-Definition Plasma TV with minimum power consumption and lightest weight

This High Definition Plasma Television achieved a high quality picture and low power consumption by our various unique advanced technologies. High contrast of jet-black and bright color is realized by developing the crystal emissive layer and the new electron source. At the same time, the high efficiency luminescence achieved the industry's minimum level of rated power consumption of 368W. In addition, its energy saving mode function enables you to view it without budget concerns even for a long period of time. Moreover, the development of direct filter realized the extremely low reflection to the display panels resulting the high quality regardless the viewing environment, and also the reduction of use of filter glasses brings the lowest class of weight in the industry.

※1. Resources from the research on 50-inch PDPs for Japan as of August 2, 2007 provided by Pioneer



PDP-508HX

**PIONEER CORPORATION**

545-57 Ogura, Saiwai-ku, Kawasaki-shi, Kanagawa-ken 212-0054, Japan  
 Tel 81-44-580-4275 Fax  
 E-mail [products\\_eco@post.pioneer.co.jp](mailto:products_eco@post.pioneer.co.jp)  
 URL <http://www//pioneer.jp>

## Eco-products

EP-1-089

Home electric appliances / Lightings

hi-definition plasma TV

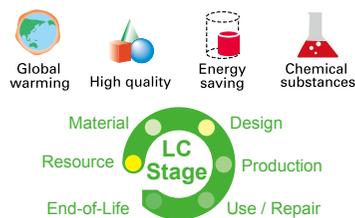
### Hi-Definition Plasma TV with minimum power consumption and high quality picture

This High Definition Plasma Television achieved a high quality picture and low power consumption by our various unique advanced technologies. High contrast of jet-black and bright color is realized by developing the crystal emissive layer and the new electron source. At the same time, the high efficiency luminescence achieved the industry's minimum level of rated power consumption of 296W. In addition, its energy saving mode function enables you to view it without budget concerns even for a long period of time. Moreover, the development of direct filter realized the extremely low reflection to the display panels resulting the high quality regardless the viewing environment, and also the reduction of use of filter glasses brings the lowest class of weight in the industry.

※1. Resources from the research on 42-inch PDPs for Japan as of August 2, 2007 provided by Pioneer

#### PIONEER CORPORATION

545-57 Ogura, Saiwai-ku, Kawasaki-shi, Kanagawa-ken 212-0054, Japan  
Tel 81-44-580-4275 Fax  
E-mail products\_eco@post.pioneer.co.jp  
URL <http://www.pioneer.jp>



PDP-428HX

## Eco-products

EP-1-090

Home electric appliances / Lightings

liquid crystal TV receivers

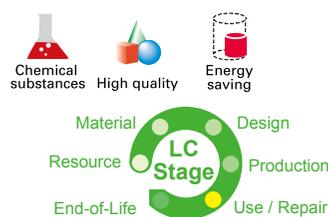
### Hi-vision LCD-TV "VIERA" LX70 Series (20/23)

Wide view angle, high definition and high quality picture LCD-TV

- Wide view angle, space saving and high quality
  - "VIERA LINK" making possible a remote controle of Panasonic's DVDs and AV amps by controle signals with HDMI cables
  - Under speaker type
1. Annual power consumption: Reduced by approx. 23/17% (20/23 inches, compared with the conventional model, TH-20/23LX60)
  2. Non-Use of vinyl chloride resins for internal wires
  3. Long lifetime design of LCD panel: Approx. 60,000 hours
  4. Brightness sensor: Automatic picture brightness control according to room brightness
  5. Power consumption switching mode: Peak brightness down with bright seans by setting
  6. Automatic power off: In case of no signals for more than ten minutes or no directions for more than three hours

#### Matsushita Electric Industrial Co., Ltd. Panasonic AVC Networks Company

1-15 Matsuo-cho, Kadoma, Osaka 571-8504, Japan  
Tel 81-6-6905-5758 Fax 81-6-6905-5927  
E-mail  
URL <http://panasonic.jp/tv/>



LCD-TV : TH-23LX70

Available in : Japan

## Eco-products

EP-1-091

Home electric appliances / Lightings

liquid crystal TV receivers

### Hi-vision LCD-TV "VIERA" LX70 Series (26/32)

Wide view angle, high definition and high quality picture LCD-TV

- Wide view angle, space saving and high quality
- "VIERA LINK" making possible a remote controle of Panasonic's DVDs and AV amps by controle signals with HDMI cables
- Under speaker type

1. Annual power consumption: Reduced by approx. 26/13% (26/32 inches, compared with the conventional model, TH-26/32LX60)
2. Non-Use of vinyl chloride resins for internal wires
3. Long lifetime design of LCD panel: Approx. 60,000 hours
4. Brightness sensor: Automatic picture brightness control according to room brightness
5. Power consumption switching mode: Peak brightness down with bright seans by setting
6. Automatic power off: In case of no signals for more than ten minutes or no directions for more than three hours

**Matsushita Electric Industrial Co., Ltd.**  
**Panasonic AVC Networks Company**

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Tel 81-6-6905-5758 Fax 81-6-6905-5927  
E-mail  
URL <http://panasonic.jp/tv/>



LCD-TV "VIERA" : TH-32LX70

Available in : Japan

## Eco-products

EP-1-092

Home electric appliances / Lightings

liquid crystal TV receivers

### Hi-vision LCD-TV "VIERA" LX75S Series (26/32)

LCD-TV for better reproduction of 3D and fast-moving images

- Wide view angle, space saving and high quality
- "VIERA LINK" making possible a remote controle of Panasonic's DVDs and AV amps by controle signals with HDMI cables
- Side speaker type

1. Annual power consumption: Reduced by approx. 23/23% (26/32 inches, compared with the conventional model, TH-26/32LX65)
2. Non-Use of vinyl chloride resins for internal wires
3. Long lifetime design of LCD panel: Approx. 60,000 hours
4. Brightness sensor: Automatic picture brightness control according to room brightness
5. Power consumption switching mode: Peak brightness down with bright seans by setting
6. Automatic power off: In case of no signals for more than ten minutes or no directions for more than three hours

**Matsushita Electric Industrial Co., Ltd.**  
**Panasonic AVC Networks Company**

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E-mail  
URL <http://panasonic.jp/tv/>



LCD-TV "VIERA" : TH-32LX75S

Available in : Japan

## Eco-products

EP-1-093

Home electric appliances / Lightings

liquid crystal TV receivers

### 65/57/52/46/42V-inch Terrestrial/BS/CS110 Digital HD LCD TV

#### RX1series

High definition TV, equipped with Full high-definition Resolution (1920x1080 pixels) liquid crystal panel and Double-speed 120-Hz frame rate conversion LCD technology. (boasts a high contrast ratio of 3,000:1)

AQUOS is an energy-efficient, space- and resource-saving product and minimizes harmful substances in its parts, and uses recycled materials.

#### Environmental performance of AQUOS

- Backlight life is about 60,000 hours.
- TV stand using 20% recycled material
- Closed-loop material recyclable rear cabinet \*<sup>1</sup>
- Non-halogen cabinet
- Lead-free solder circuit board
- Hexavalent chromium-free sheet steel
- Non-halogen power cords and inner cables
- Hexavalent chromium-free fasteners (nuts and bolts)

In addition, we have developed world-first technology for painting the plastic parts of consumer electronics with plant-based paint made from corn. That technology is used for the stand of these models.

\*<sup>1</sup> without 65/57 inch model

#### SHARP CORPORATION

22-22 Nagaike-cho, Abeno-ku, Osaka 545-8522, Japan  
 Tel 81-6-6625-0434 Fax 81-6-6625-0153  
 E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
 URL <http://www.sharp.co.jp>



Products/Model: AQUOS LCD TV LC-65RX1W

## Eco-products

EP-1-094

Home electric appliances / Lightings

liquid crystal TV receivers

### 52/46/42/37V-inch Terrestrial/BS/CS110 Digital HD LCD TV

#### GX3 series

High definition TV, equipped with Full high-definition Resolution (1920x1080 pixels) liquid crystal panel and Double-speed 120-Hz frame rate conversion LCD technology. (Slim, Compact design)

AQUOS is an energy-efficient, space- and resource-saving product and minimizes harmful substances in its parts, and uses recycled materials.

#### Environmental performance of AQUOS

- Backlight life is about 60,000 hours.
- TV stand using 20% recycled material
- Closed-loop material recyclable rear cabinet (without LC-37GX3)
- Non-halogen cabinet
- Lead-free solder circuit board
- Hexavalent chromium-free sheet steel
- Non-halogen power cords and inner cables
- Hexavalent chromium-free fasteners (nuts and bolts)

In addition, we have developed world-first technology for painting the plastic parts of consumer electronics with plant-based paint made from corn. That technology is used for the stand of these models

#### SHARP CORPORATION

22-22 Nagaike-cho, Abeno-ku, Osaka 545-8522, Japan  
 Tel 81-6-6625-0438 Fax 81-6-6625-0153  
 E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
 URL <http://www.sharp.co.jp/>



Products/Model: AQUOS LCD TV LC-37BD1W/32BD1/26BD1

## Eco-products

EP-1-095

Home electric appliances / Lightings

liquid crystal TV receivers

### 52/46/42/37V-inch Terrestrial/BS/CS110 Digital HD LCD TV

#### GX4 series

High definition TV, equipped with Full high-definition Resolution (1920x1080 pixels) liquid crystal panel and Double-speed 120-Hz frame rate conversion LCD technology.(Slim,Compact design)

AQUOS is an energy-efficient, space- and resource-saving product and minimizes harmful substances in its parts, and uses recycled materials.

Environmental performance of AQUOS

- Backlight life is about 60,000 hours.
- TV stand using 20% recycled material
- Closed-loop material recyclable rear cabinet(except LC-37GX4).
- Non-halogen cabinet
- Lead-free solder circuit board
- Hexavalent chromium-free sheet steel
- Non-halogen power cords and inner cables
- Hexavalent chromium-free fasteners (nuts and bolts)

In addition, we have developed world-first technology for painting the plastic parts of consumer electronics with plant-based paint made from corn. That technology is used for the stand of these models.

#### SHARP CORPORATION

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 URL <http://www.sharp.co.jp/>



Available in :

Products/Model:AQUOS LCD TV LC-52GX4W

## Eco-products

EP-1-096

Home electric appliances / Lightings

liquid crystal TV receivers

### 42/37/32V-inch Terrestrial/BS/CS110 Digital HD LCD TV

#### DS3 series

High definition TV, equipped with Full high-definition Resolution (1920x1080 pixels) liquid crystal panel and Double-speed 120-Hz frame rate conversion LCD technology.(Stylish design)

AQUOS is an energy-efficient, space- and resource-saving product and minimizes harmful substances in its parts, and uses recycled materials.

Environmental performance of AQUOS

- Backlight life is about 60,000 hours.
- TV stand using 20% recycled material
- Non-halogen cabinet
- Lead-free solder circuit board
- Hexavalent chromium-free sheet steel
- Non-halogen power cords and inner cables
- Hexavalent chromium-free fasteners (nuts and bolts)

#### SHARP CORPORATION

22-22, Nagaike-cho, Abeno-ku, Osaka 545-8522, Japan  
 Tel 81-6-6625-0438 Fax 81-6-6625-0153  
 E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
 URL <http://www.sharp.co.jp/>



Products/Model:AQUOS LCD TV LC-42DS3-B(Black)

## Eco-products

EP-1-097

Home electric appliances / Lightings

liquid crystal TV receivers

### 32/26V-inch Terrestrial/BS/CS110 Digital HD LCD TV

#### GH4 series

High definition TV, equipped with high-definition Resolution (1366x768 pixels) liquid crystal panel and Double-speed 120-Hz frame rate conversion LCD technology.

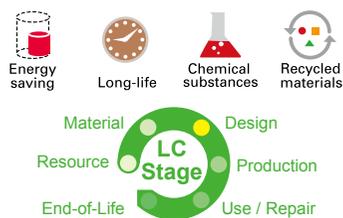
AQUOS is an energy-efficient, space- and resource-saving product and minimizes harmful substances in its parts, and uses recycled materials.

#### Environmental performance of AQUOS

- Backlight life is about 60,000 hours.
- Stand using 20% recycled material
- Non-halogen cabinet
- Lead-free solder circuit board
- Hexavalent chromium-free sheet steel
- Non-halogen power cords and inner cables
- Hexavalent chromium-free fasteners (nuts and bolts)

#### SHARP CORPORATION

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 Tel 81-6-6625-0438 Fax 81-6-6625-0153  
 E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
 URL <http://www.sharp.co.jp/>



Products/Model:AQUOS LCD TV LC-32GH3

## Eco-products

EP-1-098

Home electric appliances / Lightings

liquid crystal TV receivers

### 32/26V-inch Terrestrial/BS/CS110 Digital HD LCD TV

#### GH4 series

High definition TV, equipped with high-definition Resolution (1366x768 pixels) liquid crystal panel and Double-speed 120-Hz frame rate conversion LCD technology.

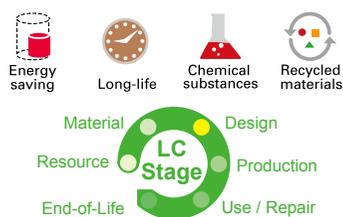
AQUOS is an energy-efficient, space- and resource-saving product and minimizes harmful substances in its parts, and uses recycled materials.

#### Environmental performance of AQUOS

- Backlight life is about 60,000 hours.
- Stand using 20% recycled material
- Non-halogen cabinet
- Lead-free solder circuit board
- Hexavalent chromium-free sheet steel
- Non-halogen power cords and inner cables
- Hexavalent chromium-free fasteners (nuts and bolts)

#### SHARP CORPORATION

22-22, Nagaike-cho, Abeno-ku, Osaka 545-8522, Japan  
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 URL <http://www.sharp.co.jp/>



Products/Model:AQUOS LCD TV LC-32GH4

## Eco-products

EP-1-099

Home electric appliances / Lightings

liquid crystal TV receivers

### 32/26/20V-inch Terrestrial/BS/CS110 Digital HD LCD TV

#### D10 series

High definition TV, equipped with high-definition Resolution (1366x768 pixels) liquid crystal panel.

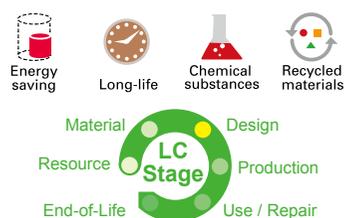
AQUOS is an energy-efficient, space- and resource-saving product and minimizes harmful substances in its parts, and uses recycled materials.

#### Environmental performance of AQUOS

- Backlight life is about 60,000 hours.
- Stand using 20% recycled material
- Non-halogen cabinet
- Lead-free solder circuit board
- Hexavalent chromium-free sheet steel
- Non-halogen power cords and inner cables
- Hexavalent chromium-free fasteners (nuts and bolts)

#### SHARP CORPORATION

22-22, Nagaike-cho, Abeno-ku, Osaka 545-8522, Japan  
 Tel 81-6-6625-0438 Fax 81-6-6625-0153  
 E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
 URL <http://www.sharp.co.jp/>



Products/Model:AQUOS LCD TV LC-32D10-W(White)

## Eco-products

EP-1-100

Home electric appliances / Lightings

liquid crystal TV receivers

### 16V-inch Terrestrial/BS/CS110 Digital HD LCD TV

#### E1 series

High definition TV, equipped with high-definition Resolution (1366x768 pixels) liquid crystal panel (Small/Personal use)

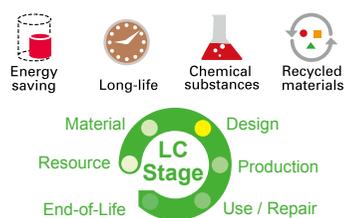
AQUOS is an energy-efficient, space- and resource-saving product and minimizes harmful substances in its parts, and uses recycled materials.

#### Environmental performance of AQUOS

- Backlight life is about 60,000 hours.
- Stand using 20% recycled material
- Non-halogen cabinet
- Lead-free solder circuit board
- Hexavalent chromium-free sheet steel
- Non-halogen power cords and inner cables
- Hexavalent chromium-free fasteners (nuts and bolts)

#### SHARP CORPORATION

22-22, Nagaike-cho, Abeno-ku, Osaka 545-8522, Japan  
 Tel 81-6-6625-0438 Fax 81-6-6625-0153  
 E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
 URL <http://www.sharp.co.jp/>



Products/Model:AQUOS LCD TV LC-16E1-R(Red)

## Eco-products

EP-1-101

Home electric appliances / Lightings

liquid crystal TV receivers

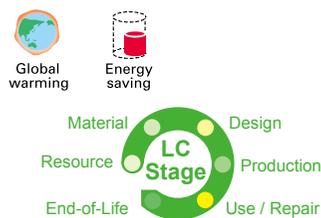
### Realizing brilliant pictures with low energy consumption. "BRAVIA" LCD televisions

The BRAVIA V5000 series of LCD televisions feature the Live Color Creation backlight system, which widens the color gamut and creates high-purity primary colors (cyan, yellow and magenta), thereby enabling these televisions to deliver true-to-life color while keeping power consumption to a minimum. The BRAVIA V5000 series's televisions are also equipped with an Advanced Contrast Enhancer, which automatically adjusts backlight intensity in response to the brightness of the image, as well as a Light Sensor, which adjusts the screen brightness in response to ambient brightness. Thanks to such features, the KDL-52V5000 model has achieved 170% for the energy-conservation standard of the energy-saving laws in Japan, and has attained the industry's highest energy-saving performance.\*1

※1 As of December 2007, comparison is with digital LCD televisions sold in the Japanese market and based on Sony data.

#### Sony Corporation

1-7-1 Konan Minato-ku, Tokyo 108-0075, Japan  
Tel 81-3-6748-2111 Fax 81-3-6748-2244  
E-mail  
URL <http://www.sony.net>



Terrestrial/BS/110 CS digital high-definition television BRAVIA KDL-52V5000

## Eco-products

EP-1-102

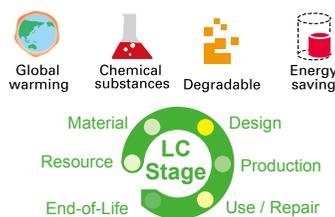
Home electric appliances / Lightings

liquid crystal TV receivers

### Liquid crystal television "REGZA" in which the beauty and the environment is compatible.

"REGZA -37C3500" is simple high-resolution model of the Toshiba liquid crystal television. The user can enjoy the beauty of expanding image, because this television has "the interlock force" as well as "the description force".

- **Energy Saving:** Annual power consumption is equivalent to that of WXGA in spite of full HD.
- **Resource Saving:** The weight of a set was reduced by 18 % owing to minimal design.



#### TOSHIBA CORPORATION Digital Media Network Company

1-9-2, Hatara-cho, Fukaya-Shi, Saitama 366-8510, Japan  
Tel 81-48-574-2532 Fax 81-48-572-8120  
E-mail [tooru.hirata@toshiba.co.jp](mailto:tooru.hirata@toshiba.co.jp)  
URL <http://www.toshiba.co.jp>

37C3500

## Eco-products

EP-1-103

Home electric appliances / Lightings

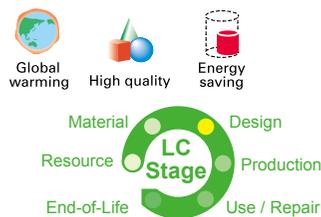
liquid crystal TV receivers

### LCD Television

The UT series is designed to free customers from restrictions of where to place the TV. The monitor of the UT series, which is 35 mm thin, is more than just a TV suitable to be hung on a wall.

By separating the Wooo station from the monitor, the UT series provides consumers with a range of options for placement throughout the home, as well as ease in connecting with other consumer electronic equipments.

The body design increased 20% of transport efficiency compared to the current model and consequently reduced the emissions.



#### Hitachi,Ltd.,

292 Yoshida-cho, Totsuka-ku, Yokohama 244-0817, Japan  
 Tel 81-45-866-6152 Fax 81-45-866-5920  
 E-mail  
 URL <http://av.hitachi.co.jp>



UT32-HV700

## Eco-products

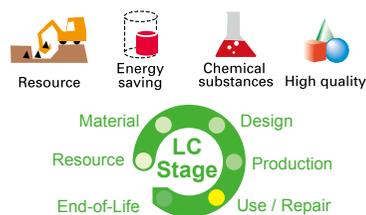
EP-1-104

Home electric appliances / Lightings

OLED (organic light-emitting diode) TV

### World's first OLED (organic light-emitting diode) TV "XEL-1"

As OLEDs are light-emitting, there is no need for an additional light source such as a backlight system. Sony's "Organic Panel" consists of an organic material layer of just several hundred nanometers thickness, with two extremely thin glass panels aligned on either side of the organic material layer. This realizes a new TV form factor measuring approximately 3mm at its thinnest point, and contributes to saving energy as well. OLED does not require a separate light source, therefore it can be powered using very low voltages. This means that OLED TVs consume extremely low levels of power compared with other display devices. As a result, the power consumption of this product is as low as 45W. In addition, this model does not use mercury generally included in the backlight.



#### Sony Corporation

1-7-1 Konan Minato-ku, Tokyo 108-0075, Japan  
 Tel 81-3-6748-2111 Fax 81-3-6748-2244  
 E-mail  
 URL <http://www.sony.net>



OLED (organic light-emitting diode) TV "XEL-1"

## Eco-products

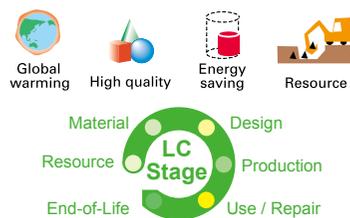
EP-1-105

Home electric appliances / Lightings

stereo sets

### SD Stereo System, D-dock SX950

- Achieved stand-by power consumption of 0.1W due to low power circuit technology.
- Circuits have been integrated to promote energy saving, and compactness and light weight of circuit boards and fundamental parts have been improved.
- Non-Use of Specific Chemical Substances\*  
(\* : Lead, mercury, cadmium, hexavalent chromium, two specific brominated flame retardants, designated by the EU RoHS Directive.)



**Matsushita Electric Industrial Co., Ltd.**  
**Panasonic AVC Networks Company**

1-15 Matsuo-cho, Kadoma, Osaka 571-8504, Japan  
Tel 81-6-6905-8356 Fax 81-6-6905-4755  
E-mail  
URL <http://panasonic.co.jp/pavc/>



Available in : Japan

SD Stereo System : SC-SX950

## Eco-products

EP-1-106

Home electric appliances / Lightings

stereo sets

### Mini Hi-Fi system using recycled polystyrene, FST-ZUX9 and LBT-ZUX10D

FST-ZUX9 and LBT-ZUX10D mini Hi-Fi systems use high-quality recycled polystyrene made from used plastic inside the products. This recycled polystyrene accounts for 5% by total weight of the product.



**Sony Corporation**

1-7-1 Konan Minato-ku, Tokyo 108-0075, Japan  
Tel 81-3-6748-2111 Fax 81-3-6748-2244  
E-mail  
URL <http://www.sony.net>



FST-ZUX9 uses recycled plastic

## Eco-products

EP-1-107

Home electric appliances / Lightings

digital photo printers

### Digital Photo Printer DPP-FP70/90

While PVC currently is not regulated by any laws that apply to chemical substances used in electronics products, Sony is working to eliminate PVC wherever a viable alternative is available. For example, Sony has succeeded in eliminating PVC from the casing and packaging materials used for its products. In addition, Sony has switched to Polyolefin materials for certain power cables, AC adapter cords and electrical cords used in its products. Sony plans to substitute PVC in all new models of Mobile products (excluding accessories) by the end of fiscal 2010, provided that the substitute meets all product quality and technical requirements.



Digital Photo Printer DPP-FP70

#### Sony Corporation

1-7-1 Konan Minato-ku, Tokyo 108-0075, Japan  
Tel 81-3-6748-2111 Fax 81-3-6748-2244  
E-mail  
URL <http://www.sony.net>

## Eco-products

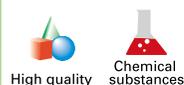
EP-1-108

Home electric appliances / Lightings

electric bicycle

### Electric Hybrid Bicycle CY-SPE26DK

- 1) New Auto Mode (Auto Controll Assist & Auto Recharge System) Auto Mode is smart automatic control program. No lose the feeling of assistance and Extend mileage. Mileage can be extended about 70%\* compared with Standard Mode w/o using regeneration charge.  
\* At continuous running by "SANYO standard pattern"
- 2) The regenerative break charge system.
- 3) The new S character frame which had a cord and a wire built-in.
- 4) Adoption of lead-free solder.
- 5) Abolition of foamed polystyrene for packaging.



CY-SPE26DK

#### SANYO Electric Co., Ltd.

1-1, Seta, 1-chome, Otsu City, Shiga 520-2134, Japan  
Tel 81-77-543-5671 Fax 81-77-543-5618  
E-mail [hira074299@sanyo.co.jp](mailto:hira074299@sanyo.co.jp)  
URL <http://www.sanyo.co.jp/>

## Eco-products

EP-1-109

Home electric appliances / Lightings

air purifiers

### Air purifier using Plasmacluster ion technology

Newly developed 'Plasmacluster Ion Shower' inactivates airborne mold fungi and harmful bacteria as well as removes drifting house dust in interior spaces by releasing a burst of powerful Plasmacluster Ions in a shower-like pattern into the air.

DC motor and inverter control contribute to reduce energy consumption and achieve an annual electric bill of about 390 JP yen. (This is calculated based on power consumption during silent running and power charge per unit of 22 yen/kWh (tax included) as a rough standard.) Standby power consumption is 0.3W. We have eliminated the use of specific brominated flame retardant. Vegetative soy ink and recycled paper are used for the instruction manual. We also applied lead-free solder to the circuit board and a bicapsular cable cord to allow the product to be placed on the floor.



Air Purifier FU-U53CX-W

#### SHARP CORPORATION

22-22, Nagaike-cho, Abeno-ku, Osaka-shi, Osaka 545-8522, Japan  
 Tel 81-6-6625-0438 Fax 81-6-6625-0153  
 E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
 URL <http://www.sharp.co.jp>

## Eco-products

EP-1-110

Home electric appliances / Lightings

water purifiers

### Alkaline Ion Water Purifier of low standby power consumption

<Product Features>

- Water-saving design reduces 70% drainage\*, save water of 1.7t annually. (\*compared with TK7505)
- 13 substances regulated by the JIS standard are removed.
- Standby power consumption is decreased 85% compared with the conventional model. (1.4W → 0.2W)



Alkaline Ion Water Purifier : TK7507-W

#### Matsushita Electric Works, Ltd.

1048 Kadoma, Kadoma, Osaka 571-8686, Japan  
 Tel 81-6-6908-1131 Fax  
 E-mail  
 URL <http://national.jp/product/health/alkaline/>

Available in : Japan

## Eco-products

EP-1-111

Home electric appliances / Lightings

high definition wireless link set

### High Definition Wireless Link Set "LF-W1HD"

Materials mixed with recycled plastics are used in exterior frame, cases for each pair and stand of this product. Moreover, recycled plastic mixed with waste CD is used in the top cover. Sony proactively promotes to use recycled plastic materials in order to reduce the amount of exhaustible resource newly used. Regarding recycled plastic, waste CDs, unsold or sample CDs generated in CD manufacturing processes within Sony Group and CDs collected via distribution network of Sony affiliate companies are processed into the basic recycled plastic material using a proprietary method (crushing and removing the surface coating) developed by Sony Music Manufacturing Inc. Blended with other resin and additives, the basic recycled plastic is compounded with glossy black flame-retardant recycled plastic.



High Definition Wireless Link Set "LF-W1HD"

#### Sony Corporation

1-7-1 Konan Minato-ku, Tokyo 108-0075, Japan  
Tel 81-3-6748-2111 Fax 81-3-6748-2244  
E-mail  
URL <http://www.sony.net>

## Eco-products

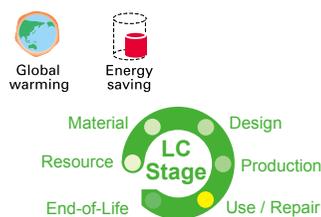
EP-1-112

Home electric appliances / Lightings

water heaters

### Heat Pump Water Heater for Home Use

- High performance with the adoption of a newly developed heat pump unit as well as Hitachi's original direct connection water supply system.
- A highly reliable, original heat exchanger and the newly developed heat pump unit are integrated. As a result, compared to conventional models, the product saves about a week equivalent of power consumption over a year.
- Improved ease of use with the adoption of a voice-function-equipped LCD remote control. The display equipped with a white LCD is easy to see. In addition, the product is equipped with a "Kindness mode" which informs the user of the contents of operations by voice and screen display and an "Tell-me" button, which informs the user of the current settings by voice.
- Improved ease of delivery with the adoption of a round form for the hot-water storage tank unit. The hot-water storage tank unit has a round form. Moreover, tank unit thinnest in the home appliance industry sector, with a width of 415 mm, has realized easy installation even in small spaces. Furthermore, the tank is about ten percent lighter than a conventional model and handles inside the bottom pillars are newly equipped, both of which improve easiness of delivery.



BHP-FS37ED (For Japanese Market)

#### Hitachi Appliances, Inc.

Hitachi Atago Bldg., 15-12, Nishi shimbashi 2-chome, Minato-ku, Tokyo 105-8410, Japan  
Tel 81-3-3502-2111 Fax  
E-mail  
URL <http://www.hitachi-ap.co.jp/>

## Eco-products

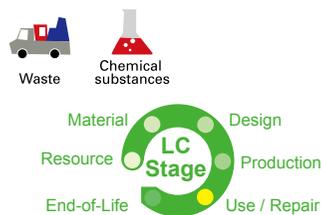
EP-1-113

Home electric appliances / Lightings

disposers

### Home Garbage Disposers

- It can reduce the volume of 400g of garbage to about 1/7 of the original volume in approximately 85 minutes.
- Compliance with the RoHS Directive by alternating materials and parts with those having less environmental impacts.



ECO-V30 (For Japanese Market)

#### Hitachi Appliances, Inc.

Hitachi Atago Bldg., 15-12, Nishi shimbashi 2-chome, Minato-ku, Tokyo  
105-8410, Japan  
Tel 81-3-3502-2111 Fax  
E-mail  
URL <http://www.hitachi-ap.co.jp/>

## Eco-products

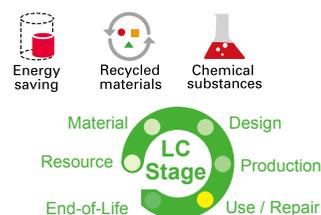
EP-1-114

Home electric appliances / Lightings

air purifiers

### Air Purifier with Humidifying Operation

- Reduced power consumption through the adoption of an inverter motor and wing turbofan.
- Odor absorbent composed of artificial zeolite that is manufactured from incineration ash produced through thermal power generation.
- Compliance with the RoHS Directive by alternating materials and parts with those having less environmental impacts



EP-BV60 (For Japanese Market)

#### Hitachi Appliances, Inc.

Hitachi Atago Bldg., 15-12, Nishi shimbashi 2-chome, Minato-ku, Tokyo  
105-8410, Japan  
Tel 81-3-3502-2111 Fax  
E-mail  
URL <http://www.hitachi-ap.co.jp/>

## Eco-products

EP-1-115

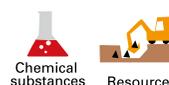
Home electric appliances / Lightings

dishwashers

### Steam engine-mounted dish washer of high detergency and low noise

Feature of this product is that the great detergency was realized by the installation of a steam engine. As for this machine model, low noise driving (about 35 dB) is possible, so the user can spend a relaxed time after meal. Since three slides and folding pins were adopted for convenience, it is easy to set various tableware.

- **Energy Saving:** Total expense of water service, detergent and electricity is lower than half of that of the hand washing.
- **Resource Saving:** Water consumption is about 1/9 in comparison with the hand washing.



#### TOSHIBA HOME APPLIANCES CORPORATION

991, Anada-Cho, Seto-Shi, Aichi 489-8610, Japan

Tel Fax

E-mail

URL [http://www.toshiba.co.jp/index\\_j3.htm](http://www.toshiba.co.jp/index_j3.htm), <http://www.toshiba.co.jp/tcm/>

Available in : Japan

DWS-600B

## Eco-products

EP-1-116

Home electric appliances / Lightings

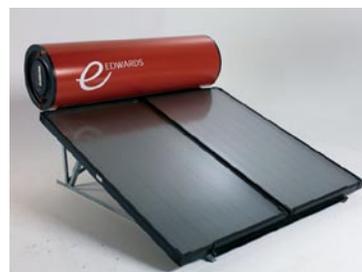
solar heater

### Solar Hot Water Heater

In view of the abundant solar energy freely available in the tropics (1,600kwh per sq. metre per year) we believe that harnessing the solar energy is the best way in meeting today's energy needs. SOLAR HEATERS will not only benefit the global environment but is cost effective to customers in their electricity savings. Solar Hot Water Heaters is use for bathing, cooking, washing, heating of pools, and other hot water applications.

Edwards and Thermomax use the latest Solar Absorber technology material TINOX (titanium oxide) for their solar collectors. TINOX absorbs 95% solar radiation and minimize energy loss with an emission of only 5%. Once the solar energy is converted into heat, the energy remains captured in the TINOX absorber which heats the water. Efficiency of TINOX solar collectors has reached 80% and it works even on cloudy and rainy days.

Solar Commercial Hot Water Systems are installed in Singapore which include the Changi International Airport Services Ltd (CIAS) flight kitchen currently the largest solar hot water system in South East Asia.



#### CONNECTIONS INTERNATIONAL PTE LTD

No.2 Soon Wing Road #06-02 Soon Wing Ind. Bldg., 347893, Singapore

Tel 65-6483-1031 Fax 65-6483-5343

E-mail [connect@connections.com.sg](mailto:connect@connections.com.sg)

URL <http://www.connections.com.sg>

Available in : Singapore, Australia

EDWARDS L305

## Eco-products

EP-1-117

Home electric appliances / Lightings

power meter

### HMM3702AC™ Power Meter

HMM 3702AC™ Power Meter measures wide range of AC electrical parameters, such as power, energy voltage and current. It is a low-cost, multi-function monitoring and control solution for domestic, commercial, industrial and power generation applications. The menus, measurements and control settings are displayed clearly on an LCD for ease of reading.

With proper power management, power from the grid, renewable energy sources, or any other power generation sources can be utilized effectively to optimize the electrical system performance.

#### The benefits of HMM 3702AC™ Power Meter

- Monitor energy consumption to control costs
- Enhance system performance and reduce downtime
- Analysis of energy usage for better load control

#### GRENZONE PTE LTD

51 Ayer Rajah Crescent, #06-16/17 139948, Singapore  
Tel 65-6872-2350 Fax 65-6872-5610  
E-mail [info@grenzone.com](mailto:info@grenzone.com)  
URL <http://www.grenzone.com>

Available in : Worldwide



HMM3702AC™ Power Meter

## Eco-products

EP-1-118

Home electric appliances / Lightings

portable DC power pack

### EcoPower Modular Power System

EcoPower is a truly integrated modular power system completes with high performance battery and controller than can be recharged by a wide range of electrical sources including photovoltaic. Designed with high safety and ruggedness to withstand harsh conditions and long operating life.

It is the power source of many wireless applications including lighting, telecommunication, security, marine, transport, recreational and emergency relief.

#### The benefits of EcoPower:

- Ease of use with plug and play switches
- Portable power pack
- Provide instant power in off-grid locations
- Rugged and handy

#### The Features:

- Integrated gel battery (600 cycle @50% DOD) with intelligent charge controller
- Rechargeable from PV and other power sources (AC-to-DC Adaptor, Car Cord Adaptor, Genset etc)
- Optimized battery charging algorithm to protect battery and increase efficiency
- Load control to prevent over discharge from battery
- Flexible mechanical mounting
- For indoor and mobile applications

#### GRENZONE PTE LTD

51 Ayer Rajah Crescent, #06-16/17 139948, Singapore  
Tel 65-6872-2350 Fax 65-6872-5610  
E-mail [info@grenzone.com](mailto:info@grenzone.com)  
URL <http://www.grenzone.com>

Available in : Worldwide



GZP 01212S EcoPower Switch

## Eco-products

EP-1-119

Home electric appliances / Lightings

fluorescent lamps

### Easily introduced high frequency inverter-type lighting equipment for institutions

-----<< E : Energy >>-----

As for the high frequency inverter-type lighting equipment, the illumination that 1.2 times are bright is provided with about 80% electricity in comparison with the conventional magnetism-type appliance.

"Easyeco" - more eco - series is high frequency inverter-type lighting equipments that enables to regulate brightness to three phases by the simple operation of the wall switch.

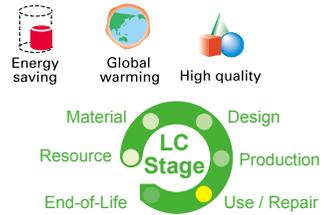
The three phases are 100% : Bright mode, 85% : eco mode, and 70% : more eco mode.

You do not need light control machinery nor wiring work of signal line when introducing light control.

The brightness under the "eco mode", which is about 30% energy saving, is equal with that of the conventional rapid-magnetism-type appliance.

#### Mitsubishi Electric Corporation

2-7-3, Marunouchi Chiyoda-ku, Tokyo 100-8310, Japan  
 Tel 81-3-3218-9024 Fax 81-3-3218-2465  
 E-mail eqd.eco@pj.MitsubishiElectric.co.jp  
 URL <http://www.mitsubishielectric.co.jp/>



三菱施設用照明器具  
 Easyeco KV4382EF VPTN

Available in : Japan

FHF32W for two lighting : KV4382EF VPTN

## Eco-products

EP-1-120

Home electric appliances / Lightings

air conditioners

### Air Purifier with a Humidification Function

The new air purifier with a humidification function is the compound machine equipped with a humidification function to an air purifier. The air purification adopts a machine type with the filter, and the humidification method adopts vaporization type.

-----<< M : Material >>-----

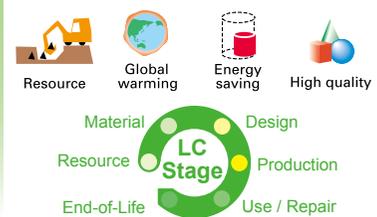
- (1) Space-saving resource saving by having made two articles 1 In comparison with one air purifier and one humidifier providing the same ability each, this air purifier reduced materials 37%.
- (2) It completely got rid of the filter exchange that was necessary for a conventional humidifier and air purifier. As for the dust-collection and the deodorization filter, a user does not need to change them because their performances are regenerated if he wash them. It has no humidification filter as it adopts the disk-type vaporization that is hard to be stucked to by the chlorine ingredient.

-----<< E : Energy >>-----

Commonizing a ventilation fan and, motor and the board of two articles, this air purifier reduced an annual electricity bill 20% and improved the total CO<sub>2</sub> discharge in the life cycle 16%.

#### Mitsubishi Electric Corporation

2-7-3, Marunouchi Chiyoda-ku, Tokyo 100-8310, Japan  
 Tel 81-3-3218-9024 Fax 81-3-3218-2465  
 E-mail eqd.eco@pj.MitsubishiElectric.co.jp  
 URL <http://www.mitsubishielectric.co.jp/>



Air Purifier MA-517DK-S

Available in : Japan

## Eco-products

EP-1-121

Home electric appliances / Lightings

electric refrigerators

### Energy saving refrigerator for families with excessive cooling technology

A refrigerator for families using excessive cooling technology. It refrigerates food deliciously as it prevents the destruction of the cell.

-----<< M : Material >>-----

It uses recycled plastic for a board case or a caster. It is made easy to be recycled by the materials indication of the resin part.

-----<< E : Energy >>-----

For consumption electricity 620kWh/year of the product (ME-G50M) one year ago, MR-G52N the capacity of it is increasing realizes 530kWh/year. It turned the compressor smoothly by the new control (named " the new smooth wave inverter ") and prevented outbreak of useless torque which improves energy saving and silence.

-----<< T : Toxicity >>-----

It uses non-Freon refrigerant isobutane R600a that global warming potential is extremely low.



MR-G57N-W

#### Mitsubishi Electric Corporation

2-7-3, Marunouchi Chiyoda-ku, Tokyo 100-8310, Japan  
 Tel 81-3-3218-9024 Fax 81-3-3218-2465  
 E-mail eqd.eco@pj.MitsubishiElectric.co.jp  
 URL <http://www.mitsubishielectric.co.jp/>

Available in : Japan

## Eco-products

EP-1-122

Home electric appliances / Lightings

LED spot light

### LED Spot Light

This spotlight is the lighting fixture with 4 LEDs (11W) realizing energy saving and long life and having brightness equivalent to low-volt halogen lamp 35W/50W.

-----<< E : Energy >>-----

1. Its spot effect is equivalent to that of low-volt halogen lamp 35W/50W and its CO<sub>2</sub> reduction rate is 68-78%.

2. Its life time is from 10 times to 13 times longer than that of low-volt halogen lamp.

Approximately 40000 hours of the life time through rearranging its heat radiation structure enables maintenance-free at retail store where the spot is used for long time.

3. UV and IR radiation, which causes color fading or damaging, do not exist.

The spot light does not harm the object because the light does not contain harmful components and heat.

4. Thin and soft innovative form utilizing LED feature.



#### Mitsubishi Electric Lighting Corporation

2-14-40, Ofuna, Kamakura-shi, Kanagawa 247-0056, Japan  
 Tel 81-467-41-2724 Fax 81-467-41-2788  
 E-mail eqd.eco@pj.MitsubishiElectric.co.jp  
 URL <http://www.mitsubishielectric.co.jp/group/mlf/>

Available in : Japan

LED Spot Light

## Eco-products

EP-2-001

Carriers / Automobiles

forklifts

### Electric Hybrid Forklift Trucks FB15HB

In recent years, even for forklifts, advances have rapidly emerged towards powering the vehicles with batteries so as not to release emissions. However, electric-powered vehicles have a number of shortcomings, such as short operating times between charges compared with engine-powered vehicles and long recharging.

To resolve these issues, Komatsu Utility Co., Ltd. launched electric hybrid forklift trucks that feature two systems for electrical power, with an electrical storage device known as a capacitor in addition to the conventional battery. A capacitor can quickly store the regenerative energy that is lost as heat in conventional electric-powered vehicles and save energy by up to 20%\*.

Existing electric-powered vehicles have had maximum continuous operating times of about six hours, while recharging has required ten hours. Electric hybrid forklifts employ rapid auxiliary charging by means of an inverter-type battery charger, and the FB15HB is capable of operating as long as 11hours\* after a one-hour rapid auxiliary charge.

\* : Varies according to operating conditions

#### Komatsu Utility Co., Ltd.

110 Yokokurashinden, Oyama-shi, Tochigi 323-8567, Japan  
Tel 81-285-28-8585 Fax 81-285-28-8734  
E-mail makoto\_kawase@komatsu-utility.co.jp  
URL <http://www.lift.co.jp/>



Electric Hybrid Forklift Trucks FB15HB

Available in : JAPAN

## Eco-products

EP-2-002

Carriers / Automobiles

buses

### Natural Gas Vehicle

Natural gas vehicle (NGV) is environment-friendly as it emits no PM / black exhaust and less NOx / CO<sub>2</sub> than gasoline or diesel vehicles. Because of these features, NGV plays an important role in reducing the world's dependency on oil.

As of the end of September 2007, the number of NGVs in Japan reached 33,000. Osaka Gas promotes the broader use of NGVs in its service area.



#### Osaka Gas Co., Ltd.

4-1-2, Hiranomachi, Chuo-ku, Osaka-shi, Osaka 541-0046, Japan  
Tel 81-6-6205-4605 Fax 81-6-6202-1040  
E-mail  
URL <http://www.osakagas.co.jp>

## Eco-products

EP-2-003

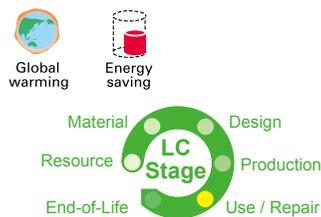
Carriers / Automobiles

automobiles

### New eco-friendly Prius with hybrid power

The new Prius model is equipped with THS, a new-generation Toyota Hybrid System known as Hybrid Synergy Drive, which means simultaneous evolution of ecology and power. It achieves world-beating fuel consumption of 35.5km/L and low emissions. The drive has been dramatically improved by the development of hybrid power. 10-15 mode drive.

(Ministry of land, Infrastructure and Transport figure)



#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
 Tel 81-565-23-1341 Fax 81-565-23-5754  
 E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
 URL <http://www.toyota.co.jp>



Prius

## Eco-products

EP-2-004

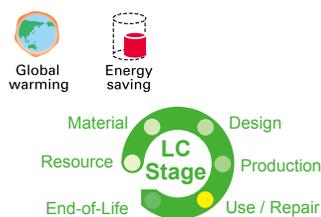
Carriers / Automobiles

automobiles

### TOYOTA Vitz with Idling Stop System

The Toyota Vitz is a CVT\* vehicle, featuring the Toyota Intelligent Idling Stop System which applies hybrid technology. We achieved the lowest domestic fuel consumption value of 22.5km/L, for a light car, excluding hybrids and improved fuel consumption by 8.5% compared with our current vehicle by using a lithium ion battery that allows automatic idling stop when the vehicle stops.

\*CVT: Continuously Variable Transmission



#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
 Tel 81-565-23-1341 Fax 81-565-23-5754  
 E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
 URL <http://www.toyota.co.jp>



ヴィッツ 1.0F <オプション装着車> 2005.2

Vitz

## Eco-products

EP-2-005

Carriers / Automobiles

automobiles

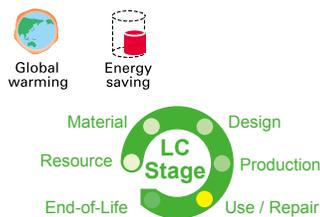
### TOYOTA FCHV

From the start of the fuel cell vehicle effort in 1992, Toyota has pursued development of its own fuel cell stack, the core component of any fuel cell vehicle. This high-performance fuel cell—the Toyota FC Stack—is a performance leader among vehicular fuel cells worldwide. In addition to the fuel cell, the FCHV has a secondary battery which stores energy regenerated during braking. When combined with the hybrid system which was first put to large-scale application in the Prius, the FCHV achieves highly efficient operation through sophisticated energy management.

(Fuel type) Hydrogen, (Max cruising range) 330km, (Max speed) 155km/h, (Weight) 1880kg, (Seating capacity) 5 persons.

#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
Tel 81-565-23-1341 Fax 81-565-23-1754  
E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
URL <http://www.toyota.co.jp>



TOYOTA FCHV

## Eco-products

EP-2-006

Carriers / Automobiles

automobiles

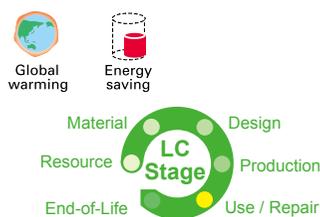
### Eco-friendly vehicle "TOYOTA CAROLLA Axio"

"TOYOTA CAROLLA Axio" clears the 2010 Fuel Efficiency Standards, and also achieves an exhaust emission level that is 75% lower than the 2010 Exhaust Emission Standards in the Ministry of Land.

- 1) Specific fuel consumption (10-15 Japanese test cycle): 18.2km/liter
- 2) Technology to reduce fuel consumption
  - High-efficiency transmission
  - Variable valve timing
  - Electric power steering system

#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
Tel 81-565-23-1341 Fax 81-565-23-5754  
E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
URL <http://www.toyota.co.jp>



Eco-friendly vehicle "TOYOTA CAROLLA Axio"

## Eco-products

EP-2-007

Carriers / Automobiles

automobiles

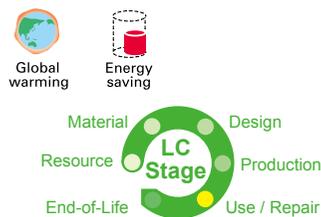
### Eco-friendly vehicle "TOYOTA CAROLLA FIELDER"

"TOYOTA CAROLLA FIELDER" clears the 2010 Fuel Efficiency Standards, and also achieves an exhaust emission level that is 75% lower than the 2005 Exhaust Emission Standards in the Ministry of Land.

- 1) Specific fuel consumption(10-15 Japanese test cycle): 18.0km/liter
- 2) Technology to reduce fuel consumption
  - High-efficiency transmission
  - Variable valve timing
  - Electric power steering system

#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
Tel 81-565-23-1341 Fax 81-565-23-5754  
E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
URL <http://www.toyota.co.jp>



Eco-friendly vehicle "TOYOTA CAROLLA FIELDER"

## Eco-products

EP-2-008

Carriers / Automobiles

automobiles

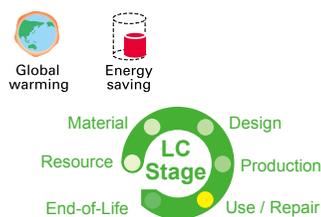
### Eco-friendly vehicle "TOYOTA AURIS"

"TOYOTA AURIS" clears the 2010 Fuel Efficiency Standards, and also achieves an exhaust emission level that is 75% lower than the 2005 Exhaust Emission Standards in the Ministry of Land.

- 1) Specific fuel consumption(10-15 Japanese test cycle): 17.2km/liter
- 2) Technology to reduce fuel consumption
  - High-efficiency transmission
  - Variable valve timing
  - Electric power steering system

#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
Tel 81-565-23-1341 Fax 81-565-23-5754  
E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
URL <http://www.toyota.co.jp>



Eco-friendly vehicle "TOYOTA AURIS"

## Eco-products

EP-2-009

Carriers / Automobiles

automobiles

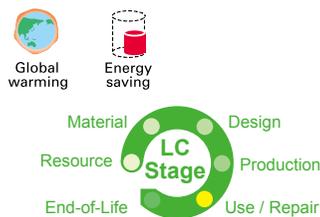
### Eco-friendly vehicle "TOYOTA CROWN ROYAL"

"TOYOTA CROWN ROYAL" clears the 2010 Fuel Efficiency Standards, and also achieves an exhaust emission level that is 75% lower than the 2010 Exhaust Emission Standards in the Ministry of Land.

- 1) Specific fuel consumption (10-15 Japanese test cycle): 12.0 km/liter
- 2) Technology to reduce fuel consumption
  - High-efficiency transmission
  - Variable valve timing
  - Electric power steering system
  - Direct injection 4 stroke gasoline engine
  - Battery charge control system

#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
Tel 81-565-23-1341 Fax 81-565-23-5754  
E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
URL <http://www.toyota.co.jp>



Eco-friendly vehicle "TOYOTA CROWN ROYAL"

## Eco-products

EP-2-010

Carriers / Automobiles

automobiles

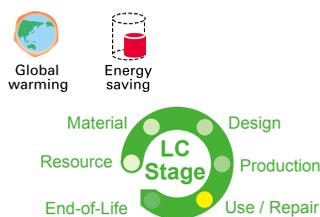
### Eco-friendly vehicle "TOYOTA MARK X"

"TOYOTA MARK X" clears the 2010 Fuel Efficiency Standards, and also achieves an exhaust emission level that is 75% lower than the 2010 Exhaust Emission Standards in the Ministry of Land.

- 1) Specific fuel consumption (10-15 Japanese test cycle): 12.0 km/liter
- 2) Technology to reduce fuel consumption
  - High-efficiency transmission
  - Variable valve timing
  - Electric power steering system
  - Direct injection 4 stroke gasoline engine

#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
Tel 81-565-23-1341 Fax 81-565-23-5754  
E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
URL <http://www.toyota.co.jp>



Eco-friendly vehicle "TOYOTA MARK X"

## Eco-products

EP-2-011

Carriers / Automobiles

automobiles

### Eco-friendly vehicle "TOYOTA IPSUM"

"TOYOTA IPSUM" clears the 2010 Fuel Efficiency Standards, and also achieves an exhaust emission level that is 75% lower than the 2005 Exhaust Emission Standards in the Ministry of Land.

- 1) Specific fuel consumption (10-15 Japanese test cycle): 11.4 km/liter
- 2) Technology to reduce fuel consumption
  - High-efficiency transmission
  - Variable valve timing
  - Battery charge control system

#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
 Tel 81-565-23-1341 Fax 81-565-23-5754  
 E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
 URL <http://www.toyota.co.jp>



Global warming



Energy saving



Eco-friendly vehicle "TOYOTA IPSUM"

## Eco-products

EP-2-012

Carriers / Automobiles

automobiles

### Eco-friendly vehicle "TOYOTA WISH"

"TOYOTA WISH" clears the 2010 Fuel Efficiency Standards, and also achieves an exhaust emission level that is 50% lower than the 2010 Exhaust Emission Standards in the Ministry of Land.

- 1) Specific fuel consumption (10-15 Japanese test cycle): 14.4 km/liter
- 2) Technology to reduce fuel consumption
  - High-efficiency transmission
  - Variable valve timing
  - Electric power steering system

#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
 Tel 81-565-23-1341 Fax 81-565-23-5754  
 E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
 URL <http://www.toyota.co.jp>



Global warming



Energy saving



Eco-friendly vehicle "TOYOTA WISH"

## Eco-products

EP-2-013

Carriers / Automobiles

automobiles

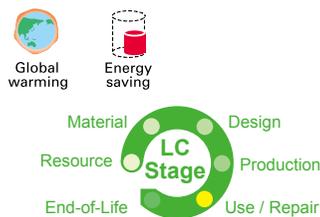
### Eco-friendly vehicle"TOYOTA HIACE WAGON"

"TOYOTA HIACE WAGON" clears the 2010 Fuel Efficiency Standards, and also achieves an exhaust emission level that is 50% lower than the 2005 Exhaust Emission Standards in the Ministry of Land.

- 1) Specific fuel consumption (10-15Japanese test cycle):8.6km/liter
- 2) Technology to reduce fuel consumption
  - High-efficiency transmission
  - Variable valve timing
  - Battery charge control system

#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
Tel 81-565-23-1341 Fax 81-565-23-5754  
E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
URL <http://www.toyota.co.jp>



Eco-friendly vehicle"TOYOTA HIACE WAGON"

## Eco-products

EP-2-014

Carriers / Automobiles

automobiles

### Eco-friendly vehicle"TOYOTA ALPHARD"

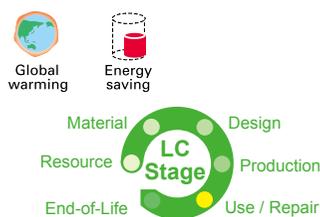
"TOYOTA ALPHARD" clears the 2010 Fuel Efficiency Standards, and also achieves an exhaust emission level that is 75% lower than the 2005

Exhaust Emission Standards in the Ministry of Land.

- 1) Specific fuel consumption (10-15Japanese test cycle):9.7km/liter
- 2) Technology to reduce fuel consumption
  - High-efficiency transmission
  - Variable valve timing

#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
Tel 81-565-23-1341 Fax 81-565-23-5754  
E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
URL <http://www.toyota.co.jp>



Eco-friendly vehicle"TOYOTA ALPHARD"

## Eco-products

EP-2-015

Carriers / Automobiles

automobiles

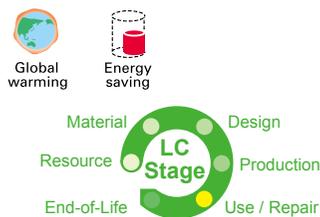
### Eco-friendly vehicle "TOYOTA NOAH"

"TOYOTA NOAH" clears the 2010 Fuel Efficiency Standards, and also achieves an exhaust emission level that is 50% lower than the 2005 Exhaust Emission Standards in the Ministry of Land.

- 1) Specific fuel consumption (10-15 Japanese test cycle): 14.2 km/liter
- 2) Technology to reduce fuel consumption
  - Continuously variable transmission
  - Variable valve timing
  - Battery charge control system
  - Direct injection 4 stroke gasoline engine

#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
 Tel 81-565-23-1341 Fax 81-565-23-5754  
 E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
 URL <http://www.toyota.co.jp>



Eco-friendly vehicle "TOYOTA NOAH"

## Eco-products

EP-2-016

Carriers / Automobiles

automobiles

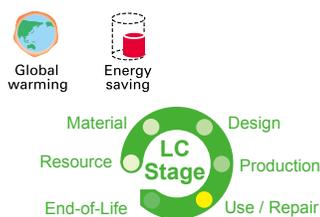
### Eco-friendly Hybrid vehicle "TOYOTA ALPHARD HYBRID"

"TOYOTA ALPHARD HYBRID" clears the 2010 Fuel Efficiency Standards, and also achieves an exhaust emission level that is 75% lower than the 2005 Exhaust Emission Standards in the Ministry of Land.

- 1) Specific fuel consumption (10-15 Japanese test cycle): 17.2 km/liter
- 2) Technology to reduce fuel consumption
  - Hybrid system
  - Continuously variable transmission
  - Variable valve timing

#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
 Tel 81-565-23-1341 Fax 81-565-23-5754  
 E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
 URL <http://www.toyota.co.jp>



Eco-friendly Hybrid vehicle "TOYOTA ALPHARD HYBRID"

## Eco-products

EP-2-017

Carriers / Automobiles

automobiles

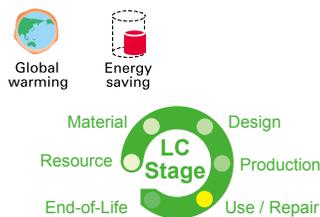
### Eco-friendly Hybrid vehicle "TOYOTA HARRIER HYBRID"

"TOYOTA HARRIER HYBRID" clears the 2010 Fuel Efficiency Standards, and also achieves an exhaust emission level that is 75% lower than the 2005 Exhaust Emission Standards in the Ministry of Land.

- 1) Specific fuel consumption (10-15 Japanese test cycle): 17.8 km/liter
- 2) Technology to reduce fuel consumption
  - Hybrid system
  - Continuously variable transmission
  - Variable valve timing
  - Electric power steering system

#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
Tel 81-565-23-1341 Fax 81-565-23-5754  
E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
URL <http://www.toyota.co.jp>



Eco-friendly Hybrid vehicle "TOYOTA HARRIER HYBRID"

## Eco-products

EP-2-018

Carriers / Automobiles

automobiles

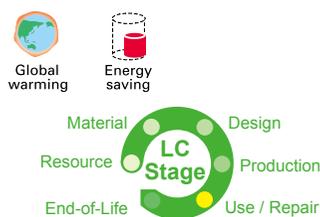
### Eco-friendly vehicle "TOYOTA HARRIER"

"TOYOTA HARRIER" clears the 2010 Fuel Efficiency Standards, and also achieves an exhaust emission level that is 75% lower than the 2005 Exhaust Emission Standards in the Ministry of Land.

- 1) Specific fuel consumption (10-15 Japanese test cycle): 11.0 km/liter
- 2) Technology to reduce fuel consumption
  - High-efficiency transmission
  - Variable valve timing
  - Battery charge control system

#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
Tel 81-565-23-1341 Fax 81-565-23-5754  
E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
URL <http://www.toyota.co.jp>



Eco-friendly vehicle "TOYOTA HARRIER"

## Eco-products

EP-2-019

Carriers / Automobiles

automobiles

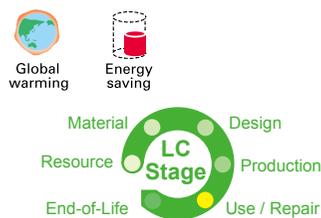
### Eco-friendly vehicle TOYOTA PROBOX WAGON

"TOYOTA PROBOX WAGON" clears the 2010 Fuel Efficiency Standards, and also achieves an exhaust emission level that is 50% lower than the 2005 Exhaust Emission Standards in the Ministry of Land.

- 1) Specific fuel consumption (10-15 Japanese test cycle): 17.2 km/liter
- 2) Technology to reduce fuel consumption
  - Variable valve timing

#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
 Tel 81-565-23-1341 Fax 81-565-23-5754  
 E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
 URL <http://www.toyota.co.jp>



Eco-friendly vehicle TOYOTA PROBOX WAGON

## Eco-products

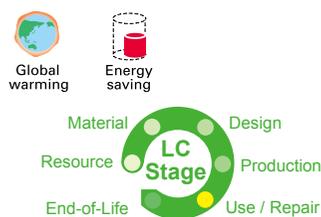
EP-2-020

Carriers / Automobiles

automobiles

### Eco-friendly Lexus 600h with hybrid power

The Lexus 600h is equipped with Toyota Hybrid System. It achieves fuel consumption of 12.2 km/L and low emissions.



Lexus 600h with hybrid power

#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
 Tel 81-565-23-1341 Fax 81-565-23-5754  
 E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
 URL <http://www.toyota.co.jp>

## Eco-products

EP-2-021

Carriers / Automobiles

automobiles

### Eco-friendly Lexus 450h with hybrid power

The Lexus 450h is equipped with Toyota Hybrid System. It achieves fuel consumption of 14.2km/L and low emissions.



#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
Tel 81-565-23-1341 Fax 81-565-23-5754  
E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
URL <http://www.toyota.co.jp>



Lexus 450h with hybrid power

## Eco-products

EP-2-022

Carriers / Automobiles

automobiles

### LPG (Liquefied petroleum gas) vehicle "TOYOTA DYNA"

LPG vehicle emits little CO<sub>2</sub> and NO<sub>x</sub>, particulate emissions are zero. (Max payload)1.5ton



#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
Tel 81-565-23-1341 Fax 81-565-23-5754  
E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
URL <http://www.toyota.co.jp>



LPG (Liquefied petroleum gas) vehicle "TOYOTA DYNA"

## Eco-products

EP-2-023

Carriers / Automobiles

automobiles

### LPG (Liquefied petroleum gas) vehicle"TOYOTA COASTER"

TOYOTA COASTERLPG vehicle emits little CO<sub>2</sub> and NO<sub>x</sub>, particulate emissions are zero.



Air/Water/Soil



COASTER (minibus)

#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
 Tel 81-565-23-1341 Fax 81-565-23-5754  
 E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
 URL <http://www.toyota.co.jp>

## Eco-products

EP-2-024

Carriers / Automobiles

automobiles

### Clean diesel truck"DPNR-equipped TOYOTA DYNA&TOYOACE

The DPNR(Diesel Particulate NO<sub>x</sub> Reduction)is a catalytic converter system that continuously and simultaneously removes PM(Particulate Matter)-granular material consisting mainly of fly ash- and NO<sub>x</sub>(nitrogen oxides)from diesel exhaust emissions by utilizing the NO<sub>x</sub> storage reduction three-way catalytic converter technology.

(Max payload)2-3ton (Fuel type)low-sulfur gas oil at 10 ppm max



Air/Water/Soil



diesel truck"DPNR-equipped TOYOTA DYNA&TOYOACE

#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
 Tel 81-565-23-1341 Fax 81-565-23-5754  
 E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
 URL <http://www.toyota.co.jp>

## Eco-products

EP-2-025

Carriers / Automobiles

automobiles

### Clean diesel truck "DPR-equipped TOYOTA DYNA&TOYOACE

This truck equipped DPR(Diesel Particulate Reduction)system achieves low PM(particulate matter) emission level that is 10% lower than the standard levels for 2005.  
(Max payload)2-3ton (Fuel type)low-sulfar gas oil at 50 ppm max



Air/Water/Soil



#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
Tel 81-565-23-1341 Fax 81-565-23-5754  
E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
URL <http://www.toyota.co.jp>



Clean diesel truck "DPR-equipped TOYOTA DYNA

## Eco-products

EP-2-026

Carriers / Automobiles

automobiles

### Clean diesel truck "TOYOTA DYNA&TOYOACE Hybrid"

This truck equipped with a hybrid system is the first of its kind in the world and was jointly developed with Hino Motors,LTD. This truck achieves a PM&NO<sub>x</sub> emission level that is 10% lower than standard levels for 2005. qualifying it as an low emission diesel vehicle. The truck's fuel efficiency has also been improved by 30%.  
(Max payload)2-3ton (Fuel type)low-sulfar gas oil at 50 ppm max



Global warming



Energy saving



#### Toyota Motor Corporation

1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan  
Tel 81-565-23-1341 Fax 81-565-23-5754  
E-mail [satoshi\\_aida@mail.toyota.co.jp](mailto:satoshi_aida@mail.toyota.co.jp)  
URL <http://www.toyota.co.jp>



Clean diesel truck "TOYOTA DYNA Hybrid"

## Eco-products

EP-2-027

Carriers / Automobiles

tire temporary mobility restoration kits

### Tire Temporary Mobility Restoration Kit

Bridgestone corporation has been developing Tire Temporary Mobility Restoration Kit, which can be used in major puncture case instead of spare tire, to allow the driver to continue driving to a place to replace the punctured tire. The kit will be effective in countries with good road condition.

- Resource saving: This kit can deal with major puncture case, therefore, spare tire will no longer be necessary when the kit is equipped. Resource used to produce spare tire, which are disposed mostly unused, can be greatly saved.
- Reusable: The kit consists of a sealant and an air compressor. The kit can be reused by replacing the sealant only, when used.

#### Bridgestone Corporation

10-1, Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
 Tel 81-3-3563-6972 Fax 81-3-3563-1165  
 E-mail  
 URL <http://www.bridgestone.co.jp/english/index.html>



Proto type

## Eco-products

EP-2-028

Carriers / Automobiles

solar control films / safety & security films

### Spectrally Selective Solar Control Films

First developed for aerospace and defence applications, V-KOOL's wavelength or spectrally-selected technology revolutionized the industry by being the first "intelligent" film that can differentiate between wavelength in the solar spectrum.

The technology behind V-KOOL's revolutionary performance is in a complex process of embedding multiple stacks of heat reflecting. The super clear substrate is embedded with 7 atomic layers of Gold, Silver and Indium Oxide. This complex process gives V-KOOL it's amazing heat reflection qualities without looking reflective or dark.

V-KOOL films work by reflecting heat rather than absorbing heat. Heat absorbing films can cause intensive heat build-up in the car due to re-radiated heat and thermal stress onto the glass can result in glass breakage or cracks.

A July 2000 desert test program with the U.S Department of Energy's National Renewable Energy Laboratory (NREL) reported that a test vehicle equipped with V-KOOL film had significantly reduced interior cabin temperatures and improved fuel economy by 3%.

#### V-KOOL (S) Pte Ltd

12 Jalan Kilang Barat #01-01 Globamatrix Building 159354, Singapore  
 Tel 65-6776-5432 Fax 65-6774-9949  
 E-mail [info@v-kool.com.sg](mailto:info@v-kool.com.sg)  
 URL <http://www.v-kool.com.sg>



Available in : Worldwide

## Eco-products

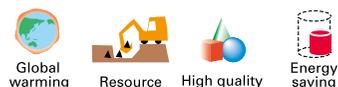
EP-2-029

Carriers / Automobiles

car navigation system

### Fuel Consumption- Conscious HDD Car Navigation System

HDD Car Navigation System consists of five units; In-car main unit (FM/AM tuner, DVD/CD player), Monitor unit, Digital terrestrial tuner unit, Brain unit, and Home kit. Users can share and use the information like a driving-history uploaded through the network with the "Smart Loop System" loaded into this product. More concretely, the "Accumulative Probe" and "Real-Time Probe" provide the latest traffic congestion information beyond a wide area, daily traffic congestion prediction, and location information of parking lot of the destination, etc. These information allow our users to set a quicker route even than with the former models and accordingly, to save the fuel. This product complies with the standards specified in EU RoHS and ELV, and achieved the size and weight reduction by 91% in volume and 94% in weight from the previous model not complying with them.



AVIC-VH099G

#### PIONEER CORPORATION

545-57 Ogura, Saiwai-ku, Kawasaki-shi, Kanagawa-ken 212-0054, Japan  
Tel 81-44-580-4275 Fax  
E-mail products\_eco@post.pioneer.co.jp  
URL

## Eco-products

EP-2-030

Carriers / Automobiles

diesel engine exhaust system

### Adblue Abacus for Euro IV Diesel Engine Exhaust System

Adblue Abacus is used for reduce and eliminate exhaust emission by 90%.

Adblue Abacus is a non-toxic, clear, synthetically manufactured solution. It is used as a reducing agent for SCR systems ( Selective Catalytic Reduction ) in diesel-powered vehicles. Toxic NOx emissions are reduced to the following component of air : nitrogen, water and carbon dioxide.

Adblue Abacus is transported in a supplementary tank on the bus or truck. It complies to DIN standard (DIN 70 070).



#### Abacus Corporation Pte Ltd

Blk 1, Defu Lane 10, #03-571 530182, Singapore  
Tel 65-6285-6100 Fax 65-6281-7761  
E-mail abacuscsmkt@gmail.com  
URL <http://www.abacuscscorp.com.sg>

Available in : ASEAN / ASIA / WORLDWIDE

## Eco-products

EP-2-031

Carriers / Automobiles

energy storage system for rolling stock

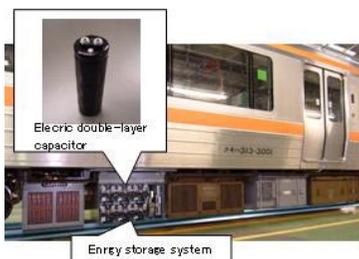
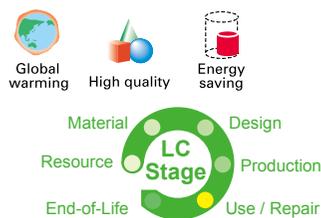
### An accumulating system for railroad carriages which recycles discharged thermal energy

An accumulating system for railroad carriages is the equipment which accumulates the regenerative energy which the brakes discharged into the condenser and recycles the energy. By this system, recovered is 50% of the average mechanical brake energy at the time of no regeneration, and thereby the net energy consumption of motor car is restrained. In addition, the abrasion of the brake shoe is reduced, and the lives of the substitute parts are made to improve. In the joint development with the Central Japan Railway Co., running test was carried out in January, 2005.

- **Energy Saving:** The point of improvement is to absorb 8% of the inverter regeneration energy, and to reuse as a 2% of the vehicle acceleration energy.

#### TOSHIBA CORPORATION Industrial Systems Company

1-1, Shibaura 1-chome, Minato-Ku, Tokyo 105-8001, Japan  
 Tel 81-3-3457-4556 Fax 81-3-5444-9276  
 E-mail  
 URL



Energy storage system(EDLC):COB015-A0,DC/DC converter system:COV068-A0

## Eco-products

EP-2-032

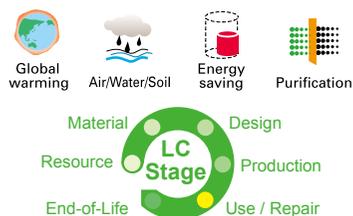
Carriers / Automobiles

automobiles

### Eco-friendly vehicles Nissan SERENA 2WD

Nissan SERENA achieves 20% improvement above 2010 Fuel Economy Standards and 75% below 2005 Exhaust Emission Standards (SU-LEV), and meets the requirements of Green Taxation and Green Purchasing Law in Japan. In order to realize significant fuel-consumption improvement, following technologies are installed.

- Variable valve timing
- Alternator regenerative control mechanism
- Electric power steering
- Continuouslyvariable transmission



#### Nissan Motor Co., Ltd.

17-1, 6-chome, Ginza, Chuo-ku, Tokyo 104-8023, Japan  
 Tel 81-3-5565-2184 Fax 81-3-3546-3266  
 E-mail s-saegusa@mail.nissan.co.jp  
 URL <http://www.nissan.co.jp/>

Available in : Japan

Nissan SERENA 2WD

## Eco-products

EP-2-033

Carriers / Automobiles

car navigation system

### Ecological driving support system / Nissan CARWINGS NAVIGATION SYSTEM

Nissan CARWINGS service improves road congestion and driver-behavior by its fastest route guidance system and eco-driving advice and delivers sustainable results in fuel-consumption improvement. Eco-driving service available on NISSAN CARWINGS navigation system has won the Agency for Natural Resources and Energy Director-General's award in the 18th annual Energy Conservation Prize.



#### Nissan Motor Co., Ltd.

17-1, 6-chome, Ginza, Chuo-ku, Tokyo 104-8023, Japan  
Tel 81-3-5565-2184 Fax 81-3-3546-3266  
E-mail [s-saegusa@mail.nissan.co.jp](mailto:s-saegusa@mail.nissan.co.jp)  
URL <http://www.nissan.co.jp>



Available in : Japan

CARWINGS Navigation System

## Eco-products

EP-3-001

OA / IT equipment  
copying machines

### Environment-conscious Multifunctional Copier iR3045 series

Print speed: 45ppm (A4/Letter)

- Power consumption of only 1W during sleep mode, by use of Canon's On-Demand fixing technology and improved controller; Warm-up time of 30 seconds; Recovery time from sleep mode of 10 seconds
- Compliant with the RoHS directive, which restricts or prohibits the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls(PBB), and polybrominated diphenyl ethers (PBDE)
- Compact body which reduces the resources used at the manufacturing phase; Duplexing and capability of use of recycling paper which contribute to saving consumable paper



iR3045F with optional accessories (Japan model)

#### Canon Inc.

30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo 146-8501, Japan  
Tel 81-3-3758-2111 Fax 81-3-3758-1160  
E-mail  
URL <http://www.canon.com>

## Eco-products

EP-3-002

OA / IT equipment  
copying machines

### Environment-conscious Digital MFP, iR 6010-R

The used machines collected from the customers are disassembled, and only the units complied with the remanufacturing quality standards are selected and cleaned. The wasted components are exchanged.

The product quality of the remanufactured is equal to the new product. Exterior parts were previously difficult to reuse because of dirty surfaces, but Canon's own recycling technology makes it possible. The high rate of reused parts reduces environmental burden (converted to CO<sub>2</sub> emissions) up to the manufacturing stage.



iR 6010-R (for Japan)

#### Canon Inc.

30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo 146-8501, Japan  
Tel 81-3-3758-2111 Fax 81-3-3758-1160  
E-mail  
URL <http://www.canon.com>

Available in : Japan, Korea, Hong Kong, Thailand, etc.

## Eco-products

EP-3-003

OA / IT equipment  
copying machines

### Digital Imaging System Ricoh Aficio 2015/2018/2018D

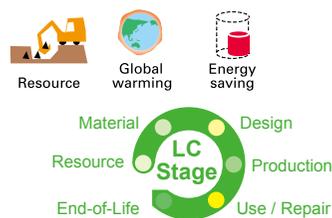
Compared with previous models, the Ricoh Aficio 2015/2018/2018D have improved recovery time (from energy saver mode back to print ready conditions) to less than 10 seconds, because of the same technologies, named as Quick Start Up (QSU), used in other Ricoh Aficio series.

At the same time, power consumption in energy saver mode has been reduced to 1W for basic copier models and to 10W for multifunction models. As the result, more energy saving becomes possible, while waiting less.

In the same manner as other Aficio series, Aficio 2018D has enhanced duplex productivity to reduce the time to complete duplex prints, so that the customers can use duplex mode more, to save paper.

#### Ricoh Company, Ltd.

Ricoh BLDG, 8-13-1 Ginza, Chuo-ku, Tokyo 104-8222, Japan  
Tel 81-3-6278-5209 Fax 81-3-3543-9347  
E-mail [envinfo@ricoh.co.jp](mailto:envinfo@ricoh.co.jp)  
URL <http://www.ricoh.com/environment/>



Ricoh Aficio 2018

Available in : Asia Pacific Region

## Eco-products

EP-3-004

EP-3-004

OA / IT equipment

### Digital Imaging Systems Ricoh Aficio MP1500/1600L/2000L

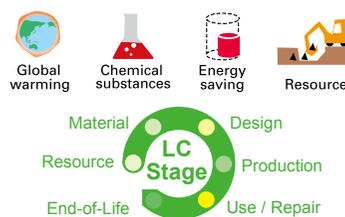
Energy Saving Digital Imaging Systems of 15, 16, and 20 images per minute with quick warm up and quick first copy delivery time: The Ricoh Aficio MP1500/1600L/2000L have such a short recovery time as less than 10 seconds from the off-mode (for copier version) and/or from the sleep-mode (for multi-function version) back to copy/print ready conditions, because of the same technologies, named as Quick Start Up (QSU) used in other Ricoh Aficio series.

At the same time, power consumption in the Off-mode is only 1W for the basic copier and is only less than 10W for multi-function versions. As the result, more energy saving becomes possible, while waiting less. To save paper, it is possible to make 2 or 4 original pages into one side of paper, as the grouping print function. Aficio MP2000L has the standard automatic duplex capability with leading duplex productivities to save paper resource and energy associated to the lifecycle of paper.

These models have a low ozone emission and have low operation noise, and use no chemical substances written in EU RoHS Directive.

#### Ricoh Company, Ltd.

Ricoh BLDG, 8-13-1, Ginza, Chuo-ku, Tokyo 104-8222, Japan  
Tel 81-3-6278-5209 Fax 81-3-3543-9347  
E-mail [envinfo@ricoh.co.jp](mailto:envinfo@ricoh.co.jp)  
URL <http://www.ricoh.com/environment/>



Ricoh Aficio MP2000L

Available in : Asia Pacific Region

## Eco-products

EP-3-005

OA / IT equipment  
copying machines

### Digital Imaging Systems Ricoh Aficio 3025/3030/MP2510/MP3010

Energy and Paper Saving Digital Imaging Systems of 25 and 30 images per minute: The Ricoh Aficio 3025/3030 have such a short recovery time as less than 10 seconds from the off-mode (for copier version) and/or from the sleep-mode (for multi-function version) back to copy/print ready conditions, because of the same technologies, named as Quick Start Up (QSU) used in other Ricoh Aficio series.

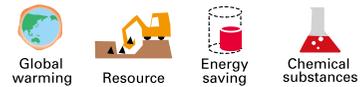
At the same time, power consumption in the Off-mode is only 1.2W for the basic copier and is 7.5W for multi-function versions. As the result, more energy can be saved, while waiting less.

These models have the standard automatic duplex capability with leading duplex productivities to save paper resource and energy associated to the lifecycle of paper. Using duplex and grouping print functions, it is possible to print up to 16 original pages into both side of single sheet of paper. Such paper saving modes can be easily set by using Ricoh original graphical printing screen, preventing mis-prints. These models have an internal toner recycling system, a low ozone emission & operation noise, and use no chemical substances written in EU RoHS Directive.

#### Ricoh Company, Ltd.

Ricoh BLDG, 8-13-1, Ginza, Chuo-ku, Tokyo 104-8222, Japan  
Tel 81-3-6278-5209 Fax 81-3-3543-9347  
E-mail [envinfo@ricoh.co.jp](mailto:envinfo@ricoh.co.jp)  
URL <http://www.ricoh.com/environment/>

Available in : Asia Pacific Region



Ricoh Aficio 3030

## Eco-products

EP-3-006

OA / IT equipment  
copying machines

### Digital Imaging Systems Ricoh Aficio 3035/3045/MP3500/MP4500

Energy and Paper Saving Digital Imaging Systems in 35 and 45 images per minute:

The Ricoh Aficio 3035/3045/MP3500/MP4500 have such a short recovery time as less than 10 seconds (3035/3500)/15 seconds (3045/4500) from the off-mode (copier version) and/or from the sleep-mode (multi-function version) back to print ready conditions, because of the same technologies, named as Quick Start Up (QSU) used in other Ricoh Aficio series. And, power consumption is 1.2W in the Off-mode (copier models) and is 8.5W in Sleep mode (multi-function versions). Thus, more energy can be saved, while waiting less.

These models have the standard automatic high speed duplex unit to save paper resource/energy associated to the lifecycle of paper. Using duplex and grouping print functions, it is possible to print up to 16 original pages into both side of single sheet of paper. Such paper saving modes can be easily set by using Ricoh original graphical printing screen, preventing mis-prints.

These models have an internal toner recycling system (no wasting toner), a low ozone emission, a low operation noise, and use no chemical substances written in EU RoHS Directive.

#### Ricoh Company, Ltd.

Ricoh BLDG, 8-13-1, Ginza, Chuo-ku, Tokyo 104-8222, Japan  
Tel 81-3-6278-5209 Fax 81-3-3543-9347  
E-mail [envinfo@ricoh.co.jp](mailto:envinfo@ricoh.co.jp)  
URL <http://www.ricoh.com/environment/>

Available in : Asia Pacific Region



Ricoh Aficio 3035/3045

## Eco-products

EP-3-007

OA / IT equipment  
copying machines

### Digital Imaging Systems Ricoh Aficio MP5500/6500/7500

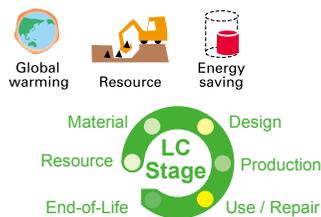
Energy and Paper Saving Digital Imaging Systems in 55, 65, and 75 images per minute: Typical warming-up time from Sleep/Off mode till print ready conditions was about 300 seconds. Because of such long waiting time, the operators had to be patient to save energy. Ricoh Aficio MP5500/6500/7500 have been improved to save more energy with less waiting time because of innovative Quick Start Up technologies (QSU). It is enhanced from 300 seconds to 30 seconds. For those who cannot wait for 30 seconds to wake it up, it is possible to set an optional 10 seconds mode. Thus, more customers can save more energy with less waiting time.

The unique dual scanning document feeder can scan both sides of original images at the same time, resulting in the same highest duplex productivity even from duplex originals. 16 original pages can be printed on both sides of single sheet of paper, using duplex and grouping functions.

These models have an internal toner recycling system (no wasting toner), a low ozone emission, a low operation noise, and use no chemical substances written in EU RoHS Directive.

#### Ricoh Company, Ltd.

Ricoh BLDG, 8-13-1 Ginza, Chuo-ku, Tokyo 104-8222, Japan  
Tel 81-3-6278-5209 Fax 81-3-3543-9347  
E-mail [envinfo@ricoh.co.jp](mailto:envinfo@ricoh.co.jp)  
URL <http://www.ricoh.com/environment/>



Available in : Asia Pacific Region

Ricoh Aficio MP7500

## Eco-products

EP-3-008

OA / IT equipment  
full color copying machines

### Multifunctional Color Copiers, iR C2550/C3080/C3580 Series

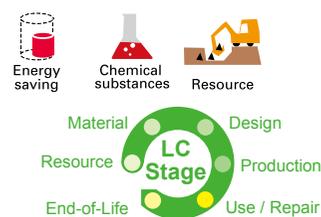
Print speed (A4/Letter):

iR C2550i/C2550F: 25ppm(B/W)/23ppm(Colour); iR C3080/C3080i/C3080F: 30ppm (B/W)/28ppm(Colour); iR C3580/C3580i/C3580F: 35ppm (B/W)/30ppm(Colour)

- Power consumption 3W during sleep mode by use of Canon's On-Demand fixing technology
- Compliant with the RoHS directive, which restricts or prohibits the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), and polybrominated diphenyl ethers (PBDE)
- Compact body design of 565mm in width, which reduces the resources used at the manufacturing phase

#### Canon Inc.

30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo 146-8501, Japan  
Tel 81-3-3758-2111 Fax 81-3-3758-1160  
E-mail  
URL <http://www.canon.com>



iR C3580i with optional accessories

## Eco-products

EP-3-009

OA / IT equipment

full color copying machines

### Environment-conscious Color Digital MFP, iR C3200N-R

The used machines collected from the customers are disassembled, and only the units complied with the remanufacturing quality standards are selected and cleaned.

The wasted components are exchanged. The product quality of the remanufactured is equal to the new product.

Exterior parts were previously difficult to reuse because of dirty surfaces, but Canon's own recycling technology makes it possible. The high rate of reused parts reduces environmental burden (converted to CO<sub>2</sub> emissions) up to the manufacturing stage.



#### Canon Inc.

30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo 146-8501, Japan  
Tel 81-3-3758-2111 Fax 81-3-3758-1160  
E-mail  
URL <http://www.canon.com>

Available in : Japan, Korea



iR C3200N-R (for Japan)

## Eco-products

EP-3-010

OA / IT equipment

full color copying machines

### Full Color Digital Imaging Systems Ricoh Aficio MP C1500

Energy and Paper Saving Full Color Digital Imaging Systems in 15 images per minute (ipm) in black mode & 6 ipm in full color mode

The print engine of Ricoh Aficio MP C1500 is own unique Gel-Sprinter system, which requires much less energy than the conventional laser printing system. It takes only 5.5 seconds to be back to print ready conditions from Sleep mode, where power consumption is as low as 3.7 W. (230V model) So, it can be kept in Sleep mode as long as possible. The maximum power consumption is only 110W (Main body).

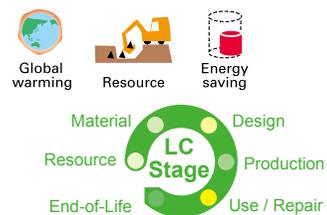
Unlike ink-base engine, the Gel-Sprinter engine requires no waiting time to dry printed image up on paper. So, just after the first side printing is completed, the second side printing can be done without image smearing problems. Thus, high speed duplex print can be made. Using both duplex and combined printing modes, it is possible to print 8 original images on to a single sheet of paper, which enable to save paper while maintaining productivity.

Like other Ricoh Aficio series, these models have a low ozone emission and have low operation noise, and use no chemical substances written in EU RoHS Directive.

#### Ricoh Company, Ltd.

Ricoh Building, 8-13-1 Ginza, Chuo-ku, Tokyo 104-8222, Japan  
Tel 81-3-6278-4168 Fax 81-3-3543-9342  
E-mail [envinfo@ricoh.co.jp](mailto:envinfo@ricoh.co.jp)  
URL <http://www.ricoh.com/environment/>

Available in : Asia Pacific Region



Ricoh Aficio MP C1500

## Eco-products

EP-3-011

OA / IT equipment

full color copying machines

### Full Color Digital Imaging Systems Ricoh Aficio MP C2500/C3000

Energy and Paper Saving Full Color Digital Imaging Systems in 25 and 30 images per minute both in full color and black/white modes

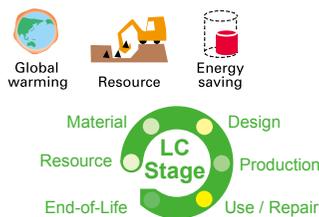
The Ricoh Aficio MP C2500/C3000 are the latest full color digital multi-function systems with energy saving modes. Power consumption in Sleep mode is 8W. From this mode, it takes less than 30 seconds to complete warming up. For those who need less waiting time, there are 20 seconds and/or 7 seconds recovery modes to conserve energy while keeping requested productivity by the customers. As the result, the customers can select a suitable setting for energy saving and recovery time.

These models have the standard automatic duplex capability with leading duplex productivities to save paper resource and energy associated to the lifecycle of paper. Using duplex and combined printing functions, it is possible to print up to 16 original pages into both side of a single sheet of paper. Such paper saving modes can be easily set by using Ricoh original graphical printing screen, preventing operators from making mis-prints.

These models have a low ozone emission, a low operation noise, and use no chemical substances written in EU RoHS Directive.

#### Ricoh Company, Ltd.

Ricoh Building, 8-13-1 Ginza, Chuo-ku, Tokyo 104-8222, Japan  
 Tel 81-3-6278-5209 Fax 81-3-3543-9347  
 E-mail [envinfo@ricoh.co.jp](mailto:envinfo@ricoh.co.jp)  
 URL <http://www.ricoh.com/environment/>



Ricoh Aficio MP C2500/C3000

Available in : Asia Pacific Region

## Eco-products

EP-3-012

OA / IT equipment

full color copying machines

### Full Color Digital Imaging Systems Ricoh Aficio MP C3500/C4500

The Aficio MP C3500 can print 35 images per minute (ipm) in both the full color and the black modes. And, the Aficio MPC4500 can print 40 ipm in the full color mode and 45 ipm in the black mode.

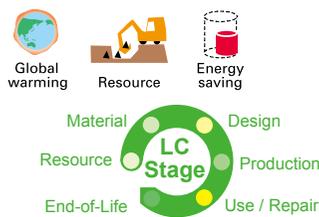
Even in high-speed full color digital imaging systems, more energy can be saved with less waiting time because of Ricoh's Color Quick Start-up (QSU) technologies. From the Sleep mode consuming 7-8W, it takes less than 45 seconds (C3500) or 60 seconds (C4500) to complete warming up. If it is too long to wait, there are 3, 10, and 16-19 seconds recovery modes to conserve energy while keeping requested productivity by the customers.

These models have the standard automatic duplex capability with leading duplex productivities to save paper resource and energy associated to the lifecycle of paper. Using duplex and combined printing functions, 16 original pages can be printed on both sides of a single sheet of paper. Such paper saving modes can be easily set by using Ricoh original graphical printing screen, preventing operators from making mis-prints.

These models have a low ozone emission, a low operation noise, and use no chemical substances written in EU RoHS Directive.

#### Ricoh Company, Ltd.

Ricoh Building, 8-13-1 Ginza, Chuo-ku, Tokyo 104-8222, Japan  
 Tel 81-3-6278-5209 Fax 81-3-3543-9347  
 E-mail [envinfo@ricoh.co.jp](mailto:envinfo@ricoh.co.jp)  
 URL <http://www.ricoh.com/environment/>



Ricoh Aficio MP C3500/C4500

Available in : Asia Pacific Region

## Eco-products

EP-3-013

OA / IT equipment

full color copying machines

### Full Color Digital Multifunctional Copier "WORKiO"

- Thanks to the Panasonic's IH(induction heating)technologies, the DP-C354/C264/C323/C263/C213 can be ready for printing in only approx. 15 seconds from the sleep mode or after power on.
- This realizes very quick color document output, and helps to conserve energy remarkably.
- These products use lead free solders, lead and cadmium free materials for harness and power codes, hexvalent chromium free screws and steel plates, heavy metal free toner and halogen free plastic components for casing.
- "2 in 1" printing function that two same-sized originals are printed out to a single sheet to reduce paper usage and power consumption.



#### Panasonic Communications Co., Ltd.

4-1-62 Minoshima, Hakata-ku, Fukuoka 812-8531, Japan  
 Tel 81-92-431-2111 Fax  
 E-mail  
 URL <http://panasonic.co.jp/pcc/company/>

Full Color Digital Multifunctional Copier : "WORKiO" DP-C354/C264/C323/C263/C213

## Eco-products

EP-3-014

OA / IT equipment

full color copying machines

### Low toner consumption, Digital full color MFP, MX-2700N/2700G

These MFPs have a revolutionary Mycrostoner technology offering a lower consumption rate than that of conventional toner in a smaller cartridge that uses less packing materials, while the longer-life photoconductor delivers higher performance comparing with previous models. These products supports two steps energy saving modes to reduce power consumption after a set interval. And to cut down on energy consumption further, by pressing "the manual energy save key" after a job is finished, the product immediately enters auto shut-off mode anytime. On top of that, standby power consumption in night-time Fax reception mode (required FAX kit) is less than 1W which is among the lowest in the industry. The product is compliant with the RoHS directive which restricts the use of hazardous substances. Recycled plastic is adopted for one component weighing 1.8kg and over.



#### SHARP CORPORATION

22-22 Nagaike-cho, Abeno-ku, Osaka 545-8522, Japan  
 Tel 81-6-6625-0438 Fax 81-6-6625-0153  
 E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
 URL <http://www.sharp.co.jp>

MX-2700N(inc.Finisher)

## Eco-products

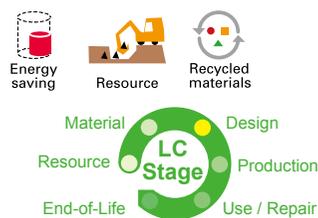
EP-3-015

OA / IT equipment

full color copying machines

### Low toner consumption, Digital full color MFP, MX-7000N

This MFP has a revolutionary Mycrostoner technology offering a lower consumption rate than that of conventional toner in a smaller cartridge that uses less packing materials. This product supports two steps energy saving modes to reduce power consumption after a set interval. And to cut down on energy consumption further, by pressing "the manual energy save key" after a job is finished, the product immediately enters auto shut-off mode anytime. On top of that, standby power consumption in night-time Fax reception mode (required FAX kit) is less than 1W which is among the lowest in the industry. The product is compliant with the RoHS directive which restricts the use of hazardous substances. Recycled plastic is adopted for one component weighing 1.8kg and over.



MX-7000N

#### SHARP CORPORATION

22-22, Nagaike-cho, Abeno-ku, Osaka 545-8522, Japan  
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E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
URL <http://www.sharp.co.jp/>

## Eco-products

EP-3-016

OA / IT equipment

full color copying machines

### Low toner consumption, Digital full color MFP, MX-3500N/3501N

These MFPs have a revolutionary Mycrostoner technology offering a lower consumption rate than that of conventional toner in a smaller cartridge that uses less packing materials, while the longer-life photoconductor delivers higher performance comparing with previous models. These products supports two steps energy saving modes to reduce power consumption after a set interval. And to cut down on energy consumption further, by pressing "the manual energy save key" after a job is finished, the product immediately enters auto shut-off mode anytime. On top of that, standby power consumption in night-time Fax reception mode (required FAX kit) is less than 1W which is among the lowest in the industry. The product is compliant with the RoHS directive which restricts the use of hazardous substances. Recycled plastic is adopted for one component weighing 1.8kg and over.



MX-3500N(inc.Finisher)

#### SHARP CORPORATION

22-22, Nagaike-cho, Abeno-ku, Osaka 545-8522, Japan  
Tel 81-6-6625-0438 Fax 81-6-6625-0153  
E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
URL <http://www.sharp.co.jp/>

## Eco-products

EP-3-017

OA / IT equipment

full color copying machines

### Low toner consumption, Digital full color MFP, MX-4500N/4501N

These MFPs have a revolutionary Mycrostoner technology offering a lower consumption rate than that of conventional toner in a smaller cartridge that uses less packing materials, while the longer-life photoconductor delivers higher performance comparing with previous models. These products supports two steps energy saving modes to reduce power consumption after a set interval. And to cut down on energy consumption further, by pressing "the manual energy save key" after a job is finished, the product immediately enters auto shut-off mode anytime. On top of that, standby power consumption in night-time Fax reception mode (required FAX kit) is less than 1W which is among the lowest in the industry. The product is compliant with the RoHS directive which restricts the use of hazardous substances. Recycled plastic is adopted for one component weighing 1.8kg and over.



MX-4500N(inc.Finisher)

#### SHARP CORPORATION

22-22, Nagaike-cho, Abeno-ku, Osaka 545-8522, Japan  
Tel 81-6-6625-0438 Fax 81-6-6625-0153  
E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
URL <http://www.sharp.co.jp>

## Eco-products

EP-3-018

OA / IT equipment

full color copying machines

### Low toner consumption, Digital full color MFP, MX-5500N

This MFP has a revolutionary Mycrostoner technology offering a lower consumption rate than that of conventional toner in a smaller cartridge that uses less packing materials. This product supports two steps energy saving modes to reduce power consumption after a set interval. And to cut down on energy consumption further, by pressing "the manual energy save key" after a job is finished, the product immediately enters auto shut-off mode anytime. On top of that, standby power consumption in night-time Fax reception mode (required FAX kit) is less than 1W which is among the lowest in the industry. The product is compliant with the RoHS directive which restricts the use of hazardous substances. Recycled plastic is adopted for one component weighing 1.8kg and over.



MX-5500N

#### SHARP CORPORATION

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Tel 81-6-6625-0438 Fax 81-6-6625-0153  
E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
URL <http://www.sharp.co.jp>

## Eco-products

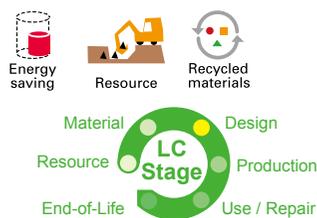
EP-3-019

OA / IT equipment

full color copying machines

### Low toner consumption, Digital full color MFP, MX-6200N

This MFP has a revolutionary Mycrostoner technology offering a lower consumption rate than that of conventional toner in a smaller cartridge that uses less packing materials. This product supports two steps energy saving modes to reduce power consumption after a set interval. And to cut down on energy consumption further, by pressing "the manual energy save key" after a job is finished, the product immediately enters auto shut-off mode anytime. On top of that, standby power consumption in night-time Fax reception mode (required Fax kit) is less than 1W which is among the lowest in the industry. The product is compliant with the RoHS directive which restricts the use of hazardous substances. Recycled plastic is adopted for one component weighing 1.8kg and over.



MX-6200N

#### SHARP CORPORATION

22-22, Nagaike-cho, Abeno-ku, Osaka 545-8522, Japan  
 Tel 81-6-6625-0438 Fax 81-6-6625-0153  
 E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
 URL <http://www.sharp.co.jp>

## Eco-products

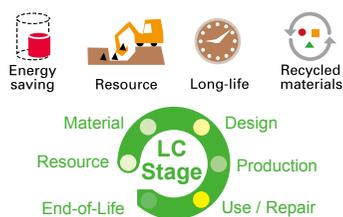
EP-3-020

OA / IT equipment

full color copying machines

### Low toner consumption, Digital full color MFP, MX-2300N/2300G

These MFPs have a revolutionary Mycrostoner technology offering a lower consumption rate than that of conventional toner in a smaller cartridge that uses less packing materials, while the longer-life photoconductor delivers higher performance comparing with previous models. These products supports two steps energy saving modes to reduce power consumption after a set interval. And to cut down on energy consumption further, by pressing "the manual energy save key" after a job is finished, the product immediately enters auto shut-off mode anytime. On top of that, standby power consumption in night-time Fax reception mode (required FAX kit) is less than 1W which is among the lowest in the industry. The product is compliant with the RoHS directive which restricts the use of hazardous substances. Recycled plastic is adopted for one component weighing 1.8kg and over.



MX-2300N(inc.Finisher)

#### SHARP CORPORATION

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 E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
 URL <http://www.sharp.co.jp>

## Eco-products

EP-3-021

OA / IT equipment

full color copying machines

### Eco-Friendly Digital Multifunction Devices for Offices

ApeosPort-III C3300/C2200, DocuCentre-III C3300/C2200 are equipped with two industry-first environmental technologies, as well as new print technology for high-resolution, high-quality images.

<Enhanced environmental performance with lead-free shafts and biomass plastic>

Industry-first environmental technologies include: (1) shafts that do not contain lead, a designated hazardous substance, in parts for the output unit, including paper feeder; and (2) a biomass plastic that comprises more than 30 percent of plant-derived constituent by weight in the moving part of the machine (drum cover).

<Enhanced energy saving performance>

An energy-saving controller, high-efficient lamp and temperature-controlling technology reduce power consumption in sleep mode from below 10W (existing machines) to below 2.0W (PF/PFS model). In terms of TEC, power consumption is cut to 1.78kWh a week (PF/PFS model, 25 ppm machine).

<LED printhead system for high-resolution, high-quality images>

A newly developed LED printhead is incorporated to write images on the photoreceptor drum. Fuji Xerox has realized high image quality of 1,200 x 2,400 dpi, which is equivalent to or better than laser systems.

#### Fuji Xerox Co., Ltd.

9-7-3 Akasaka, Minato-ku, Tokyo 107-0052, Japan

Tel 81-3-6271-5111 Fax

E-mail

URL <http://www.fujixerox.co.jp/>



Available in : Japan

ApeosPort-III C3300/C2200, DocuCentre-III C3300/C2200

## Eco-products

EP-3-022

OA / IT equipment

multi-functional peripherals

### Low toner consumption, Digital full color MFP, MX-6201N/7001N

These MFPs have a revolutionary Mycrostoner technology offering a lower consumption rate by 30% less than that of conventional toner with previous models. These products supports two steps energy saving modes to reduce power consumption after a set interval. And to cut down on energy consumption further, by pressing "the manual energy save key" after a job is finished, the product immediately enters auto shut-off mode anytime. On top of that, standby power consumption in night-time Fax reception mode is less than 1W which is among the lowest in the industry. The product is compliant with the RoHS directive which restricts the use of hazardous substances. And also for exterior cabinets and interior parts(except some parts of the interior parts),non-halogen-based plastic materials are used. Recycled plastic is adopted for several components weighing 1.8kg and over.



#### SHARP CORPORATION

22-22 Nagaike-cho, Abeno-ku, Osaka 545-8522, Japan

Tel 81-6-6625-0434 Fax 81-6-6625-0153

E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)

URL <http://www.sharp.co.jp>

MX-6201N/7001N(inc. options)

## Eco-products

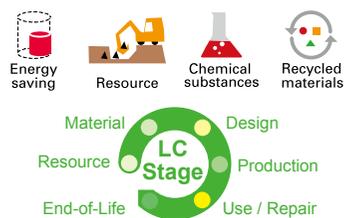
EP-3-023

OA / IT equipment

multi-functional peripherals

### High Speed Digital MFP, MX-M850/M950/M1100

These MFPs have a revolutionary Mycrostoner technology offering a lower consumption rate than that of conventional toner with previous models. These products supports two steps energy saving modes to reduce power consumption after a set interval. And to cut down on energy consumption further, by pressing "the manual energy save key" after a job is finished, the product immediately enters auto shut-off mode anytime. The products is compliant with the RoHS directive which restricts the use of hazardous substances. And also for exterior cabinets and interior parts(except some parts of the interior parts),non-halogen-based plastic materials are used. Recycled plastic is adopted for several components weighing 1.3kg and over.



#### SHARP CORPORATION

22-22 Nagaike-cho, Abeno-ku, Osaka 545-8522, Japan  
 Tel 81-6-6625-0434 Fax 81-6-6625-0153  
 E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
 URL <http://www.sharp.co.jp>



MX- M850/M950/M1100 (inc. options)

## Eco-products

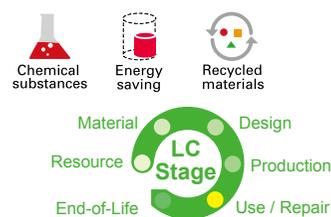
EP-3-024

OA / IT equipment

multi-functional peripherals

### Digital multi-functional peripherals suitable for small offices

- e-STUDIO167/207/237 are Digital multi-functional Peripherals having function of scanner, printer, fax and copier, and these are suitable for small offices
- By using twin-halogen lamp method, energy consumption has been reduced to 50% comparing with the previous model, PREMAGE165.
- More than a half of plastics parts contain recycling material of non-halogen fire retardant plastics.
- These models have acquired environmental labels of international Energy Star and Japan Eco-mark.
- Toner is being recycled and reused by collecting remaining toner on photo-conductor drum by means of toner recycling mechanism.
- Integrated chassis and cover of the new structure design could reduce total machine weight.



#### TOSHIBA TEC CORPORATION

Oval Court Ohsaki Mark East 2-17-2, Higashi Gotanda, Shinagawa-ku, Tokyo 141-8664, Japan  
 Tel 81-3-6422-7160 Fax 81-3-6422-7121  
 E-mail  
 URL <http://www.toshibatec.co.jp/index.html>



e-STUDIO167 with an optional RADF(Reversible Automatic Document Feeder)

## Eco-products

EP-3-025

OA / IT equipment

scanners

### CanoScan LiDE 600F, Environmentally Conscious A4 Flatbed Scanner

CanoScan LiDE 600F is a A4 flatbed scanner. It offers the excellent functions: up to 4800dpi high-resolution scanning, 35mm film scanning, 3-way positioning and others.

In addition, the environmental consideration for the scanner is being conducted positively. As for energy saving, LiDE (LED indirect exposure) technology was adopted. As a result, the power consumption of 93% has been reduced compared with the conventional scanner FB1210U.

As for resource saving, 59% reduction by volume and 32% reduction by weight have been achieved in comparison with those of FB1210U. As for the elimination of hazardous substances, the substitutes have been developed, hence the product conforms to the EU RoHS directive.

#### Canon Inc.

3-30-2, Shimomaruko, Ota-ku, Tokyo 146-8501, Japan  
Tel 81-44-542-2111 Fax  
E-mail  
URL <http://www.canon.com>



CanoScan LiDE 600F

## Eco-products

EP-3-026

OA / IT equipment

scanners

### World's Smallest A4 Mobile Scanner

ScanSnap S300, Compact Color Scanner It's the world's smallest duplex ADF<sup>1</sup> scanner designed to provide best-in-class performance inside or outside of the home or office. Easily digitizes your documents! A must have for the paperless era!

- Resource Efficient: Smallest - A4 Scanner with ADF<sup>2</sup>
- Energy Efficient: Energy star registered.
- Less than 3.2W at Sleep mode.

1: ADF: Automatic Document Feeder.

2: as of October 2007, according to PFU's investigations

#### PFU LIMITED

1Solid square East Tower, 580 Horikawa-Cho, Saiwai-ku, kawasaki-Shi, Kanagawa 212-8563, Japan  
Tel 81-42-796-5211 Fax  
E-mail [scanners@pfu.fujitsu.com](mailto:scanners@pfu.fujitsu.com)  
URL <http://scansnap.fujitsu.com/>



ScanSnap S300, Desktop Scanner

Available in : Asia, North America, Europe, Middle East

## Eco-products

EP-3-027

OA / IT equipment

scanners

### Energy Saving Scanner, Epson Perfection V500 Photo

This product is a CCD-type image-scanner in which LED was adopted as the light source. It has a high resolution of 6400dpi, which is highest among the scanner series of this class. It can mount the adapter for scanning film and the automatic document feeder (ADF). It is workable for the multiple purposes from personal use to professional or business use.

#### <Energy saving>

This product is capable of keeping the light quantity at a stable condition, immediately after switching on the electricity, and of switching off the light source immediately after scanning. Thereby, the power consumption of the ready period was reduced to 53% compared to that of the conventional model of our company.

#### <Elimination of hazardous substance>

"Mercury-less" has been realized by replacing the light source of a cold-cathode fluorescent lamp. The product conforms to the EU RoHS directive.

#### SEIKO EPSON CORPORATION

3-3-5 Owa, Suwa-shi, Nagano-ken 392-8502, Japan  
Tel 81-266-52-3131 Fax  
E-mail  
URL <http://www.epson.com>



Epson Perfection V500 Photo

## Eco-products

EP-3-028

OA / IT equipment

scanners

### Desktop type OCR scanner S1500 for high-speed data entry from paper documents

Desktop OCR Scanner S1500 is capable of reading double-sided color documents at a high speed of 50 sheets per minute (A4 size, vertical orientation.) Featuring a highly accurate double-feed detection mechanism, it can handle stacks of documents with varying thickness. It is also easy to maintain, because wear-out parts have been reduced, and access is easy for parts that still need to be replaced periodically.

- **Energy saving:** Features an Energy Star compliant "low power consumption" mode.
- **Resource saving:** About 40% reduction in total weight; using fewer, thinner components, made of lightweight materials.
- **Elimination of harmful chemical substances:** Uses mercury-free, long-life light source; made of LED (Light-emitting Diodes) instead of fluorescent lamp.

#### Toshiba Solutions Corporation

1-1, Shibaura 1-Chome, Minato-Ku, Tokyo 105-6691, Jpan  
Tel 81-3-3457-3260 Fax 81-3-5444-9429  
E-mail [eco-info@toshiba-sol.co.jp](mailto:eco-info@toshiba-sol.co.jp)  
URL <http://www.toshiba-sol.co.jp/>



Desktop type OCR scanner S1500

Available in : Japan

## Eco-products

EP-3-029

OA / IT equipment

scanners

### Hi-speed Color Scanner, Energy-conservation and space-saving

- Versatile document handling for today's business needs
- Virtually any type of paper
- ID cards - including embossed hard cards
- Mixed paper and hard card batch scanning
- Long paper scanning (EKG & monitoring systems)
- Double feed prevention roller system
- Fits comfortably in most front-office environments due to a quiet and space saving design.
- Conforms to the international ENERGY STAR program.
- Environmentally conscious materials.
- Specific brominated flame retardants (PBB and PBDE) are not used in appearance plastic materials.
- Pb-free solder is used for circuit boards.
- Chrome free surface treated steel plates that don't contain the hexavalent chromium are used for the sheet metals of the product.



Hi-speed Color Scanner : KV-S1025C / S1020C

#### Panasonic Communications Co., Ltd.

1471 Murata-Machi, Tosu, Saga 841-8501, Japan  
 Tel 81-942-81-2723 Fax 81-942-81-2682  
 E-mail  
 URL <http://panasonic.co.jp/pcc/index.html>

## Eco-products

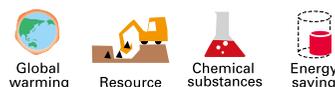
EP-3-030

OA / IT equipment

scanners

### Hi-speed Color Scanner, Energy conservation and space saving

- "Direct & Colour "Office Solution":
- Reliable Ultrasonic Double-Feed Detection
- Full Color Duplex Scanning
- High Durability and Reliable Paper Handling
- Long paper scanning
- Business Card size to A3 ADF
- Space-saving compact design by adopting the curve path ADF. (Requires only 0.4 m<sup>2</sup> space for scanning size A3 sheet)
- Conforms to the international ENERGY STAR program.
- Environmentally conscious materials
- Specific brominated flame retardants(PBB and PBDE) are not used in appearance plastic material.
- Pb-free solder is used for circuit boards.
- Chrome free surface treated steel plates that don't contain the hexavalent chromium are used for the sheet metals of the product.



Hi-speed Color Scanner : KV-S3065CW

#### Panasonic Communications Co., Ltd.

1471 Murata-Machi, Tosu, Saga 841-8501, Japan  
 Tel 81-942-81-2723 Fax 81-942-81-2682  
 E-mail  
 URL <http://panasonic.co.jp/pcc/index.html>

## Eco-products

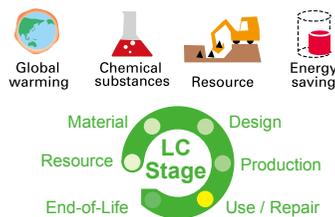
EP-3-031

OA / IT equipment

scanners

### Hi-speed Color Scanner, Energy-conservation and space-saving

- "Direct & Color" Office Solution:
  - Scanning speed (A4 size portrait) 41ppm/23ppm : KV-S2048C/KV-S2028C.
  - Reliable Ultrasonic Double-Feed Detection
  - Full Color Duplex Scanning
  - High Durability and Reliable Paper Handling
  - Space-saving compact design by adopting the curve path ADF.
- Conforms to the international ENERGY STAR program.
- Environmentally conscious materials:
  - Specific brominated flame retardants(PBB and PBDE) are not used in appearance plastic material.
  - Pb-free solder is used for circuit boards.
  - Chrome free surface treated steel plates that don't contain the hexavalent chromium is used for the sheet metals of the product.



Hi-speed Color Scanner : KV-S2048C / S2028C

#### Panasonic Communications Co., Ltd.

1471 Murata-Machi, Tosu, Saga 841-8501, Japan  
 Tel 81-942-81-2723 Fax 81-942-81-2682  
 E-mail  
 URL <http://panasonic.co.jp/pcc/index.html>

## Eco-products

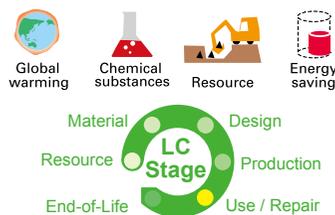
EP-3-032

OA / IT equipment

electronic board

### Electronic board, Metallic design and easy to clean

- Standard model : UB-5325 Wide model : UB-5825 4-screen model : UB-7325
- Film board type
- Metallic frame
- Plain paper printing with multiple copies
- USB PC interface with Panasonic document management Software
- Environmentally conscious materials
  - Specific brominated flame retardants(PBB and PBDE) are not used in appearance plastic material.
  - Pb-free solder is used for circuit boards.
  - Chrome free surface treated steel plates that don't contain the hexavalent chromium are used for the sheet metals of the product.



Electronic Board : Panaboard UB-5325 / 5825 / 7325

#### Panasonic Communications Co., Ltd.

1471 Murata-machi, Tosu, Saga 841-8501, Japan  
 Tel 81-942-81-2723 Fax 81-942-81-2682  
 E-mail  
 URL <http://panasonic.co.jp/pcc/index.html>

## Eco-products

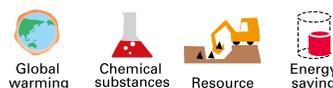
EP-3-033

OA / IT equipment

electronic board

### Color Electronic Board, Metallic design and easy to clean

- "Direct & Color" Office Solution: Wide model :UB-2815C. Standard model : UB-2315C.
- Steel Board Type
- Color Scanning System
- SD Memory Card/USB Flash Memory Storage
- Color Output Capability
- USB PC Interface with Panasonic Document Management Software
- Automatic Date & Time Stamp
- Colour LCD for Easy Operation
- Reduction of paper: Scanned data can be saved directly on the memory storage, and the data can be transmitted directly to PCs.
- Environmentally conscious materials:
  - Specific brominated flame retardants(PBB and PBDE) are not used in appearance plastic materials.
  - Pb-free solder is used for circuit boards.
  - Chrome free surface treated steel plates that don't contain the hexavalent chromium are used for the sheet metals of the product.



Color Electronic Board : "Panaboard" UB-2815C / 2315C

#### Panasonic Communications Co., Ltd.

1471 Murata-Machi, Tosu, Saga 841-8501, Japan  
 Tel 81-942-81-2723 Fax 81-942-81-2682  
 E-mail  
 URL <http://panasonic.co.jp/pcc/index.html>

## Eco-products

EP-3-034

OA / IT equipment

projectors

### Lightweight and compact mobile projector : EMP-1715

#### <Energy Saving>

- Improving light use efficiency holds power consumption to 9.0W per 100 lm.  
 (9.0W/100 ANSI lm)  
 Power consumption of this model is 35% lower than Epson predecessor models.

#### <Resource Saving>

- Achieving a good balance between high brightness and miniaturization holds weight of this model to 63g per 100 lm.  
 (63g/100 ANSI lm) Weight of this model is 56% lighter than Epson predecessor models.

#### <Elimination of harmful material>

- This model complies with EU-RoHS.
- Outer case of this model projector does not use halogenated fire retardant.



Mobile Projector EMP-1715

#### SEIKO EPSON CORPORATION

3-3-5 Owa, Suwa-shi, Nagano-ken 392-8502, Japan  
 Tel 81-266-52-3131 Fax  
 E-mail  
 URL <http://www.epson.com>

## Eco-products

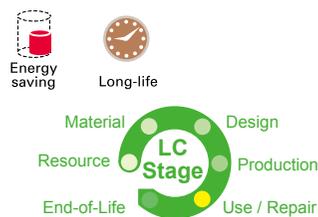
EP-3-035

OA / IT equipment

projectors

### User-Friendly and Energy Saving Designed Mirror Projection Method Projector

NEC introduced the "WT610" projector, which adopts aspheric mirrors and an ultra short-focus projection system, developed by NEC Display Solutions Ltd. as a world leading device. By choosing "Lamp Eco-Mode", the life time of the lamp can extend by up to 4000 hours. And NEC could achieve 32dB operating noise level as well as energy saving designed.



#### NEC Corporation

7-1 Shiba 5 Cho-me, Minato-ku, Tokyo 108-8001, Japan  
Tel Fax  
E-mail <http://www.nec.co.jp/eco/en/inquiry.html>  
URL <http://www.nec.com/>



## Eco-products

EP-3-036

OA / IT equipment

projectors

### Multimedia Projectors SX7/X700

- These liquid-crystal projectors with SXGA+/XGA resolution at 4,000 ANSI lumens combine 0.7 type LCOS (Liquid Crystal On Silicon) and Canon's proprietary AISYS (Aspectual Illumination System) and a new lamp adapted to the new optical illumination system to deliver high-quality images and higher resolution. With these projectors, the effect of light quality control and the luminous efficiency of the lamp are improved. Furthermore, the lamp system extends operating life up to 50% so that it contributes to resource-savings. The feature of LCOS, fine images projected on the screen where no grid of horizontal and vertical lines exists, is upgraded at 4,000 ANSI lumens.
- Their compact body and weight of only 4.7kg contribute to resource savings.
- These products comply with RoHS Directive on the restriction of the use of certain substances in electrical and electronic equipment that came into force on 1 July 2006.
- Canon ISO14001 certified manufacturing sites now employ a newly developed closed system to recycle water using organic membrane filtration.
- Lead-free glass is utilized to produce the environmentally sound lenses.



#### Canon Inc.

30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo 146-8501, Japan  
Tel 81-3-3758-2111 Fax 81-3-3758-1160  
E-mail  
URL <http://www.canon.com>



Multimedia Projectors SX7/X700

## Eco-products

EP-3-037

OA / IT equipment

projectors

### Ultra-short throw projector

Main feature of product

- High performance lens with free shaped surface
- Ultra short throw projection with 80" @ 63cm
- Adopting optical mecha that correct the distortion of screen image by free shaped mirror
- Mirror is on the top of the projector and able to open/close with power on/off
- Not annoying by shadow when making presentation
- Being able to setup on the desktop and project 45" image on it
- Environment Conscious
- RoHS compatible model

**Hitachi,Ltd.,**

Shin-Otemachi Bldg.2-1, Otemachi 2-chome, Chiyoda-ku, Tokyo  
100-0004, Japan  
Tel Fax  
E-mail  
URL



Recyclable



High quality



CP-A100

CP-A100

## Eco-products

EP-3-038

OA / IT equipment

projectors

### Portable LCD Projector, P1SD

- SD memory card can be used direct. It will be a projection start if the picture photoed with the digital camera is inserted in an SD memory card slot.
- Easy to give a PowerPoint® presentation without a PC.  
Just use Panasonic's Image Creator software to convert the Microsoft PowerPoint® file to a JPEG file, and then you can leave your PC at home or the office.
- Easy to carry, too. It's the world's lightest projector of its kind, and the smallest. It weighs only 2.9 pounds (1.3kg) and measures just 23.4 x 18.8 x 6.5cm (9.2 x 7.4 x 2.6 inches). Its footprint is around 30% smaller than a sheet of A4 or letter-sized paper.
- Circuits have been integrated to promote energy saving, and compactness of circuit boards and fundamental parts has been improved.
- Non-Use of Specific Chemical Substances\*  
(\* Lead, mercury, cadmium, hexavalent chromium, two specific brominated flame retardants, designated by the EU RoHS Directive.)



Global warming



High quality



Resource



Energy saving



Portable LCD Projector : TH-P1SD

**Matsushita Electric Industrial Co., Ltd.**  
**Panasonic AVC Networks Company**

1-15 Matsuo-cho, Kadoma City, Osaka 571-8504, Japan  
Tel 81-6-6905-8356 Fax 81-6-6905-4755  
E-mail  
URL <http://panasonic.co.jp/pavc/>

Available in : Japan

## Eco-products

EP-3-039

OA / IT equipment

projectors

### Projector equipped with a super-short focus lens of the new development

TDP-EW25 is equivalent to "a network projector" which was mounted on Windows Vista™ as standard equipment, and it is usable for WXGA projection. Super short focus lens of the new development was adopted, and the short focus which has a projection distance of about 1.2m to 100 type's large screen has been realized.

- **Energy Saving:** By the choice of the most suitable optical unit, the brightness and the efficiency of electric power were improved by 20%.
- **Resource Saving:** By the replacement of the packing cushioning material with carrying bags, the weight of packing materials was reduced by 50%.

#### TOSHIBA CORPORATION Digital Media Network Company

1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan  
 Tel Fax  
 E-mail [teruyuki.morimoto@dpg.toshiba.co.jp](mailto:teruyuki.morimoto@dpg.toshiba.co.jp)  
 URL <http://www.toshiba.co.jp>



TDP-EW25

## Eco-products

EP-3-040

OA / IT equipment

LED projector

### Personal LCD Projector, TH-AX200

High brightness and Contrast: Sharp and clear images

- High resolution vivid images even in a bright surroundings realized by newly developed "Light Harmonizer 2"
- High brightness and contrast by "Dynamic Iris"



#### Matsushita Electric Industrial Co., Ltd.

2-15 Matsuba-cho, Kadoma, Osaka 571-8503, Japan  
 Tel 81-6-6905-4363 Fax 81-6-6905-4376  
 E-mail  
 URL

Available in : Japan

Personal LCD Projector : TH-AX200

## Eco-products

EP-3-041

OA / IT equipment

LED projector

### Stationary LCD Projector, PT-F100NT

Bright and vivid images for a long time with maintenance saving and easy to use

- Newly developed ARF (Automatic Rolling Filters) function
- New lamp drive system increasing the luminous efficiency
- "Daylight View 3" function compensating the contrast in bright surroundings



Stationary LCD Projector : PT-F100NT

#### Matsushita Electric Industrial Co., Ltd.

2-15 Matsuba-cho, Kadoma, Osaka 571-8503, Japan  
 Tel 81-6-6905-4363 Fax 81-6-6905-4376  
 E-mail  
 URL

Available in : Japan

## Eco-products

EP-3-042

OA / IT equipment

automated teller machines

### Automated Teller Machine(TS-E1B1)

#### [Product Feature]

High performance Automated Teller Machine (ATM) with a compact body and large capacity for convenience stores.

#### [Eco-design Point]

1. Reducing 32% of the product mass through optimal capacity design of unit mechanism (in comparison with the conventional models)
2. Reducing stand-by power consumption by 17% through low power design of control mechanism (in comparison with the conventional models)



ATM TS-E1B1-1

#### Hitachi-Omron Terminal Solutions, Corp.

Ohsaki New City 3rd Building, 7th Floor, 1-6-3 Osaki 141-8576, Japan  
 Tel Fax  
 E-mail  
 URL <http://www.hitachi-omron-ts.com/index.html>

## Eco-products

EP-3-043

OA / IT equipment

cash dispense machines

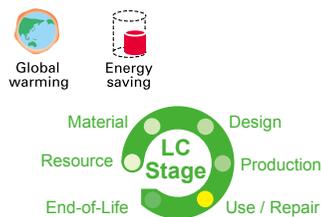
### Cash Dispense Machine(TS-E141)

[Product Feature]

Large capacity and high performance with compact body

[Eco-design Point]

Reducing stand-by power consumption by 40% through low power design of control mechanism and suitable capacity design of bill feeding unit (in comparison with the conventional models)



CD TS-E141

**Hitachi-Omron Terminal Solutions, Corp.**

Ohsaki New City 3rd Building, 7th Floor, 1-6-3 Osaki, Shinagawa-ku,  
Tokyo 141-8576, Japan  
Tel Fax  
E-mail  
URL <http://www.hitachi-omron-ts.com/index.html>

## Eco-products

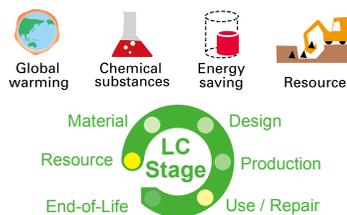
EP-3-044

OA / IT equipment

IP telephone system

### Full-IP Telephone System, Energy conservation and resource saving

- Reduced power consumption by energy-conservation design.
- Eco-leaf (Product Environmental Aspects Declaration) [No.BS-07-E007] [http://202.214.40.151/english/ecoleaf/pub\\_label.cfm](http://202.214.40.151/english/ecoleaf/pub_label.cfm)
- Life Cycle Impact  
Global Warming : CO<sub>2</sub> equivalent 4,876.49kg (256 ports system).



Full-IP PBX : KX-TDE100

**Panasonic Communications Co., Ltd.**

4-1-62 Minoshima, Hakata-ku, Fukuoka 812-8531, Japan  
Tel 81-92-477-1848 Fax 81-92-477-1452  
E-mail  
URL <http://panasonic.com.sg/web/pcatid/CatLev1/4>

## Eco-products

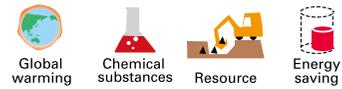
EP-3-045

OA / IT equipment

IP telephone system

### Full-IP Telephone System, Energy conservation and resource saving

- Reduced power consumption by energy-conservation design.
- Eco-leaf (Product Environmental Aspects Declaration)  
[No.BS-07-E008]  
[http://202.214.40.151/english/ecoleaf/pub\\_label.cfm](http://202.214.40.151/english/ecoleaf/pub_label.cfm)
- Life Cycle Impact  
Global Warming : CO<sub>2</sub> equivalent 6,035.32kg (352 ports system).



Full-IP PBX : KX-TDE200

#### Panasonic Communications Co., Ltd.

4-1-62 Minoshima, Hakata-ku, Fukuoka 812-8531, Japan  
Tel 81-92-477-1848 Fax 81-92-477-1452  
E-mail  
URL <http://panasonic.com.sg/web/pcatId/CatLev1/4>

## Eco-products

EP-3-046

OA / IT equipment

IP telephone system

### IP-PBX TM-STA-0A/TM-MTA-0A

#### [Product Description]

- Provide environments that fulfill the ability of individuals at forefront of business
- Help enterprises to save the cost of communication and network management IP telephony innovates the enterprise communication system by removing barriers between voice and data. Hitachi's IP telephony Server "IPTOWER-SP Series" enables constructing the network that fits every enterprise size and need and maximizes the effects of IP. It also ensures reliability necessary for the infrastructure.

#### [Development Concept]

- Integration of low voltage devices (3.3 V) for power reduction as well as FPGA and other technologies for the reducing amount of components have achieved total power consumption reduction by 44% compared to the conventional model.
- Reduction of the total volume of the product by 34% and the weight by 34% compared to the conventional model. (Products for market in Japan)



#### Hitachi Communication technologies, Ltd

Omori Bellport D Bldg., 26-3, Minami Oi 6-chome, Shinagawa-ku,  
Tokyo 140-0013, Japan  
Tel 81-3-6404-1221 Fax 81-3-6404-0555  
E-mail [web-com@hitachi-com.co.jp](mailto:web-com@hitachi-com.co.jp)  
URL <http://www.hitachi-com.co.jp/PBX/iptower.html>

## Eco-products

EP-3-047

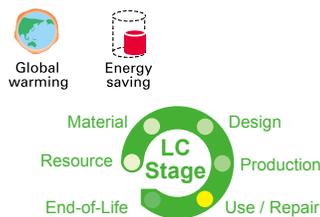
OA / IT equipment

tele-communication equipment for conference

### Tele-communication equipment for conference

This product has light weight and compact body, and easy communication & conference is possible with the general telephone system and outlet.

- Power consumption is reduced by energy efficient design.
- Chrome free surface treated steel plates that don't contain the hexavalent chromium are used for the sheet metals of the product.
- Pb-free solder is used for circuit boards.
- Specific brominated flame retardants (PBB and PBDE) are not used in appearance plastic materials.



#### Panasonic Communications Inc.

4-1-62 Minoshima, Hakata-ku, Fukuoka 812-8531, Japan  
Tel 81-92-477-1103 Fax 81-92-477-1488  
E-mail  
URL <http://panasonic.co.jp/pcc/index.html>



Tele-communication equipment for conference : KX-TS745JPK

## Eco-products

EP-3-048

OA / IT equipment

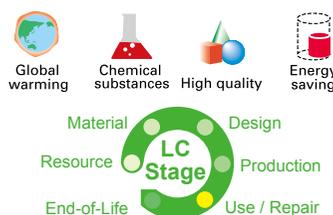
facsimiles

### High-performance and Eco-friendly Fax Machine

The UF-A600/A500 features a power-saving mode, which sets the heater in the printer block down to the minimum required power in standby/energy-saving mode.

This design reduces power consumption at standby mode by approx 80% (compared to our conventional model, UF-A70).

In addition, the UF-A600/A500 uses lead free solders, lead and cadmium free materials for harness and power code, hexavalent chromium free screws and steel plates and halogen free plastic components for casing, which contributes to conserve environments. Furthermore, UF-A600/A500 has "2 in 1" printing function that two same-sized originals are printed out to a single sheet to reduce paper usage and power consumption.



#### Panasonic Communications Co., Ltd.

4-1-62 Minoshima, Hakata-ku, Fukuoka 812-8531, Japan  
Tel 81-92-431-2111  
E-mail  
URL <http://panasonic.co.jp/pcc/index.html>



High-performance Fax Machine : Panafax UF-A600/A500

## Eco-products

EP-3-049

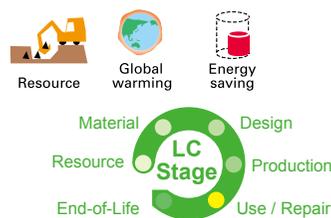
OA / IT equipment

facsimiles

### Personal Facsimiles

Drive mechanisms of printing and circuit boards are successfully miniaturized for downsizing of the products.

- Power consumption is reduced by energy efficient design.
- Chrome free surface treated steel plates that don't contain the hexavalent chromium are used for the sheet metals of the product.
- Pb-free solder is used for circuit boards.
- Specific brominated flame retardants (PBB and PBDE) are not used in appearance plastic materials.



#### Panasonic Communications Inc.

4-1-62 Minoshima, Hakata-ku, Fukuoka 812-8531, Japan  
Tel 81-92-477-1103 Fax 81-92-477-1488  
E-mail  
URL <http://panasonic.co.jp/pcc/index.html>



Personal Facsimiles : KX-PW506DL

## Eco-products

EP-3-050

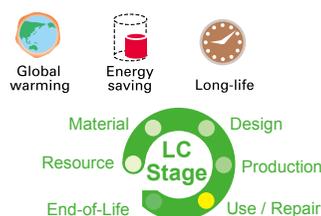
OA / IT equipment

adapters

### PLC Adapter

Easy network communications by using house wires and outlets

- Chrome free surface treated steel plates that don't contain the hexavalent chromium are used for the sheet metals of the product.
- Pb-free solder is used for circuit boards.
- Specific brominated flame retardants (PBB and PBDE) are not used in appearance plastic materials.



#### Panasonic Communications Inc.

4-1-62 Minoshima, Hakata-ku, Fukuoka 812-8531, Japan  
Tel 81-92-477-1103 Fax 81-92-477-1488  
E-mail  
URL <http://panasonic.co.jp/pcc/index.html>



PLC Adapter : BL-PA100KT

## Eco-products

EP-3-051

OA / IT equipment

cellular/PHS telephone sets

### Mobile phone: Resource saving, Easy to recycle, Reduction of chemical substances

'Titanium Slim' model about 12.9 mm\*<sup>1</sup> thick with a wide variety of functions, including about 2 Mega pixel auto focus camera.

Mobile phone to use titanium for tough and lightweight body.

\*<sup>1</sup>: Maximum's 14mm.

- **Resource saving:** Slimmer products by making smaller and thinner components and modules, as well as reducing the size of boards. Smaller boards by reducing the number of components through optimization of circuits, as well as developing high density mounting technology.
- **Easy to recycle:** Replacing plastics with metals (stainless steel) in the housing cases.
- **Reduction and substitution of chemical substances:** Use of halogen-free printed circuit boards and polyvinyl chloride (PVC) free coating.

#### TOSHIBA CORPORATION Mobile Communications Company

1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan

Tel Fax

E-mail

URL <http://www.toshiba.co.jp>



814T

## Eco-products

EP-3-052

OA / IT equipment

cellular/PHS telephone sets

### Mobile phone :Resource saving, Easy to recycle, Reduction of chemical substances

Mobile phone about 9.9 mm\*<sup>1</sup> thick with a wide variety of functions, including 2.4-inch QVGA Clear-Screen LCD and about 2 Mega pixel camera.

'CARD SIZE SLIM'\*<sup>2</sup> mobile phone in metallic design with sophisticated look.

\*<sup>1</sup>: Maximum's 13.1mm.

\*<sup>2</sup>: The stainless steel upper panel is similar size with a credit card.

- **Resource saving:** Slimmer products by making smaller and thinner components and modules, as well as reducing the size of boards. Smaller boards by reducing the number of components through optimization of circuits, as well as developing high density mounting technology.
- **Easy to recycle:** Replacing plastics with metals (stainless steel) in the housing cases
- **Reduction and substitution of chemical substances:** Use of halogen-free printed circuit boards and polyvinyl chloride (PVC) -free coating.

#### TOSHIBA CORPORATION Mobile Communications Company

1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan

Tel Fax

E-mail

URL <http://www.toshiba.co.jp>



W55T

## Eco-products

EP-3-053

OA / IT equipment

cellular/PHS telephone sets

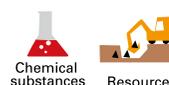
### Mobile Phone

#### Feature of product

- 1seg phone that made the best use of technology of Hitachi high-definition television liquid crystal TV "Wooo".
- The high capacity battery of 1,100mAh is possible that continuously use about 7 hours.
  - \* This is continuous attention time when View style, Earphone use, Brightness of liquid crystal:3.and DBEX™function OFF are set.
- It corresponds to DBEX™.The high quality sound that listened naturally easily was achieved by the technical tie-up with Yamaha Motor Co., Ltd..
- DBEX™ is the trademark of DiMAGIC

#### Environmental consideration point

- Model for RoHS Directive
- The resin of the plant origin that uses the polylactic acid for the adaptor (charge stand) is adopted.
- The biomass degree 21.5% by weight was achieved. Biomass recognition of Japan Organics Recycling Association is acquired.(This resin has reduced CO<sub>2</sub> exhaust by the entire lifestyle by about 30% compared with past ABS resin.:Trial calculation by Toray Ltd.)
  - \* The ratio of the dry weight of the biomass used against the dry weight of the commodity ,saying that Biomass degree.
- No halogen system flame resisting medicine substrate is adopted for the substrate of the product.



W52H

#### Casio Hitachi Mobile Communications Co.,Ltd.

2-229-1, Sakuragaoka, Higashiyamatoshi, Tokyo 207-0022, Japan  
 Tel Fax  
 E-mail  
 URL <http://av.hitachi.co.jp>

## Eco-products

EP-3-054

OA / IT equipment

mobile terminal for settlement of accounts

### Personal Digital Assistant (Mobile Terminal for Settlement of Accounts)

Personal digital assistant (Model:JT-H480MC) is connected to financial industry such as credit company or bank via settlement center. It meets the demand of expanding market (credit cards, debit cards or multi-payment account service.)

This product is convenient for various businesses such as life and non-life insurance company and delivery-to-home service company that must settle account on visits and deliveries.

- Compact and light weight (size reduced by 12% and weight reduced by 3% compared to our previous model)



Personal Digital Assistant : JT-H480MC-30

#### Matsushita Electric Industrial Co., Ltd. Panasonic System Solutions Company

4-3-1 Tsunashima-higashi, Kohoku-ku, Yokohama, Kanagawa  
 223-8639, Japan  
 Tel 81-45-544-3613 Fax  
 E-mail  
 URL <http://panasonic.co.jp/pss/en>

Available in : Japan

## Eco-products

EP-3-055

OA / IT equipment

radio communication equipments

### "Tag de Management", the management of assets, loan and documents with RF tag

This product supports the management of the customer's articles (assets and documents) by connecting the radio-frequency (RF) tags with the database. Since RF tags have the features of batch reading and non-contact reading, the user can do the inventory work speedily and reduce the workload significantly. The user can apply this product to various items: portable telephones, important documents, etc as well as OA equipment of the office and facilities of the factory. In addition, the user can finish the processing process effectively and safely, by letting the RF tag memorize the product information which is related to waste treatment and recycling: for example, constitution materials, parts, dismantle method, etc.



#### Mitsubishi Materials Corporation

1-297, Kitabukuro-cho, Omiya-ku, Saitama-shi, Saitama 330-8508, Japan  
 Tel 81-48-641-5995 Fax 81-48-641-5599  
 E-mail TAG-DE@mmc.co.jp  
 URL <http://www.kisp.jp> (Japanese Only)

Available in : Japan

ISO radio portable reader

## Eco-products

EP-3-056

OA / IT equipment

integrated service platform

### BladeSymphony 1000/320

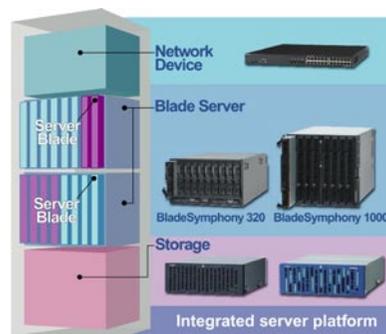
To sustain and support rapid business changes, BladeSymphony's new service platform concept supports the integration and management of the entire IT infrastructure covering server, storage and network systems.

The Enterprise-Class Blade Server "BladeSymphony 1000" and "BladeSymphony 320" which is suited for both data center and PC server integration are based on core blade server technologies. The BladeSymphony 320 provides about 90% fewer cables, 57% more space consolidation, and 34% power savings compared to 1U rack-mount servers.

BladeSymphony1000 and BladeSymphony320 have reduced energy consumption to less than 1/8 of the target energy consumption efficiency defined by Japan energy saving laws. In addition, BladeSymphony 1000 and BladeSymphony 320 comply with EU RoHS (Restriction of Hazardous Substances) Directive.

#### Hitachi,Ltd.

1, Horiyamashita, Hadano-shi, Kanagawa-ken 259-1392, Japan  
 Tel Fax  
 E-mail [bds\\_global@ml.itg.hitachi.co.jp](mailto:bds_global@ml.itg.hitachi.co.jp)  
 URL [http://www.hitachi.co.jp/products/bladesymphony\\_global/index.html](http://www.hitachi.co.jp/products/bladesymphony_global/index.html)



Integrated service platform "BladeSymphony"

## Eco-products

EP-3-057

OA / IT equipment

office computers

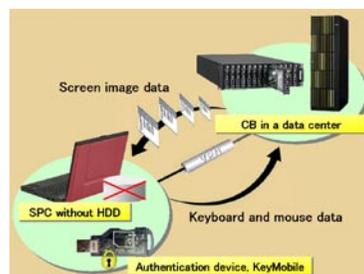
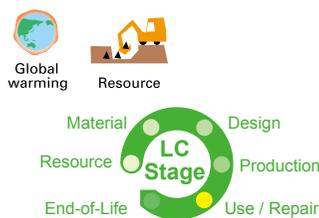
### Hitachi Secure Client Solution (SCS)

Hitachi SCS provides high security client-computing environments to reduce the risks of information leakage as well as energy consumption and CO<sub>2</sub> emission. The SCS consists of three characteristic products; a well-defined thin client computer named "Security PC" (SPC), a special-purpose authentication device, "KeyMobile™", and a blade PC, "Client Blade" (CB). Since the SPC has no hard-disk-drive and no output data, the SPC can reduce the risk of information leakage from the SPC itself. The KeyMobile™ authenticates the user of the SPC to reduce the risk of information leakage via unauthorized users. The CBs can be located in a secure data center to reduce the risk of information leakage from the data center. The SCS provides secure telework environment as well, which enables to work in their home or at other than their office location. This leads to the reduction of energy consumption and CO<sub>2</sub> emission, as teleworking can save energy-consuming commutation and optimize the number of office workers for their office space to reduce the office energy consumption and CO<sub>2</sub> emission.

#### Hitachi, Ltd., Platform Solution Division

Hitachi Systemplaza Shinkawasaki, 890 Kashimada, Saiwai, Kawasaki 212-8567, Japan  
Tel 81-44-549-1111 Fax  
E-mail  
URL <http://www.hitachi.co.jp/spc>

Available in : Only the domestic sale



Hitachi Secure Client Solution

## Eco-products

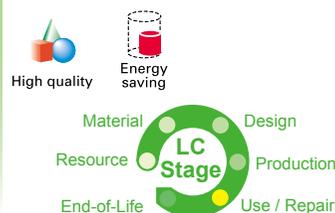
EP-3-058

OA / IT equipment

office computers

### Smallest and Thin-type Server with Silent Water-Cooling System

Thin-type Server is 95mm wide, 420mm long and 341mm high and it is capable of carrying 1TB Hard Disk and 800GB AIT. Silent Water-Cooling System Server carries the newest CPU with 4GB memory and three Hard Disk of 250GB. Even in the maximum operating mode under the 35 degrees Celsius, this product could achieve 30dB operating noise, which is equivalent to whispering. So the product is best for offices, hospitals, libraries, schools as well as SOHO where the silence is required.



#### NEC Corporation

7-1 Shiba 5 Cho-me, Minato-ku, Tokyo 108-8001, Japan  
Tel Fax  
E-mail <http://www.nec.co.jp/eco/en/inquiry.html>  
URL <http://www.nec.com/>

## Eco-products

EP-3-059

OA / IT equipment

personal computers

### Personal computer "VAIO"

The 868 grams\*<sup>1</sup>, 12.1 inch "VAIO type G" PC features carbon materials and a Mercury-free white LED backlight. The use of a slimmer, light guide panel and a compact, lightweight LCD system board have reduced display thickness by approximately 50% and weight by about 30% compared with conventional fluorescent tube LCDs.

Low power consumption, facilitated by a white LED backlight, energy-saving hardware design and software control of the CPU, LCD backlight drive voltages, memory, graphic accelerator optical drive and other features, give this notebook PC an incredible 12.5 hours of continuous battery life.\*<sup>2</sup>

\*1 "VAIO Owner-Made Model," a customized model available in Japan, with no optical drive and with a small battery pack, 512MB or 1GB memory (on board), flash memory, no Felica Port and no fingerprint sensor/security chip.

\*2 The longest length of time within the specification of "VAIO Owner-Made Model" PC with large battery pack.

#### Sony Corporation

1-7-1 Konan Minato-ku, Tokyo 108-0075, Japan  
Tel 81-3-6748-2111 Fax 81-3-6748-2244  
E-mail  
URL <http://www.sony.net>



VGN-G2AANS/G2AAPS

## Eco-products

EP-3-060

OA / IT equipment

personal computers

### Personal Computer "VAIO"

While PVC currently is not regulated by any laws that apply to chemical substances used in electronics products, Sony is working to eliminate PVC wherever a viable alternative is available. For example, Sony has succeeded in eliminating PVC from the casing and packaging materials used for its products. In addition, Sony has switched to Polyolefin materials for certain power cables, AC adapter cords and electrical cords used in its products. Sony plans to substitute PVC in all new models of Mobile products (excluding accessories) by the end of fiscal 2010, provided that the substitute meets all product quality and technical requirements. And also, Sony is promoting the use of alternatives to brominated flame retardants (BFRs), which can generate harmful substances if treated improperly after disposal. Sony plans to substitute BFRs in the casing and main PWBs of all new models of Mobile products by the end of fiscal 2010, provided that the substitute meets all product quality and technical requirements.

#### Sony Corporation

1-7-1 Konan Minato-ku, Tokyo 108-0075, Japan  
Tel 81-3-6748-2111 Fax 81-3-6748-2244  
E-mail  
URL <http://www.sony.net>



Personal Computer "VAIO" type-T(TZ)

## Eco-products

EP-3-061

OA / IT equipment

personal computers

### Endeavor ST110 ---a new compact PC of environment-conscious type.

Endeavor ST110 is a MoDT product which drastically achieved a power and material resource saving. MoDT stands for "Mobile on Desk-Top", which is a desk-top personal computer composed with laptop PC devices including the Intel mobile processors.

This product's typical power consumption is only 22W, which satisfies the specification of the international ENERGY STAR program version 4.0. The size is very small; a 2.7 liter dimension at 75 x 185 x 195mm, and weighing approximately only 2.2kg. It also conforms to the J-Moss green mark where all specified substances (Pb, Hg, Cd, Cr(VI), PBB, PBDE) are controlled to be under the reference values. As a result, this system's global warming load throughout the machine's life cycle is just one-third of an ordinary desk-top PC, only 105.8Kg in terms of CO<sub>2</sub>.

Laptop power consumption with desktop performance: The Endeavor ST110 - the leading edge of environment-conscious personal computer in a coming age.

#### EPSON DIRECT CORPORATION

1059, Muraimachi, Yoshikawa, Matsumoto City, Nagano,  
399-8703, Japan  
Tel 81-50-2000-3700 Fax 81-263-85-6024  
E-mail  
URL <http://epsdirect.jp>

Available in : Japan only



Endeavor ST110

## Eco-products

EP-3-062

OA / IT equipment

personal computers

### Adopted Bio-based Plastic to Notebook Personal Computer

BIBLO NX95X/D Employed bio-plastic for major housing: 30% of all the plastic. This bio-plastic, called polylactic acid is made from corn starch and reduces 15% less CO<sub>2</sub> than conventional plastics, PC-ABS over the entire product life-cycle. Since about 50% of the newly-developed plastic consists of natural materials, it can reduce the consumption of petroleum resources. Applied halogen-free resin for plastic chassis and recycled plastics for a part of components.



MV-BIBLO NX95X/D

BIBLO NX95X/D

#### Fujitsu Limited

1-1 Kamikodanaka 4-chome, Nakahara-ku, Kawasaki, Kanagawa  
211-8588, Japan  
Tel 81-44-754-3413 Fax 81-44-754-3326  
E-mail <http://jp.fujitsu.com/about/csr/eco/contact/>  
URL <http://jp.fujitsu.com/about/csr/eco/>

Available in : Japan

## Eco-products

EP-3-063

OA / IT equipments

personal computers

### World's Smallest Tablet-convertible Mobile PC

FMV-U8250/ LIFEBOOK U-1010

- World's Smallest\* Tablet-convertible UMPC: only 580g/1.3 lbs.
- Intelligently designed to suit your working style. Interact with LifeBook U1010 like a Notebook, Tablet PC or Hand-held
- Versatile with convertible form factor and pen input capability
- Optimal internet connectivity via built-in Wireless LAN, LAN and Bluetooth®
- Applied halogen-free resin for plastic chassis and recycled plastics for a part of components
- Conformed to the International Energy Star Program

\* As of 16 May 2007, according to Fujitsu's investigations.

#### Fujitsu Limited

1-1 Kamikodanaka 4-chome, Nakahara-ku, Kawasaki, Kanagawa  
211-8588, Japan  
Tel 81-44-754-3413 Fax 81-44-754-3326  
E-mail <http://jp.fujitsu.com/about/csr/eco/contact/>  
URL <http://jp.fujitsu.com/about/csr/eco/>

Available in : Asia, North America, Europe, Middle East



FMV-U8250/ LIFEBOOK U-1010

## Eco-products

EP-3-064

OA / IT equipments

personal computers

### "Satellite", the TOSHIBA notebook PC which pursued high quality design and robustness

This hard-to-break PC reduces generation of waste.  
By reducing the use of screws, Toshiba has improved resource saving and recycling.

#### Resource saving:

- Robust PC  
Adoption of the HDD protection system.  
Shock-absorbing structure for HDD, LCD panel, main printed board, etc;  
Spill resistant keyboard delays water infiltration.
- Reduction in use of screws  
By adopting slide/ hook fixation, the number of screws used was reduced by 30% compared with the benchmark product.

#### TOSHIBA CORPORATION Personal Computer & Network Company

1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan  
Tel Fax  
E-mail  
URL [http://dynabook.com/pc/index\\_j3.htm](http://dynabook.com/pc/index_j3.htm)



dynabook Satellite K20

## Eco-products

EP-3-065

OA / IT equipments

personal computers

### “Qosmio”, the AV notebook PC equipped with various advanced functions

The flagship AV notebook-PC fully equipped with various advanced functions: Full hi-vision 17-inch widescreen, Double-tuner for Terrestrial digital, HD DVD-R, 4-speaker system, web-camera, etc.

• **Resource Saving:**

By integrating all the functions of Note PC, TV, DVD player/recorder and picture phone into one “QOSMIO”, energy saving has been realized as a whole



Qosmio G40

**TOSHIBA CORPORATION**  
Personal Computer & Network Company

1-1, Shibaura 1-chome, Minato-Ku, Tokyo 105-8001, Japan  
Tel Fax  
E-mail  
URL [http://dynabook.com/pc/index\\_j3.htm](http://dynabook.com/pc/index_j3.htm)

## Eco-products

EP-3-066

OA / IT equipments

personal computers

### Lightweight and low-environmental-impact mobile PC

Adoption of LED backlight eliminates use of mercury.

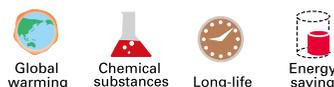
This PC offers not only cutting-edge mobile performance but also outstanding environmental performance.

• **Energy saving:** Low energy consumption achieved by low-voltage unit and power management system. (idle and/or standby)

• **Resources saving:**

- 0.45mm thick magnesium alloy case.
- Thin and light LCD with 0.2mm thick glass panel.
- High density surface-mounting technology reduces size of printed circuit board. (smaller pattern width, pattern pitch and parts size)
- Thin, light DVD super-multi-drive, only 7mm thick.

• **Reduction in materials affecting the environment:** LED LCD backlight realize a mercury-free PC.



dynabook SS RX1

**TOSHIBA CORPORATION**  
Personal Computer & Network Company

1-1, Shibaura 1-chome, Minato-Ku, Tokyo 105-8001, Japan  
Tel Fax  
E-mail  
URL [http://dynabook.com/pc/index\\_j3.htm](http://dynabook.com/pc/index_j3.htm)

## Eco-products

EP-3-067

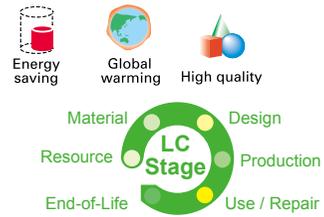
OA / IT equipments

PC server

### Ultra-Compact and Energy Efficient Tower Server

The PRIMERGY TX120 tower server is a unique offering from Fujitsu

- Energy efficient and compact, yet powerful.
- Energy efficient: consumes 40% less power than a standard tower server
- Smallest footprint: 1/3 size of a standard tower server
- Virtually silent Operation: 32 dB
- "Intel Server & Storage Innovation Award" Winning product



PRIMERGY TX120

#### Fujitsu Limited

1-1 Kamikodanaka 4-chome, Nakahara-ku, Kawasaki, Kanagawa  
211-8588, Japan  
Tel 81-44-754-3413 Fax 81-44-754-3326  
E-mail <http://jp.fujitsu.com/about/csr/eco/contact/>  
URL <http://jp.fujitsu.com/about/csr/eco/>

Available in : Asia, North America, Europe, Middle East

## Eco-products

EP-3-068

OA / IT equipments

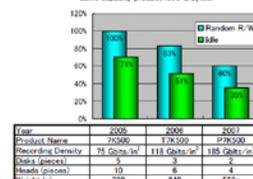
hard disk drive

### Energy/Resource Efficient Hard Disk Drive

1. Energy Efficient Desktop Hard Drive with High Performance and High Recording Density
    - Through the innovative technologies improved recording density significantly
    - Achieved 14% resource saving by the reduction of heads and disks
    - By adoption of innovative technology, achieved 40% reduction of energy consumption at idle time
  2. Eco-Friendly Technologies
    - HiVERT\* Technology
      - Replace linear regulators with switching regulators to achieve more efficient voltage conversion in the electronics
    - SOC (System on Chip) Technology
      - The use of LSI with more power-efficient profile, which further reduces power consumption.
    - Advanced Power Management Capabilities
      - Unloaded and lower the power consumption of hard drives in idle mode that constitutes most of the life time.
- \* HiVERT means Hitachi Voltage Efficiency Regulator Technology



Energy/Resources saving transition of the same capacity product (500 G bytes)



Deskstar P7K500

#### Hitachi Global Storage Technologies

1 Kirihiro-cho, Fujisawa-shi, Kanagawa-ken 252-0811, Japan  
Tel Fax  
E-mail  
URL <http://www.hgst.com/portal/site/en/>

## Eco-products

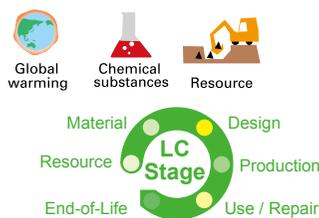
EP-3-069

OA / IT equipments

magnetic disc equipments

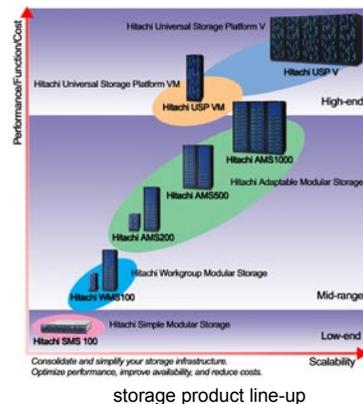
### Hitachi Storage Solutions

- Power consumption is reduced from 10 to 30 percent compared with the previous model.
- Lead-free solder is used in circuit board.
- Full compliance to the RoHS directive by substituting hazardous substances, and employing our traceability system for components through manufacturing.
- The return and collection systems (for example, those meet the WEEE Directive) for the end-of-life products are constructed. And the collected products are re-used and recycled.



#### Hitachi, Ltd., Disk Array System Division

6-26-2 Minami-ooi, Shinagawa-ku, Tokyo 140-0013, Japan  
 Tel 81-3-5471-2201 Fax 81-3-5471-2549  
 E-mail [www-info-hss@ml.itg.hitachi.co.jp](mailto:www-info-hss@ml.itg.hitachi.co.jp)  
 URL <http://www.hds.com/products/storage-systems/>



storage product line-up

## Eco-products

EP-3-070

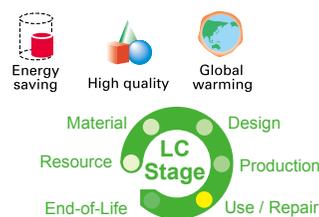
OA / IT equipments

magnetic disc equipments

### High Energy Efficient Mobile Hard Disk Drives

2.5 inch Mobile Hard Disk Drive, MHY2 BH series / MHY2 BS series

- Broad capacity lineup
- Suitable for laptop PCs and external HDDs (BH Series)
- Suitable for critical business servers and industrial systems (BS Series)
- Quiet operation: 2.4 B
- High energy efficiency: 0.0024W/GB (MHY2BH)
- Low energy consumption: 1.9W when read/write



#### Fujitsu Limited

1-1 Kamikodanaka 4-chome, Nakahara-ku, Kawasaki, Kanagawa  
 211-8588, Japan  
 Tel 81-44-754-3413 Fax 81-44-754-3326  
 E-mail <http://jp.fujitsu.com/about/csr/eco/contact/>  
 URL <http://jp.fujitsu.com/about/csr/eco/>



MHY2 BH series / MHY2 BS series

Available in : Asia, North America, Europe, Middle East

## Eco-products

EP-3-071

OA / IT equipments

magnetic disc equipments

### Compact entry-level Disk Array

ETERNUS2000 M50/ M100/ M200

Compact, cost-effective entry-level storage systems with high-level system reliability. Ideal for small/medium size enterprises and distributed system environments.

- Save up to 40% in power consumption<sup>1</sup>
- Supported Eco-mode using MAID<sup>2</sup> technology: This enables to reduce power consumption up to 15%<sup>3</sup>
- 60% less components means greater reliability<sup>1</sup>
- Employed RAID-on-chip technology
- 65% Smaller printed circuit board<sup>1</sup>
- Quiet operation: 42 dB equals library-level tranquility.
- Compact 2U design, just 89 mm high

1: Comparison with former model, ETERNUS4000 Model80.

2: MAID: An acronym for "Massive Arrays of Inactive Disks". This technology extends the life of disk drives as well as reducing power consumption by scheduling spinning off specific drives.

3: Comparison between all disk drives operating for 24 hours and backup disks operate for 5 hours.

#### Fujitsu Limited

1-1 Kamikodanaka 4-chome, Nakahara-ku, Kawasaki, Kanagawa  
211-8588, Japan

Tel 81-44-754-3413 Fax 81-44-754-3326

E-mail <http://jp.fujitsu.com/about/csr/eco/contact/>

URL <http://jp.fujitsu.com/about/csr/eco/>



Available in : Asia, North America, Europe, Middle East

ETERNUS2000

## Eco-products

EP-3-072

OA / IT equipments

printers

### PIXMA MP600: A4 Inkjet All-In-One, Environmentally Conscious

Canon PIXMA MP600 is a A4 Inkjet All-In-One printer. It offers excellent functions: the high-definition photo-printing with exceptional resolution up to 9600dpi and ink droplets of 1pl (pico-liter), the 2400dpi high-resolution scanner, and the direct printing from a digital camera and a memory card, and other functions.

Consideration for the environment is actively taken up, too. As for energy saving, the power consumption of 90% has been reduced compared with the conventional printer PIXMA MP760 with the "On Demand Operation" technology and the energy saving technology for the power-off and standby mode.

As for resource saving, 44% reduction by volume and 19% reduction by weight have been achieved in comparison with those of the PIXMA MP760. As for the elimination of hazardous substances, the substitutes have been developed, hence the product conforms to the EU RoHS directive.

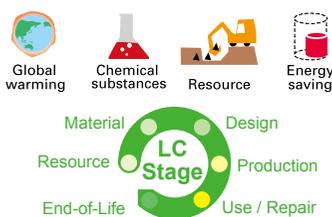
#### Canon Inc.

3-30-2, Shimomaruko, Ota-ku, Tokyo 146-8501, Japan

Tel 81-44-542-2111 Fax

E-mail

URL <http://www.canon.com>



Inkjet All-In-One Printer PIXMA MP600

## Eco-products

EP-3-073

OA / IT equipments

printers

### Canon PIXMA iP4300 Inkjet Printer, Environmentally Conscious

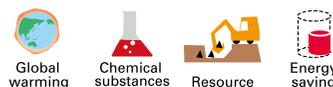
Canon PIXMA iP4300 is a A4 Inkjet printer. It offers excellent functions: the high-definition photo-printing with exceptional resolution up to 9600dpi and ink droplets of 1pl (pico-liter), and the direct printing from a digital camera and other functions.

Consideration for the environment is actively taken up, too. As for energy saving, the power consumption of 39% has been reduced compared with the conventional printer S600 with the energy saving technology for the power-off and standby mode. As for resource saving, 49% reduction by volume and 32% reduction by weight have been achieved in comparison with those of the i865 (under the condition that automatic two-sided printing unit and paper-feeding cassette were mounted ).

As for the elimination of hazardous substances, the substitutes have been developed, hence the product conforms to the EU RoHS directive.

#### Canon Inc.

3-30-2, Shimomaruko, Ota-ku, Tokyo 146-8501, Japan  
Tel 81-44-542-2111 Fax  
E-mail  
URL <http://www.canon.com>



Inkjet Printer PIXMA iP4300

## Eco-products

EP-3-074

OA / IT equipments

printers

### Color Laser Printer Ricoh Aficio SP C410DN/C411DN

Low Cost, Low Environmental Impact, & High Performance Full Color Laser Printer with 25 (C410DN) and 30 (C411DN) images per minute for both full color and black & white printing modes: These latest full color laser printers can stay at Sleep mode while not in use, consuming only 6W. It takes only 21 seconds for warming-up again from Sleep mode. So, with less waiting time, more energy can be saved.

The size of these models is rather small, but the duplex unit is a standard. So, it is possible to save paper by making duplex prints as well as grouping prints up to 32 pages into both sides of single sheet of paper. Print settings for duplex and grouping modes are very simple by using Ricoh's unique graphical printer driver screen, resulting in much less mistake to print what you need.

In line with all Ricoh products, these models can comply with EU RoHS requirements in chemical substances and are minimal ozone and noise emissions.

#### Ricoh Company, Ltd.

Ricoh BLDG, 8-13-1, Ginza, Chuo-ku, Tokyo 104-8222, Japan  
Tel 81-3-6278-5209 Fax 81-3-3543-9347  
E-mail [envinfo@ricoh.co.jp](mailto:envinfo@ricoh.co.jp)  
URL <http://www.ricoh.com/environment/>



Ricoh Aficio SP C410DN/C411DN

Available in : Asia Pacific Region

## Eco-products

EP-3-075

OA / IT equipments

printers

### Laser Printer Ricoh Aficio AP410/AP410N

Energy Saving High Performance Black & White Laser Printer with 27 images per minute:

These printers can stay at Sleep mode while not in use, consuming only 4.5W.

It takes less than 12 seconds for warming-up again from Sleep mode. So, with less waiting time, more energy can be saved.

The size of these models is rather small, but the duplex unit is an option. So, it is possible to save paper by making duplex prints as well as grouping prints up to 16 pages into both sides of a single sheet of paper. Even in such paper saving modes, operation is very simple by using Ricoh's unique graphical printer driver screen, resulting in much less mistake to print what you need.

In line with all Ricoh products, these models have minimal ozone and noise emissions.

#### Ricoh Company, Ltd.

Ricoh BLDG., 8-13-1 Ginza, Chuo-ku, Tokyo 104-8222, Japan  
Tel 81-3-6278-5209 Fax 81-3-3543-9347  
E-mail [envinfo@ricoh.co.jp](mailto:envinfo@ricoh.co.jp)  
URL <http://www.ricoh.com/environment/>



Ricoh Aficio AP410/AP410N

Available in : Asia Pacific Region

## Eco-products

EP-3-076

OA / IT equipments

printers

### Energy Saving Inkjet Printer, Epson Stylus Photo RX585/595/610

This is an all-in-one printer having the functions of copier, scanner and printer itself.

#### <Energy saving>

The design of energy saving was continually advanced, and thus 28% of the total power consumption per day was reduced in comparison with that of the conventional model of our company. Compared to the model of 4 years ago, 73% reduction has been achieved.

#### <Improvement of recyclability>

For plastic parts of the cover and the housing, the luster materials without paints were used in terms of recyclability.

#### <Elimination of hazardous substances>

The product conforms to the EU RoHS directive.

#### SEIKO EPSON CORPORATION

3-3-5 Owa, Suwa-shi, Nagano-ken 392-8502, Japan  
Tel 81-266-52-3131 Fax  
E-mail  
URL <http://www.epson.com>



Epson Stylus Photo RX585/595/610

## Eco-products

EP-3-077

OA / IT equipments

printers

### Energy Saving and Resource Saving Inkjet Printer, Epson Stylus C120/C110/D120

A high-speed printing of 37 pages per minute has been realized for A4-size monochrome document. In spite of an ink-jet printer, the adoption of high-speed "MACH head" and dual "Black" cartridges enabled a high speed printing of the laser beam printer level. It is cable of satisfying the sudden need of rapid output. Hence, it is a reliable printer for business work.

<Reduction of the global-warming load>

Reduction of the load given by the product was promoted throughout its life cycle, and CO<sub>2</sub> discharge was reduced by 11% compared to that of the conventional model of our company.

<Energy saving>

Energy saving was prompted, and 61% of the total power consumption per day was drastically reduced.

<Resource saving>

Miniaturization and lightening was promoted, and 21% reduction by volume and 7% reduction by weight have been achieved, respectively.

<Elimination of hazardous substances>

The product conforms to the EU RoHS directive.

#### SEIKO EPSON CORPORATION

3-3-5 Owa, Suwa-shi, Nagano-ken 392-8502, Japan

Tel 81-266-52-3131 Fax

E-mail

URL <http://www.epson.com>



Epson Stylus C120/C110/D120

## Eco-products

EP-3-078

OA / IT equipments

printers

### Energy Saving & Resource Saving Inkjet printer, Epson Stylus Pro 3800/3800C/3850

This product is a large-format inkjet printer. Despite the available paper size of A2(+) at maximum, the product realized the size as the same as the A3-printers.

<Reduction of global-warming load>

Reduction of the load was promoted throughout the life cycle of the product, and CO<sub>2</sub> discharge was reduced by 44% in comparison with that of the conventional model of our company. The global-warming load at the stage of raw material production was reduced, too. The reduction is 55%.

<Energy saving>

Energy saving was promoted, and the total power consumption per day was reduced by 33%.

<Resource saving>

Miniaturization and lightening was promoted, and 71% reduction by volume and 57% reduction by weight have been achieved, respectively.

<Elimination of hazardous substances>

The product conforms to the EU RoHS directive.

#### SEIKO EPSON CORPORATION

3-3-5 Owa, Suwa-shi, Nagano-ken 392-8502, Japan

Tel 81-266-52-3131 Fax

E-mail

URL <http://www.epson.com>



Epson Stylus pro 3800/3800C/3850

## Eco-products

EP-3-079

OA / IT equipments

printers

### Energy Saving Laser printer, Offirio LP-S5000

Quiet running of the product has been realized by the adoption of a cooling fan-less structure. On the basis of the design to offer countermeasures against heat, the cooling-fan that comes to be the source of noise was discontinued. Thus, we can concentrate on our business work without being annoyed by the sound of printing.

<Energy saving>

The total power consumption per day was reduced by 27% compared to that of the conventional model of our company.

<Elimination of hazardous substances>

The product conforms to the EU RoHS directive.



Color Laser printer Offirio LP-S5000

#### SEIKO EPSON CORPORATION

3-3-5 Owa, Suwa-shi, Nagano-ken 392-8502, Japan  
Tel 81-266-52-3131 Fax  
E-mail  
URL <http://www.epson.com>

## Eco-products

EP-3-080

OA / IT equipments

printers

### Eco-Friendly A4 Color Laser Printer

DocuPrint C1100 is a safely designed and eco-friendly A4 color printer, pursuing (1) global warming prevention, (2) natural resource conservation and (3) chemical risk reduction.

<Reduction in size and weight>

By adopting the small size lightweighted marking engine, frame, cover, and motor, DocuPrint C1100 realized lightweighting of 46% compared with the existing machine (DPC525A). The base machine is easy portable weighing 13.2 kg only (consumables excluded).

<Energy saving performance>

The power consumption per week is 1.2 kWh (International Energy Star Program) which is the highest energy saving performance of this class, 50% reduction from the existing model. It features 5 W of low power consumption in sleep mode and 20 seconds of recovery time.



#### Fuji Xerox Co., Ltd.

9-7-3 Akasaka, Minato-ku, Tokyo 107-0052, Japan  
Tel 81-3-6271-5111 Fax  
E-mail  
URL <http://www.fujixerox.co.jp/>

Available in : Japan, Asia Pacific region

DocuPrint C1100 (Japan), DocuPrint C1110/C1110B (AP region)

## Eco-products

EP-3-081

OA / IT equipments

printers

### Eco-Friendly A3 Color Printer for Office

DocuPrint C2250 is equipped with two industry-first environmental technologies, as well as new print technology for high-resolution, high-quality images.

<Enhanced environmental performance with lead-free shafts and biomass plastic>

Industry-first environmental technologies include: (1) shafts that do not contain lead, a designated hazardous substance, in parts for the output unit, including paper feeder; and (2) a biomass plastic that comprises more than 30 percent of plant-derived constituent by weight in the moving part of the machine (drum cover).

<Enhanced energy saving performance>

An energy-saving controller, high-efficient lamp and temperature-controlling technology reduce power consumption in sleep mode from below 5W (conventional machines) to below 1.5W. In terms of TEC, power consumption is cut to 1.63kWh a week.

<LED printhead system for high-resolution, high-quality images>

A newly developed LED printhead is incorporated to write images on the photoreceptor drum. Fuji Xerox has realized high image quality of 1,200 x 2,400 dpi, which is equivalent to or better than laser systems.

#### Fuji Xerox Co., Ltd.

9-7-3 Akasaka, Minato-ku, Tokyo 107-0052, Japan

Tel 81-3-6271-5111 Fax

E-mail

URL <http://www.fujixerox.co.jp/>



Available in : Japan (Available in Asia Pacific region in 2008)

DocuPrint C2250

## Eco-products

EP-3-082

OA / IT equipments

printers

### Kyocera Mita Ecosys Printer FS-2000D

Kyocera Mita's Monochrome Laser Printer, FS-2000D is Kyocera's leading product in environmental design. It incorporates Kyocera's proprietary long life technology to minimize the replacement of consumable parts. This approach makes it environmentally conscious and cost efficient because toner is the only consumable for this printer. We prioritize recycling of all parts after use of the products. That is why it incorporates easy to disassemble subsets and labels for all parts with their material names to make recycling easy.

The products use non-burnable, non-halogen type polycarbonate ABS compounds and packaging, so even in the case of incineration dioxins are not emitted.

The FS-2000D is compliant with the RoHS Directive that was initiated in Europe in 2006 to eliminate substances that are harmful to the environment and also with the standards of the International Energy Star Program.

#### KYOCERA MITA Corporation

2-28, 1-Chome, Tamatsukuri, Chuo-ku, Osaka 540-8585, Japan

Tel 81-6-6764-3555

E-mail

URL <http://www.kyoceramita.com>



Ecosys Printer FS-2000D

## Eco-products

EP-3-083

OA / IT equipments

multi function printer

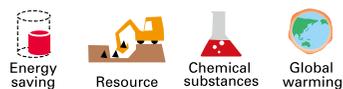
### Compact Multi Function Printer with built-in networking features, MF4270

Energy saving and high speed are balanced using Canon's original On-Demand fixing technology.

The power consumption during sleep mode is about 3W, and the recovery time is just 10 seconds.

Output speed of 20 pages per minute for printing and copying, with a first copy output time in 9 seconds. Duplex and 2-in-1 printing functions reduces paper consumption. The slim body of 390mm wide saves the space and fits neatly on your desk.

Further, this product is compliant with the EU RoHS directive which restricts the use of hazardous substances, and it means reduction of environmental burden at the end-of-life.



MF4270

#### Canon Inc.

30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo 146-8501, Japan  
 Tel 81-3-3758-2111 Fax 81-3-3758-1160  
 E-mail  
 URL <http://www.canon.com>

## Eco-products

EP-3-084

OA / IT equipments

displays

### Electronic Paper Display "Albirey"

Albirey is one of new generation displays applying electronic paper technologies. The display is reflective without the use of backlight, and it uses small power only when a static image is first displayed; the information remains on display for a long term without any power supply. This eye-friendly resolution display just like paper can be read easily in bright sunlight and can be viewed from any angles. Since this ultra-thin, lightweight display uses an embedded battery and uses wireless communications, it can easily be set up; there is no need for appurtenant work such as the laying of power and LAN cables. Albirey greatly contributes to the preservation of resources in various ways; providing rewritable digital solution instead of paper; running on a battery and so reducing electricity consumption; and avoiding the need for printing and transportation materials, which leads to the reduction of paper and carbon dioxide emission. Its effect is 87% reduction of carbon dioxide emission for five years.



#### Hitachi, Ltd.

Shinagawa InterCity B, 13th Floor 2-15-2, Kounan, Minato-ku, Tokyo 108-0075, Japan  
 Tel 81-3-5495-7053 Fax 81-3-5495-7065  
 E-mail [kaoru.suzuki.dh@hitachi.com](mailto:kaoru.suzuki.dh@hitachi.com)  
 URL <http://www.hitachi.co.jp/Div/omika/solution/display/> (in Japanese Only)

## Eco-products

EP-3-085

OA / IT equipments

digital pen

### Digital pen

A digital pen is an interface device that converts analog data written on special paper into digital data. It can be used in a wide variety of applications.

Hitachi Maxell's digital pens have been designed so that their circuits becomes lead-free in compliance with the RoHS directive. The pens have also been integrated more compact in size and lightweight, and consequently the amount of plastic materials used has been reduced.

#### Hitachi Maxell, Ltd.

1-1-88 Ushitora, Ibaraki-shi, Osaka 567-8567, Japan  
 Tel 81-72-623-8250 Fax 81-72-623-9014  
 E-mail [kankyo@maxell.co.jp](mailto:kankyo@maxell.co.jp)  
 URL <http://www.maxell.co.jp/e/products/industrial/digitalpen/index.html>



DP-201

## Eco-products

EP-3-086

OA / IT equipments

network server

### Energy-efficient Network Server

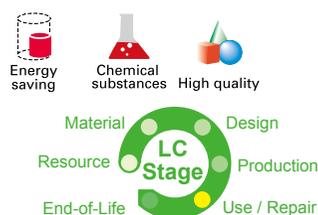
IPCOM EX1000/ EX1200/ EX2000 The IPCOM EX series integrate the security function\* into the server load balancer. Measures against the threat of security are concentrated on one-point, and a strong security environment is offered.

\* Functions such as firewall, IPS, and VPN are installed, and strong security is offered as UTM.

- More than 57% energy efficient
- Lead-free
- RoHS compliant

#### Fujitsu Limited

1-1 Kamikodanaka 4-chome, Nakahara-ku, Kawasaki, Kanagawa 211-8588, Japan  
 Tel 81-44-754-3413 Fax 81-44-754-3326  
 E-mail <http://jp.fujitsu.com/about/csr/eco/contact/>  
 URL <http://jp.fujitsu.com/about/csr/eco/>



IPCOM EX2000IN

Available in : Japan

## Eco-products

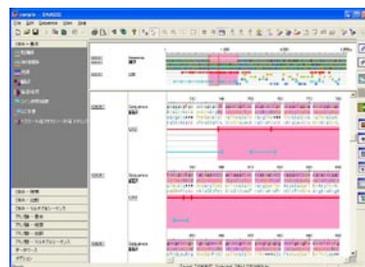
EP-3-087

OA / IT equipments

analytical instruments

### Bioinformatics Software for DNA/RNA/Amino Acid Sequence Analysis DANASIS Pro

Life science research is making great advances in such broad applications as drug discovery, food safety and environmental conservation. DNASIS Pro bioinformatics software contributes to life science research by helping scientists be more productive. DNASIS Pro lets researchers edit, annotate and analyze DNA, RNA and amino acid sequences. It includes a comprehensive set of analytical tools that can be expanded with optional homology search, multiple alignment, and base calling and sequence assembly modules. Its unique, customizable features are designed to save researchers time and accelerate life science research.



#### Hitachi Software Engineering Co., Ltd.

4-12-7, Higashishinagawa, Shinagawa-ku, Tokyo 140-0002, Japan  
 Tel 81-3-5479-8831 Fax  
 E-mail sales24@hitachisoft.jp  
 URL <http://www.hitachisoft.jp/dnasis/>

Available in : Japan

DNASIS Pro

## Eco-products

EP-3-088

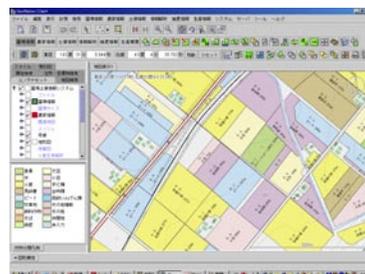
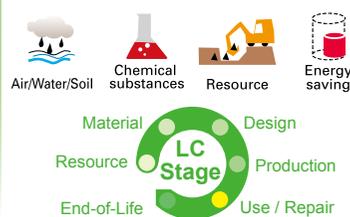
OA / IT equipments

information recording materials

### Agriculture Information Management System:GeoMation Farm

GeoMation Farm manages cultivation-related information linking with the corresponding farmland. By utilizing this information, farmers can carry out efficient (low cost, high quality, high quantity) farming. This efficiency leads to the following nature-friendly farming.

- 1) By analyzing the relation between fertilizer and quality/quantity of the crop, farmers can judge the suitable amount of fertilizer. This leads to low environmental impacts.
- 2) Remote sensing technology can judge the percentage of dryness of the ears of wheat. By using this technology, farmers can harvest only dry wheat and this lead to energy-saving for additional drying.
- 3) By plotting affected area of the outbreak of disease or harmful insect on the farmland map, farmers can prevent and exterminate these pest with low agricultural chemical.



#### Hitachi Software Engineering Co., Ltd.

4-12-7 Higashishinagawa, Shinagawa-ku, Tokyo 140-0002, Japan  
 Tel 81-3-5479-8831 Fax  
 E-mail sales24@hitachisoft.jp  
 URL <http://hitachisoft.jp/geomation/farm>

Available in : Japan

Agriculture Information Mgmt : GeoMation Farm

## Eco-products

EP-3-089

OA / IT equipments

electronic cash registers

### Electronic register with enhanced visibility and energy & resource savings

The product is an electronic cash register which pursued the merit of usability. The visibility was improved by the twin screen of large liquid crystal & LED. The universal key board easy to use and the one-touch replacing device of paper were equipped. As well as these trials, we address the items of environment consideration.

- **Energy Saving:** Power consumption at the stand-by state was reduced by 43% by installing an energy saving function and a high integration circuit, (the ratio to the conventional equipment).
- **Resource Saving:** Setting areas were reduced by 16% by sizing down the parts of display, keyboard and drawers, (ibid).



Electronic cash registers MA-660

#### TOSHIBA TEC CORPORATION

Oval Court Ohsaki Mark East 2-17-2, Higashi Gotanda, Shinagawa-ku,  
Tokyo 141-8664, Japan  
Tel Fax  
E-mail  
URL <http://www.toshibatec.co.jp/index.html.ja>  
<http://www.toshibatec.co.jp/index.html.html>

Available in : JAPAN

## Eco-products

EP-3-090

OA / IT equipments

pos terminal

### Environment-conscious long life POS terminal for distribution business

This product is a POS terminal, which has realized the customer's demand, the environmental consideration, and the optimization of the cost, by the design based on the Life Cycle Planning (LCP)<sup>\*1</sup> technique.

- **Improvement of recycling ability:** Adopted was the structure which was designed by considering disassembly was adopted, and thereby the number of screws was reduced by 33% compared to that of the conventional apparatus.
- **Extension of life:** On the basis of the value-life analysis, the separated structure of the engine board and 1/F region was adopted, for which upgrading is possible.
- **Improvement of maintenance:** A sliding mechanism was used, which makes it easy to replace the engine board units, HDD, and the back-up battery.
- **Elimination of harmful chemical substances:** Halogen-free plastic and halogen-free printed circuit board were adopted.

<sup>\*1</sup> **Life Cycle Planning (LCP):** A series of processes involving determination of target specifications for a product and its life cycle and determination of an environmentally conscious design concept in order to satisfy the determined target specifications



POS Terminal WILLPOS-Unity M-7000

#### TOSHIBA TEC CORPORATION

Oval Court Ohsaki Mark East 2-17-2, Higashi Gotanda, Shinagawa-ku,  
Tokyo 141-8664, Japan  
Tel 81-3-6422-7160 Fax 81-3-6422-7121  
E-mail  
URL <http://www.toshibatec.co.jp/index.html.ja>  
<http://www.toshibatec.co.jp/index.html.html>

Available in : JAPAN

## Eco-products

EP-3-091

OA / IT equipments

decolorable toner

### Decolorable toner for repeated use of OA paper

Decolorable toner "e-blue" is a solution for the reduction of the OA paper used in the office.

Printed-paper with decolorable toner can be reused repeatedly by using a heat eraser.

The utilization of this decolorable toner results in reduction of the purchase and disposal of paper, leading to reduced carbon dioxide emissions as well as the dissemination of environmental consciousness among employees. The introduction of e-blue into offices decreases paper consumption by 60 % (resulted at Toshiba). Decolorable toner will contribute to requirement of ISO14001 standards as well as environmental management of company.

- **Energy Saving:** With a small electric power, a large amount erasing can be performed. The design is an environment-conscious design not using the useless heat. The discharge of carbon dioxide was reduced by decreasing the paper consumption.
- **Resource Saving:** The purchase amount of paper, and the wasting amount of paper was reduced owing to the use of paper without waste.

#### TOSHIBA CORPORATION Industrial Systems Company

1-1, Shibaura 1-chome, Minato-Ku, Tokyo 105-8001, Japan  
 Tel 81-3-3457-3760 Fax 81-3-5444-9188  
 E-mail  
 URL [http://www.toshiba.co.jp/efort/product/ink/index\\_j.htm](http://www.toshiba.co.jp/efort/product/ink/index_j.htm)



Available in : JAPAN

Heat eraser, Decolorable Toner "e-blue", MFP suitable for e-blue

## Eco-products

EP-3-092

OA / IT equipments

intel architecture server

### Compact server with minimal noise and greatly reduced power consumption

This server is resistant to vibration and dust because it uses Flash memory drive instead of HDD. It also offers greater energy saving and resource saving.

- **Energy saving:** 35% reduction in power consumption compared with the benchmark product.
- **Resources saving:** 60% reduction in the weight of the storage unit by Flash memory drive.
- **Reduction in materials affecting the environment:** Use of lead-free soldering for electronic packaging ahead of competitors. (In the server)



#### TOSHIBA CORPORATION Personal Computer & Network Company

1-1, Shibaura 1-chome, Minato-Ku, Tokyo 105-8001, Japan  
 Tel Fax  
 E-mail  
 URL [http://dynabook.com/pc/index\\_j3.htm](http://dynabook.com/pc/index_j3.htm)

Available in :

MAGNIA Z330S (F model)

## Eco-products

EP-3-093

OA / IT equipments

media player

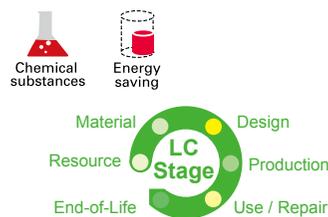
### 3.5 type LCD media player equipped with "One Seg." tuner and SD card slot

As for MEV41, "One Seg." tuner and "One Seg." picture correction technology are mounted on it. Moreover, MEV41 was equipped with a SD card slot, as well as 4GB built-in flash memory. Direct recording of "One Seg." program to the SD card became possible. The transfer of the program recorded in main body to the SD card also became possible. Furthermore, MEV41 is equipped with the high-resolution 3.5 type QVGA TFT-LCD which can reproduce about 260,000 colors at the maximum.

- **Energy Saving:** The power consumption for the audio regeneration reduced from 411mV of MET50JS to 200mV of MEV41
- **Resource Saving:** Though the LCD size was enlarged to 3.5 types owing to the adoption of thin type design and the NAND flash memory, the main body weight is nevertheless reduced to 167.5g which is about 71%

**TOSHIBA CORPORATION**  
Digital Media Network Company

1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan  
Tel Fax  
E-mail [masafumi.ueda@dpg.toshiba.co.jp](mailto:masafumi.ueda@dpg.toshiba.co.jp)  
URL <http://www.toshiba.co.jp>



gigabeat V41 MEV41

## Eco-products

EP-3-094

OA / IT equipments

media player

### Light and slim body, portable media player having a built-in flash memory

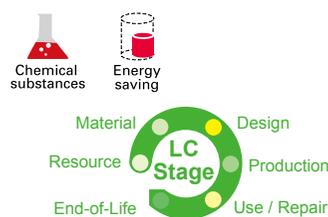
MET401 contains 4GB flash memory. If music, about 960 pieces is recordable, and if animated cartoon, up to 16 hour recording is possible.

It is equipped with a wireless LAN facility based on IEEE802.11b/g, and it is possible to use the "pod cast". Dimensions are 54.0mm width and 85.6mm length. These dimensions are almost the same as those of a credit card. The thickness is 9.9mm and the weight is about 58g. A lightweight slim body has been realized.

- **Energy Saving:** The power consumption for the audio regeneration reduced from 411mV of MEG50JS to 200mV of MET401.
- **Resource Saving:** The weight of main body was decreased to 1/4, namely 58g, by the adoption of a thin-type design and the NAND flash memory.

**TOSHIBA CORPORATION**  
Digital Media Network Company

1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan  
Tel Fax  
E-mail [masafumi.ueda@dpg.toshiba.co.jp](mailto:masafumi.ueda@dpg.toshiba.co.jp)  
URL <http://www.toshiba.co.jp>



gigabeat T401 MET401

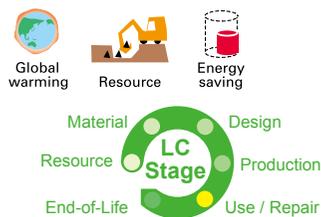
### Compact-type business-use digital-method 3CCD camera for image processing

IK-TF9U is a 3CCD camera of head separate type. It is the smallest and the lightest in the optimum class for the image processing use, as of October, 2007. A 1/3 type 800000 pixel (the total number of all picture elements) progressive scan CCD has been mounted. By oblique pixel staggering and pixel interpolation processing, the image output of 20 frames per second is possible with the image of QXGA (2048×1536) equivalency.

- **Energy Saving:** The power consumption was reduced by 24% by selecting the low power consumption parts and by improving the circuit integration.
- **Resource Saving:** The product weight of the head plus CCU was reduced by improving the circuit integration and by selecting a small design.

#### TOSHIBA CORPORATION Digital Media Network Company

1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan  
Tel Fax  
E-mail [teruyuki.morimoto@dpg.toshiba.co.jp](mailto:teruyuki.morimoto@dpg.toshiba.co.jp)  
URL <http://www.toshiba.co.jp>



IK-TF9U/9H

## Eco-products

EP-4-001

OA / Furniture

metal desks, tables and chairs

### Okamura "Visconte" series office-chair for multifunctional seating.

"Visconte" series is the multifunctional office-chair of the middle class to which there is a great demand in the most company's office rooms. We are approaching to the environmental consideration as follows.

1. As for plastic parts which occupy 43% of the product by weight, the regenerated plastic materials of more than 10% has been used. Ten per cent is the standard value conforming to the green purchase method.
2. The product was designed in consideration for easy recycling, and the decompositon rate to single materials has exceeded 85%.
3. Raw material name was displayed on the surface of main parts.
4. In order to maximally draw out the characteristics and functions and of the engineering plastics to be used, the "finite element analysis" due to the computer simulation was conducted. Then, the product's life, quality and stability, and strength were tested under the condition to keep the beautiful form of the product.

#### Okamura Corporation

Tenri Bldg, 1-4-1, Kitasaiwai, Nishi-ku, Yokohama, Kanagawa  
220-0004, Japan  
Tel 81-45-319-3480 Fax 81-45-319-3482  
E-mail  
URL <http://www.okamura.co.jp>



## Eco-products

EP-4-002

OA / Furniture

metal desks, tables and chairs

### Okamura "Pro Unit - Freeway" desk for office system

The product is an office desk of the top-board connecting type. It forms as a structure by connecting each other. Thereby, the minimum parts composition that includes beams and legs can be realized. For the office users, it contributes to reduce the introduction cost and the parts to be placed under management.

1. The long span of 3m at the maximum has been realized without use of intermediate supports. In addition, the rate of use of steel has reached a high value of 94%.
2. Various features of the product have been realized: parts that is usable in common, layout change with minimum load, the use of the product for a long period, etc.
3. Minimum parts composition contributes to the resource saving.

#### Okamura Corporation

Tenri Bldg, 1-4-1, Kitasaiwai, Nishi-ku, Yokohama, Kanagawa  
220-0004, Japan  
Tel 81-45-319-3480 Fax 81-45-319-3482  
E-mail  
URL <http://www.okamura.co.jp>



## Eco-products

EP-4-003

OA / Furniture

information paper

### Top-quality clean paper, STACLEAN RC

STACLEAN RC, has a worldwide reputation among engineers in semiconductor, electronics and other industries for top-quality clean paper. STACLEAN RC, used for more than twenty five years in clean rooms, is impregnated with acrylic resin and generate virtually no dust particles, and yet capable for recycling as normal paper. STACLEAN RC does not contain any restricted or banned materials and chemical substances under environmental standard.

We recently added AS STACLEAN, ESD clean paper in our STACLEAN line of products. Users can enjoy very wide variety of STACLEN product family that is growing and keeps innovating every day.

#### SAKURAI CO., LTD.

MG Ikenohata Bldg., 1-2-18, Ikenohata, Taito-ku, Tokyo 110-0008, Japan  
 Tel 81-3-3827-4441 Fax 81-3-3827-4321  
 E-mail  
 URL <http://www.sakurai.co.jp>



STACLEAN RC /laser printers and PPC copieres

## Eco-products

EP-4-004

OA / Furniture

mechanical pencils

### Eco-friendly mechanical pencil for general use

This improved pencil can be used until only 0.5mm of lead remains (Previously, lead needed replaced at 12.4mm) In addition to extending its writing life by 20%, it minimizes waste of pencil lead, making more efficient use of resources. Recycled plastic is used for the barrel, making it environmentally-friendly.



Zeroshin Glamour / mini/MGMQ-100

#### Platinum Pen Co., Ltd.

2-5-10, Higashi Ueno, Taito-ku, Tokyo 110-8622, Japan  
 Tel 81-3-3831-3412 Fax 81-3-3835-7876  
 E-mail  
 URL <http://www.platinum-pen.co.jp/>

## Eco-products

EP-4-005

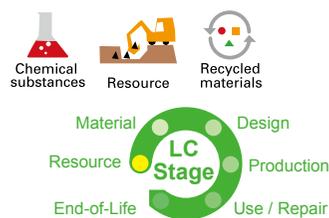
OA / Furniture

pencil lead and holders

### Not only the case but also the lead itself !

Use of recycled materials helps to prevent global warming, reduces the environmental burden and makes more efficient use of resources.

In the process of lead production, we effectually use the by-product material which come from the chemical factory's products and generator-brush from thermal power station.



#### Tombow Pencil Co.,Ltd.

6-10-12, Toshima, Kita-ku, Tokyo 114-8583, Japan  
 Tel 81-3-3912-1181 Fax 81-3-3912-1536  
 E-mail  
 URL <http://www.tombow.com>



Available in : Japan

Recycled Spare Leads : R5-REW

## Eco-products

EP-4-006

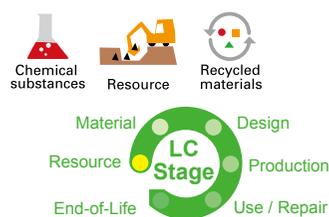
OA / Furniture

marking pens

### Long lasting, refillable highlighter for offices and schools

We help to reduce the environmental burden and help to prevent global warming by using resources effectively. The product reduces waste by using recycled materials.

In addition, by using our "Highlighter Ink Charger" you can save 61% weight of the garbage, comparing with purchasing 10 new highlighters.



#### Tombow Pencil Co.,Ltd.

6-10-12, Toshima, Kita-ku, Tokyo 114-8583, Japan  
 Tel 81-3-3912-1181 Fax 81-3-3912-1536  
 E-mail  
 URL <http://www.tombow.com>



Available in : Asia

Twin Highlighter : WA-TC

## Eco-products

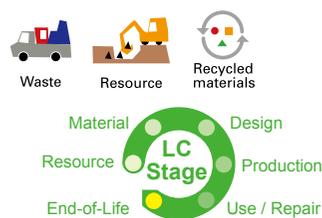
EP-5-001

Apparel / Textiles

dress shirts

### Office Uniform after reduction of oil resources us

This garment contains a minimum of 55% PET bottle-recycled polyester, which means it saves oil resources and puts used PET bottles to good use.



#### CHIKUMA & Co., Ltd.

3-3-10, Awaji-cho, Chuo-ku, Osaka-shi, Osaka 541-0047, Japan  
Tel 81-6-6222-3289 Fax 81-6-6222-3665  
E-mail o-alpha@chikuma.co.jp  
URL <http://www.chikuma.co.jp>

## Eco-products

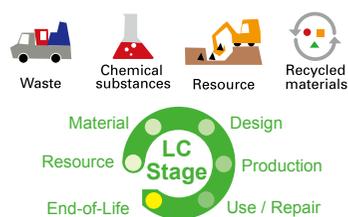
EP-5-002

Apparel / Textiles

uniforms

### Office Uniform that saves oil resources and reduce

The cloth is made from material that incorporates at least 55% PET bottle-recycled polyester so it saves oil resources and make use of discarded PET bottles.

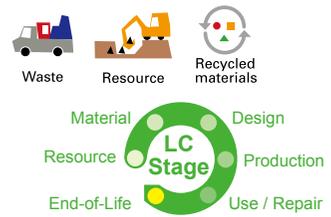


#### CHIKUMA & Co., Ltd.

3-3-10, Awaji-cho, Chuo-ku, Osaka-shi, Osaka 541-0047, Japan  
Tel 81-6-6222-3289 Fax 81-6-6222-3665  
E-mail o-alpha@chikuma.co.jp  
URL <http://www.chikuma.co.jp>

**Office uniform that saves oil resources and reduce**

The clothing is made from material that uses a minimum of 55% PET bottle-recycled polyester. This means it doesn't use oil resources and it reduces waste by using PET bottles.



**CHIKUMA & Co., Ltd.**

3-3-10, Awaji-cho, Chuo-ku, Osaka-shi, Osaka 541-0047, Japan  
 Tel 81-6-6222-3289 Fax 81-6-6222-3665  
 E-mail o-alpha@chikuma.co.jp  
 URL <http://www.chikuma.co.jp>



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## Eco-products

EP-6-001

Interior decoration / Exterior decoration or furniture

pillows

### Good sleep pillow "HIBAMIN"

HIBA is a kind Japanese cypress tree; it's glowing abundantly in Aomori prefecture of Japan. When Aomori HIBA wood is sawed at the saw-mill, a large amount of waste wood is yielded. The stuffing material of a good-sleep pillow "HIBAMIN" is the waste wood of HIBA. Namely, the fragment of the wood is shaped into a pillar-like rod, and then the rod is cut into grains of 8 mm long, and finally the grains are polished to a shape that gives soft-touch feeling to user's head and neck. If you use "HIBAMIN", relaxing fragrance of HIBA that spreads throughout your bedroom sends you to good sleep and helps the progress of your comfortable sleep; waking up in a fresh mood is also assured. By the respiration effect of the HIBA wood itself, the perspiration in sleeping may be absorbed, and the absorbed sweat is removed on drying. HIBA is a wood material difficult to rot owing to its antibacterial property, so you can use "HIBAMIN" for a long period.

#### Hiba Development Co., Ltd.

76-2, Oma, Oma, Aomori 039-4601, Japan  
 Tel 81-175-37-4711 Fax 81-175-32-1011  
 E-mail [hiba@jomon.ne.jp](mailto:hiba@jomon.ne.jp)  
 URL <http://www.aomori-hiba.com/>



## Eco-products

EP-6-002

Interior decoration / Exterior decoration or furniture

furniture and fixtures

### "TARU-MONOGATARI" furniture made from whisky cask

Casks made from oak trees of could-be-100-year-old are used for as long as 70 years to mature Suntory whisky in the aging cellars, being refilled with freshly distilled new whisky several times.

After many years of duty as cradles of whiskies, however, the retired casks had formerly been used wastefully as firewood. Through 20 years of study of trial and error, Suntory had established the technique to change these laudable cradles of whisky into oak-wood-furniture of high-quality and long-life naming the series of furniture "Taru-Monogatari (the Tale of Cask)". We utilize, of course, the material to make small articles such as stationery and even the sawdust turns into the glaze for tasteful ceramics. Through this special technique to revive the forest resources, we may say that the carbon dioxide fixation in the oak trees would last over the centuries. It is possible that "The Tale of Cask" continues on "100 years in the forest, 70 years in the aging cellar and perhaps additional 100 years as furniture".

#### Suntory Limited

2-3-3, Daiba, Minato-ku, Tokyo 135-8631, Japan  
 Tel 81-3-5579-1513 Fax 81-3-5579-1755  
 E-mail  
 URL <http://www.suntory.com/>



A Taru-Monogatari Dinner Table and Chairs

## Eco-products

EP-6-003

Interior decoration / Exterior decoration or furniture

furniture and fixtures

### Knockdown furniture for outdoor use by the circulation type material

#### <Module design>

We designed 600 mm corner modules, which makes the parts common and reduces manufacturing loss. It enhances the efficiency of the maintenance which includes parts exchange. We took up a long life design which enables version up by exchanging only a part when the part was updated by the amending design.

#### <Use of recyclable materials>

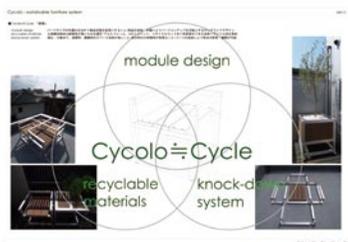
Aluminum is easily made up to a flame by the process of driving the ABS joints with plastic hammer; fractionation and disassembly are easy, too. Recycling wood is obtained from the waste wood of pulled down building, by crushing it, mixing with the thermoplastic resin, and molding the paste. As for the main constitution materials (aluminum, ABS and recycling wood), it is possible to do "Multiple" recycling.

#### <Knock-down system>

We selected knockdown style of which decomposition and assembly are easy, and promoted the efficiency of stock and transportation. It is possible to develop the original design by buying supplementary parts, for example, to make a bench by combining chairs side by side, or to make the table united with the chair, and so on.

#### Greeningworks Inc.

Mama 1-3-3, Ichikawa-shi, Chiba 272-0826, Japan  
Tel 81-47-329-5200 Fax 81-47-329-5200  
E-mail info@greeningworks.com  
URL <http://www.greeningworks.com>



Cycolo-Symbiotic/Sustainable Furniture System

## Eco-products

EP-6-004

Interior decoration / Exterior decoration or furniture

paper diaper for adults

### Automatic Urine Collection System to Reduce the Use of Paper Diapers

This new excretion care product for elderly people requiring nursing care was cooperatively developed with Unicharm Corporation. This product consists of a urine receptacle and a disposable urine collection pad wherein the special sensor in the pad detects urination and then the urine in the pad is automatically suctioned into the urine tank of the urine receptacle.

#### Main features;

- (1) The urine does not remain in the diaper, so the skin can be maintained in a comfortable state while only needs to replace the pads about twice a day.
- (2) Compared to conventional paper diapers (urine pads) that are consumed at a rate of 5 to 7 pieces a day, this product reduces the labor required for nursing care while also greatly reduces the amount of waste (about 1/40 by weight).
- (3) This product is equipped with urine collection amount measurement and recording functions that can be used to create a urination chart to support high-quality nursing care, through providing information such as the timing to supply a user with water or to take the user to the bathroom.
- (4) The urine receptacle is small and lightweight and has a built-in battery, so it can be used to go out and with wheelchairs.

#### HUMAN Care Innovation Venture Company, Hitachi, Ltd.

18-13, Soto-Kanda, 1-chome, Chiyoda-ku, Tokyo 101-8608, Japan  
Tel 81-3-4564-6869 Fax  
E-mail  
URL <http://www.hitachi.co.jp/products/humancare/>



Automatic Urine Collection System

Available in : Japan

## Eco-products

EP-6-005

Interior decoration / Exterior decoration or furniture

paper diaper for adults

### Disposable diaper: reduced environment impact of 12% than before product

When we compare a disposable diaper for adults with a baby disposable diaper, there becomes very much quantity that is disposed of after use greatly. Therefore we divide an outside diaper and an inside diaper. And it absorbs urine an inside diaper. We try to its smallest, to do a waste by changing only a part of an absorption parts. In this case, outside diaper "LIFREE" and inside diaper "LIFREE pads" use together that make hard to have become stain with what we changed a diaper structure of an absorption parts.

Therefore there became a little change number of times of an outside diaper. (Outside diaper is 5times heavier than inside diaper) As a result of we compared environmental impact with an article in LCA of a product conventionally, and we apply LIME which was a LCIA tool for Japan, and having inspected numerical value, We reduced environment impact of 12% than before product.



Products/Model:Lifree

#### Unicharm Corporation

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## Eco-products

EP-6-006

Interior decoration / Exterior decoration or furniture

paper diaper for babies

### Paper diaper for baby use, with 35% reduction of CO<sub>2</sub> discharge

- This baby diaper was realized with keeping the function level as it is, the amount of the used raw material was reduced by 10%.
- By decreasing the thickness of the article to 2/3, the amount of packaging material was reduced by 20%.
- The loading efficiency in the transport of the article was improved by 20%. And thereby, the discharge of CO<sub>2</sub> which is a cause of the global warming was reduced by 35% in comparison with that of the conventional article.

(The data are round value compared with our company's conventional article. The numerals of CO<sub>2</sub> show the comparison of the CO<sub>2</sub> discharge of article per 1 piece through its life cycle.)



Moony Man

#### Unicharm Corporation

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## Eco-products

EP-6-007

Interior decoration / Exterior decoration or furniture

sanitary products

### Sanitary napkin: Waste reduction that considers menstrual blood loss

This product is sanitary napkin that combine and use "Piece" placed between the groins and "Sheet" applied to the undergarment. The product can exchange only piece with one sheet paved in the undergarment because piece almost absorbs the blood of the menstruation. As a result, it came to be able to reduce the waste at the menstruation largely. About 85% in the weight of the product and about 70% by the amount of piece wrapping use has been reduced compared with a general sanitary napkin. (Comparison with our product for daytime of day when a lot of menstrual bloods are)



Waste Resource



SOFY Body Piece

#### Unicharm Corporation

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## Eco-products

EP-6-008

Interior decoration / Exterior decoration or furniture

sanitary products

### Baby wipes: Largely reduce a waste by using a box repeatedly

This article is repackable. We can largely reduce a waste by using a box repeatedly.

Harmful materials do not use it for an article, and it is made by the subject matter that harmful materials do not appear even if you burn it. And it is considered by raising functionality to reduce a waste.



Waste Long-life Resource



本体 つめかえ用30枚×8 つめかえ用30枚×5



つめかえ用30枚×8 外出用30枚 外出用30枚×2

Moony Baby Wipes

#### Unicharm Corporation

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## Eco-products

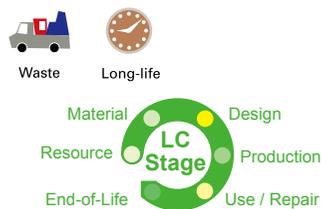
EP-6-009

Interior decoration / Exterior decoration or furniture

sanitary products

### Wet tissues: Reduction of a waste by repacked

You can use the box of SILCOT Wet Tissues repeatedly by having you supplement a refill if the contents disappeared. It leads to reduction of a waste. In addition, it is the article which considered the universal design which can easily open out with one finger.



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SILCOT Wet Tissues

## Eco-products

EP-6-010

Interior decoration / Exterior decoration or furniture

cleaning and scouring preparations

### Spray-type sndeck kitchen-cleaner by use of "soda" electrolysis water

"Soda" electrolysis water is the aqueous solution obtained by the electrolysis of a sodium hydrogencarbonate ( $\text{NaHCO}_3$ ) solution. The water thus produced does not contain synthetic surface-active agents at all. We often hear that the goods of eco-type detergent have not sufficient powers to remove stain. Compared with such products, the "soda" electrolysis water shows a great effect to remove the greasy stain of a kitchen and also to clean the well-thumbed wall of a living room. As for the spray-type sndeck kitchen-cleaner, the mixture of thickener and "soda" electrolysis water is put into an sndeck originally designed bottle. Addition of the inorganic thickener makes it easy for the electrolysis water to stick on the stain of the wall and to remove it effectively. Moreover, the bottle can be used repeatedly with refill.



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## Eco-products

EP-6-011

Interior decoration / Exterior decoration or furniture

cleaning and scouring preparations

### sndek Cleaning Cloth Series made from natural plant materials

There are various kinds for "a dirt". Even if we take a kitchen as an example, the quality of dirt is different with range, refrigerator and ventilator. As for the sndek cleaning cloth series, therefore, the fundamental cloth has been selected for each kitchen portion. The size of cloth has been changed for each portion. Moreover, the volume and concentration of the NaHCO<sub>3</sub> electrolysis water that is impregnated into the cloth has been changed. In general, the wet sheet product has a peculiar defect that the sheets dry up on the way of the use. In order to minimize such a defect, the sndek cleaning cloth series put its ingenuity in the opening and shutting part of its package. Furthermore, considering that the cleaning sheets are disposable, we were particular about natural materials and selected mainly biodegradable materials such as pulp, cotton and eucalyptus fiber. In the pretty compact package of the sndek cleaning cloth series, the particularly selected materials and user's reliance has been packed.



example of product

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## Eco-products

EP-6-012

Interior decoration / Exterior decoration or furniture

makeup and skin care products

### "HIBA cream" from HIBA-woods

HIBA is a kind of Japanese cypress tree, which is glowing abundantly in Aomori prefecture of Japan. When Aomori HIBA wood is sawed at the saw-mill, a large amount of sawdust is obtained as the waste. From the sawdust thus obtained, the essence that is called "Aomori HIBA oil" can be extracted. The essence contains a natural component "Hinokitiol" at about 2% . "Hinokitiol" is useful for skin care because of its multi-function: antibacterial effect, whitening effect, UV light absorption, astringent action, etc. However, the duration of the effects is relatively short. As a stabilizing technique of "Hinokitiol", the method to blend it with zinc stearate has been developed. "HIBA cream" is the skin-care product that enhanced the stability and the antibacterial activity of "Hinokitiol". ("Hinokitiol": a custom name of isopropyl tropolone).



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## Eco-products

EP-6-013

Interior decoration / Exterior decoration or furniture

self cleaning glass coating

### Cleaning technology "Aqua Coat" by the super-hydrophilic film

"Aqua Coat" is a new technology which TOSTEM developed originally. It forms a hydrophilic coat layer on the glass surface, and let the rain water enter between the glass and the dirt to wash the dirt away. It is the skylight industry's first self-cleaning technology. For its first technical development, it was applied to the transparent glass of the skylight "the sky theater" of our company goods. It can keep the place in a clean state where the hand had not reached until now. It can demonstrate the cleaning effect sufficiently even in night and shade, because the antifouling effect works without light. We estimate that the durability and the weather resistance of the "Aqua Coat" are effective for the period corresponding to 10 years from the experiments. We aim to expand its use to normal window, entrance door and others goods. Our final target is to apply the "Aqua Coat" to the whole of one house, to which we push forward a study.

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## Eco-products

EP-6-014

Interior decoration / Exterior decoration or furniture

aromatic

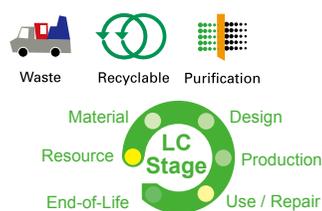
### Natural Fragrance "HIBANOMORI"

Aomori HIBA is one of the three beautiful forests in Japan. When Aomori HIBA wood is sawed at the saw-mill, a large amount of sawdust is yielded as the waste. The sawdust thus obtained is the material of the natural fragrance "HIBANOMORI". Before packing the sawdust into bags, it is sieved to grains of desirable size and a small amount of the essence that was separately extracted from the saw-dust is added.

If you place a pack of "HIBANOMORI" in the warm water pool of your bathtub, the flavour that spreads throughout the bathroom will calm you. Moreover, the flavour will suppress the breeding of various germs in the bathroom. If you place a pack in your wardrobe, your clothes will be kept to be clean by the sterilizing power of "HIBANOMORI".

#### Hiba Development Co., Ltd.

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## Eco-products

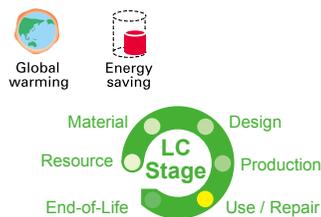
EP-6-015

Interior decoration / Exterior decoration or furniture

sanitary pottery, accessories

### NEOREST AH type : A toilet saving electricity and water

This toilet is equipped with "Hybrid Ecology system", which is a cleaning system of water flow from direct water pipes and new pump developed for this product. This technology reduces a quantity of water for cleaning the toilet to 5.5 liters, resulting in significant saving water compared with 13 liters of existing products. In addition, "Wonder Wave Cleaning" function, technology of washing a hip, repeats strong and weak spouting more than 70 times a minute, reducing a quantity of water nearly half compared with existing products with feeling fully washed. Also, this toilet achieved saving electricity. The timer saving power function turns off a power of the seat heater at the every time users set. Additionally, the super automatic saving power function learns the use's life pattern, and turns down the surface temperature of the seat and turns off the power of the seat heater automatically at the time user almost never use, achieving farther saving electricity.



NEOREST AH type CES9793Y

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## Eco-products

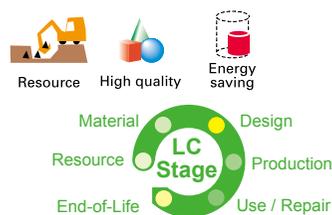
EP-6-016

Interior decoration / Exterior decoration or furniture

sanitary pottery, accessories

### SATIS: A water saving toilet "ECO6"! World smallest water closet without tank

This stool features compact size and energy consumption reduction by 21% and CO<sub>2</sub> emission reduction by 24% compared to existing products. This stool can save water 6 liters for cleaning solid waste and 5 liters for liquid waste are available, thereby realizing about 60% water-saving and about 46% electrical energy-saving compared to existing products through the super energy-saving mode. Additionally, use of detergent is reduced by 72% at cleaning a toilet by pro-guard which features easier cleaning on the toilet surface. The way to hold on the toilet with welding is changed to screw method, so that it is easier to disassemble after discard. The stool is easier to be recycled because of the marking of plastic materials.



SATIS: GBC-901S/BW1, DV-218-R/BW1 etc

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Available in : Japan

## Eco-products

EP-6-017

Interior decoration / Exterior decoration or furniture

sanitary pottery, accessories

### Sensor Urinal:Saves water and energy by AI Saving function and hydraulic power generator

The Sensor Urinal flashes automatically after use. This Sensor Urinal includes the power generation function that effectively converts spouting power into electrical energy. Accordingly, this urinal uses 1 to 2 liters of water to flush depending of the condition of use and saves about 70% water compared to existing products. And, the ceramics surface is antibacterial specifications designed with easy to clean rim shape.

This Sensor Urinal is not only designed stylishly but easy to maintain.



Sensor Urinal: AWU-506RAMP/BN8

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Available in : Japan

## Eco-products

EP-6-018

Interior decoration / Exterior decoration or furniture

sanitary pottery, accessories

### e-Modern:Substantial stylish design equipped with "eco-dial", a new water saving mode

e-Modern, a single lever faucet, saves water with high performance. In many case single lever faucet is fully opened (when discharging water) from it's easy operation of opening and closing . And single lever faucet discharges water more than required. This faucet equips "Eco Dial", which is newly developed water saving function to prevent water from running freely. All you have to do is to choose "eco mode" of "Eco Dial", and you can save water up to 50%.



e-Modern: LF-E340SC/SE etc

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Available in : Japan

## Eco-products

EP-6-019

Interior decoration / Exterior decoration or furniture

sanitary pottery, accessories

### Automage: Automatic faucet equipped with hydraulic power generation

Automage, a sensor faucet, supplies water just bringing your hand in front of the faucet.

This sensor faucet includes the water generator that converts spouting power into electrical energy effectively; thereby this faucet operates with the energy from this self-power generation. Additionally, because of from spray stream spouting, splashing of water around the faucet is less and you can wash your hands well with less water.

"Automage" saves up to 30% of water compared to existing sensor faucets, and up to 80% compared to two handle faucets.

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 URL <http://www.inax.co.jp/>

Available in : Japan



Automage: AM-91K etc

## Eco-products

EP-6-020

Interior decoration / Exterior decoration or furniture

metal sanitary ware

### Automatic faucet saving water and electricity

This automatic faucet is saving water and economical, because the sensor to spout and stop water flow automatically saves wasted water. The generation unit of water power covers electric power for the sensor and the electromagnetic valve, so this mechanism saves electric power.



TEN41AWX

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## Eco-products

EP-6-021

Interior decoration / Exterior decoration or furniture

metal sanitary ware

### Water-saving shower head attachment

This shower allows you to start and stop the water flow by simply pushing the button on the shower head. This function avoids water continuously running while you are washing your hair, resulting in significant saving water and energy of supplying hot water.



Global warming



Energy saving



TMF40WQN

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## Eco-products

EP-6-022

Interior decoration / Exterior decoration or furniture

bathrooms

### Energy-saving bathroom

This product's wrapping the bathtub with double thermal insulation and an insulating cover can keep the water in the bathtub warm, similar to a structure of a thermos bottle.

This structure makes the temperature of water in the bathtub only two low degrees in six hours, and this insulating performance is four times as high as existing products. This means water in the bathtub does not need to be reheated when another person takes a bath, resulting in saving energy.



Global warming



Energy saving



SPRINO HAQ1721UR

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## Eco-products

EP-6-023

Interior decoration / Exterior decoration or furniture

thermal insulating window

### Aluminum composite insulating window; energy-savin

The product is a composite structure insulating window frame, which uses aluminum material (with durability and fireproof functions) for outside and resin material (with thermal insulation and ornamental design functions) for inside. The product contributes to energy saving by reducing air-conditioner's load at a residential house with a help of double glazed glass. When saved amount of energy is converted into carbonic acid gas, a high-insulation/airproof house using Symphony can reduce carbonic acid gas by approximately 960 kg a year per house in contrast to a conventional house. Thanks to these effects, increased carbonic acid gas by increased materials of the product (such as for sash, glass, and thermal insulation) can be offset within approximately 1.6 years, thus showing enough efficiency in terms of LCA standard. Furthermore, to improve its recyclability, the product has a simple disassemble structure where aluminum/resin materials are fixed with our own "Type II Eco-Label", based on our internal standard.



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## Eco-products

EP-6-024

Interior decoration / Exterior decoration or furniture

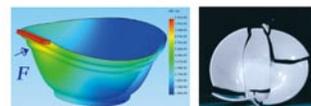
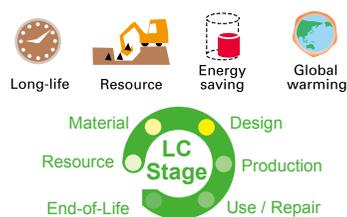
ceramic tableware

### Structurally strengthened ceramic tableware

"Using one thing for a long time is important"

This product is the porcelain tableware which was developed only by this concept. Its structure was designed from the analysis of failure mechanism for the strongest shape of tableware. The intensity enhancement over 30% is possible in the margin which is weak point of the tableware even in the same weight and same material. The aiming thing is this word.

"strength" for "gentleness".



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StructuralStrengthenPottery"RibLine", "CeraCules"

## Eco-products

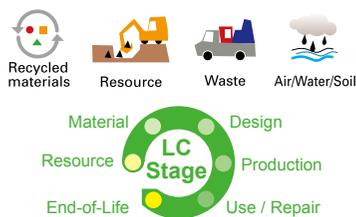
EP-6-025

Interior decoration / Exterior decoration or furniture

ceramic tableware

### Strengthened porcelain tableware using a recycled raw material

At present, the resin is most mainly used as the material of the tableware for the school catering of Japan. However, from the viewpoint of a feeling of security/ culture to the accustomed material, the case that the ceramic tableware is used also increases, and it is said that the about 30% is the strengthened porcelain. However, the present status shows that the breakage occurs at a rate of 10-25% per year in the actual use places, because the material is strong but weak to the impact. Fortunately, the strengthened porcelain which is the main stream is aluminum porcelain, and it contains the alumina which is relatively expensive in the ceramic raw materials, at a per cent of 30-40. Recycling by a relatively low cost is therefore possible. We can design a low-load ecology system for the resource which has a limit.



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## Eco-products

EP-6-026

Interior decoration / Exterior decoration or furniture

ceramic tableware

### Recycling Ceramics "Rebirth of tableware - Re-shokki"

- The product is the ceramic tableware "RE-shokki" which used circulating-type resources for the first time in Japan. It is yielded by the recycling technology and the regeneration system at the place of manufacture, and by the network between the users in land. The green life 21 project was set up by the collaboration of 32 companies.
- The product in the photograph contains 20% of regeneration material, namely the crushed product of the spent tableware. The bending strength is 131MPa, which is 1.6 times large compared to that of the conventional tableware. The product has safety and practicability in the point of the water-absorbing capacity and the thermal shock resistance. The CO<sub>2</sub> discharge at the production is 2450kg/t, which is 3% less than that of the conventional tableware. The reduction effect is larger, as the blend ratio of the regeneration material is higher.
- We intend to contribute to the environment efficiency through the ceramic circulation system. It includes the simplification of manufacturing process, the restraint coloring agent, the loading efficiency at the distribution, the design considering life and washability, the repair service, etc.



#### Gifu Prefectural Ceramics Research Institute

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 URL <http://www.gi21.org/>

Available in : Japan, France and other countries

Recycled-Tableware "GL21-Oliva"

## Eco-products

EP-6-027

Interior decoration / Exterior decoration or furniture

tableware for outdoor

### Environmental-friendly dishes designed for out-door

Raw materials used for the dish are plants such as corns and potatoes, thereby efficiently reducing global warming influence. Also, the dish needs as low as approximately 4,000 calories when incinerated, causing no contamination of the aright dish is biodegradable, being resolved by natural microorganism under the soil.



Resource



#### ENTECC Co.,Ltd

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Eco One Spoon, fork, and glass

## Eco-products

EP-6-028

Interior decoration / Exterior decoration or furniture

tableware (occidental-type)

### Biomass resin tableware for the supply of group food

This product is the reuse tableware made of the environment-friendly plant-origin plastic, which does not use the exhaustible resource "petroleum" as raw material. Most plastics can finally change to the CO<sub>2</sub> which is 3 times self-weight. Biomass plastic also generates CO<sub>2</sub> when burnt, but it is not outbreak of new CO<sub>2</sub>, because the CO<sub>2</sub> is equivalent to the CO<sub>2</sub> which was absorbed into the body of source plant by photosynthesis from the air. For example, at the school lunch center treating 3,000 meals, if the conventional plastic tableware is replaced with a bio-plastic one, we can reduce CO<sub>2</sub> as follows: 3,000 x 205g (tableware) x 3 = 1.845 kg CO<sub>2</sub>. This corresponds to the quantity of the CO<sub>2</sub> absorbed by artificially planted 131 trees of Japanese cedar.



Global warming



Resource



Long-life



High quality



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## Eco-products

EP-6-029

Interior decoration / Exterior decoration or furniture

trays and chopsticks

### Chopsticks and tray made from the recycled material of the spent tableware

These products are the recycling goods which were made by using the raw material recovered from the spent tableware which were collected from the group lunch market.

Through the whole life cycle from the production of the commercial goods to the disposal of them, the load to the environment is small owing to material recycling. It is possible to contribute to the saving of resources such as petroleum and the reduction of wastes.



Tray[RET-56],Chopsticks[RH-195S]

#### SANSHIN KAKO CO.,LTD.

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Tel 81-3-3433-0084 Fax 81-3-3433-0069  
E-mail [info@sanshin-kako.co.jp](mailto:info@sanshin-kako.co.jp)  
URL <http://www.sanshin-kako.co.jp>

## Eco-products

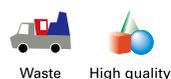
EP-6-030

Interior decoration / Exterior decoration or furniture

cooking sheet

### Cooking sheet: Reduces a waste.

This cooking sheet is the first sheet which take in only extra water of vegetables, and protect the freshness. When you store vegetables with a bag, you spread a sheet under vegetables and absorb only unnecessary water appearing from vegetables and protect vegetables from breeding of bacteria and drying to keep a bag to the moderate humidity. When you save vegetables in a refrigerator 6 °C, mold occurs only in the case of a save bag two weeks later, but when you use this sheet with a save bag, outside leaf changed color a little after two weeks. You can eat it that the inside was edible enough if you take one piece of outside. In this way it seems to be eaten the vegetables which have been disposed of conventionally by keeping it long the freshness of vegetables and reduces a waste.



#### Unicharm Corporation

Sumitomofudousan Mita Twin Building West Tower, 5-27, Mita 3-chome, Minato-ku, Tokyo 108-8575, Japan  
Tel 81-3-6722-1041 Fax 81-3-6722-1018  
E-mail  
URL <http://www.unicharm.co.jp>

Cook Up

## Eco-products

EP-6-031

Interior decoration / Exterior decoration or furniture

gas ovens

### Energy-saving residential-use gas cooking stove exe+S

Our company has long been working to expand the assortment of residential-use gas cooking stoves installed with high-efficiency burners. This product features burners that greatly increase the thermal efficiency by lessening the flame over-flow from the bottom of pots and pans. It attains a high total thermal efficiency of 55.6%. As such, it acts to conserve energy and reduce CO<sub>2</sub> emissions. It also has a top made of glass for easy cleaning. Furthermore, for increased safety, all three burners are equipped with sensors to prevent over-heating, and the two front burners, with sensors to detect the absence of pots and pans on the burners and prevent lighting in that case. For higher levels of convenience, there is also a function for voice notification to confirm settings and notify users of misoperation.

#### Tokyo Gas Co., Ltd

1-5-20, Kaigan, Minato-ku, Tokyo 105-8527, Japan  
Tel 81-3-5400-7671 Fax 81-3-3432-5509  
E-mail  
URL <http://www.tokyo-gas.co.jp>



HR-P873B-VXABHL(R)

## Eco-products

EP-6-032

Interior decoration / Exterior decoration or furniture

gas ovens

### Energy-saving residential-use gas cooking stove

Our company has long been working to expand the assortment of residential-use gas cooking stoves installed with high-efficiency burners. This product features internal-multiple-flameport burners that greatly increase the thermal efficiency by directing flames inward to lessen the flame over-flow from the bottom of pots and pans. It attains a high total thermal efficiency of 55.6%. As such, it acts to conserve energy and reduce CO<sub>2</sub> emissions. Improvements were hardly confined to the burners; the broiler, too, has a higher thermal efficiency as compared to former models, thanks to a change in the inner coating. In addition, the top is made of glass and easy to clean. For saving of energy and time, a rice cooking function is equipped. Furthermore, for increased safety, burners are automatically extinguished when seismic tremors above a prescribed intensity are detected. For higher levels of convenience, there is also a function for voice notification to confirm settings and notify users of misoperation.

#### Tokyo Gas Co., Ltd

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Tel 81-3-5400-7671 Fax 81-3-3432-5509  
E-mail  
URL <http://www.tokyo-gas.co.jp/>



RN-P873-DXHBHL(R)

## Eco-products

EP-6-033

Interior decoration / Exterior decoration or furniture

gas ovens

### Energy-saving residential-use gas cooking stove

Our company has long been working to expand the assortment of residential-use gas cooking stoves installed with high-efficiency burners. This product features burners that greatly increase the thermal efficiency by lessening the flame over-flow from the bottom of pots and pans. It attains a high total thermal efficiency of 55.6%. As such, it acts to conserve energy and reduce CO<sub>2</sub> emissions. It also has various features for easy cleaning, including a top made of glass, a burner structure sealed with heat-resistant packing to prevent the infiltration of grime into the range, and coverage of the broiler mesh with grime-resistant fluoroc ceramic film. In design, we offer a variety selection of colors to coordinate with kitchens. In addition, all three burners are equipped with sensors to prevent over-heating and increased safety.



HR-P873B-XIBHL(R)

#### Tokyo Gas Co., Ltd

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 E-mail  
 URL <http://www.tokyo-gas.co.jp/>

## Eco-products

EP-6-034

Interior decoration / Exterior decoration or furniture

gas ovens

### Energy-saving residential-use gas cooking stove

Our company has long been working to expand the assortment of residential-use gas cooking stoves installed with high-efficiency burners. This product features burners that greatly increase the thermal efficiency by lessening the flame over-flow from the bottom of pots and pans. It attains a high total thermal efficiency of 55.6%. As such, it acts to conserve energy and reduce CO<sub>2</sub> emissions. It has a Dutch oven in the grill port and enables easy and enjoyable cooking. As the grill port is compact, this product can continue cooking with remaining heat of Dutch oven and use less energy than normal oven. In addition, the top is made of newly developed metal and easy to clean. In addition, all three burners are equipped with sensors to prevent over-heating and increased safety.



RN-P873-AUL(R)

#### Tokyo Gas Co., Ltd

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 E-mail  
 URL <http://www.tokyo-gas.co.jp/>

## Eco-products

EP-6-035

Interior decoration / Exterior decoration or furniture

gas ovens

### Energy-saving residential-use gas cooking stove

Our company has long been working to expand the assortment of residential-use gas cooking stoves installed with high-efficiency burners. This product features internal-multiple-flameport burners that greatly increase the thermal efficiency by directing flames inward to lessen the flame over-flow from the bottom of pots and pans. It attains a high total thermal efficiency of 55.6%. As such, it acts to conserve energy and reduce CO<sub>2</sub> emissions. In addition, the top is made of glass and easy to clean. Furthermore, for increased safety, all two burners are equipped with a timer to address neglect to extinguish burners, a device to prevent flame failure, and a function for lowering the flame and automatically extinguishing when the pot or pan is removed from the burners.

To facilitate use even by the aged, the control panel has large buttons and letters, color-based differentiation, and other elements deriving from universal design.

#### Tokyo Gas Co., Ltd

1-5-20, Kaigan, Minato-ku, Tokyo 105-8527, Japan  
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URL <http://www.tokyo-gas.co.jp/>



RN-PS862-XHL(R)

## Eco-products

EP-6-036

Interior decoration / Exterior decoration or furniture

gas ovens

### Gas Cooking Stove with high efficiency burners

The burner with 56% thermal efficiency has produced economic and energy-saving advantages over conventional cookers. With the glass surface, it is easy to clean and maintain.

Compared with induction heating cookers, the gas cooking stove has reduced annual CO<sub>2</sub> emission by 60%.



#### Osaka Gas Co., Ltd.

4-1-2, Hiranomachi, Chuo-ku, Osaka-shi, Osaka 541-0046, Japan  
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URL <http://www.osakagas.co.jp>

## Eco-products

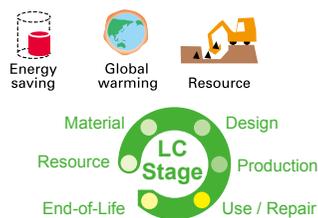
EP-6-037

Interior decoration / Exterior decoration or furniture

gas water boilers

### Household energy-saving latent heat recovery-type

Our company has developed a high-efficiency water heater system that recovers previously wasted latent heat contained in the exhaust's water vapor. With this system, water heating efficiency is improved from about 80%(at most) to about 95%, and the efficiency of a unit used for room heating is also increased from about 80% to about 87%. This system contributes to energy savings and to the reduction of CO<sub>2</sub> emissions by cutting gas consumption by(up to) about 13%.



TP-S824RFWA-RA

#### Tokyo Gas Co., Ltd

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 E-mail  
 URL <http://www.tokyo-gas.co.jp>

## Eco-products

EP-6-038

Interior decoration / Exterior decoration or furniture

central heating boilers

### Prior Eco-Jozu - highly efficient central heating boiler

Employing a heat exchanger of latent heat recovery type, the system utilizes the thermal energy of exhaust gas which was previously wasted, achieving high thermal efficiency of 95% in hot water supply and 89% in space heating.

With its smaller energy consumption, Eco-Jozu has reduced annual CO<sub>2</sub> emission by 224kg.



#### Osaka Gas Co., Ltd.

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 E-mail  
 URL <http://www.osakagas.co.jp>

## Eco-products

EP-6-039

Interior decoration / Exterior decoration or furniture

heat pump hot-water supply system

### Eco-friendly water heater for residential use

Eco Cute is a household water heater that offers dramatic energy savings on the use of hot water, which normally accounts for about a third of a household's entire energy consumption. It generates hot water using atmospheric heat by means of a heat pump system and offers energy savings of around 30% compared with a conventional combustion type water heater together with a reduction in green house gas emission. The use of natural refrigerant CO<sub>2</sub> contributes to environmental conservation including the prevention of global warming.



#### Tokyo Electric Power Company

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 Tel 81-3-4216-1111 Fax 81-3-4216-3479  
 E-mail kawashima.toshiyuki@tepco.co.jp  
 URL <http://www.tepco.co.jp/en/index-e.html>



Available in : Japan, Europe

CO<sub>2</sub> refrigerant heat pump water heater (Eco Cute)

## Eco-products

EP-6-040

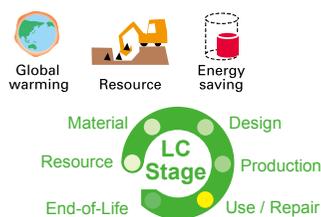
Interior decoration / Exterior decoration or furniture

heat pump hot-water supply system

### Heat pump water heater using CO<sub>2</sub> refrigerant "Eco Cute"

"Eco Cute" is a water heater worked by a heat-pump. It is an environment-friendly machine which uses CO<sub>2</sub> as a natural refrigerant. There are no smell and no smoke, because the water is boiled not with fire but with the heat of air. If you make hot water with "Eco Cute", you can contribute to CO<sub>2</sub> reduction and also save the running cost of hot water supply.

- Energy Saving: Power consumption is reduced by 15% by use of the new-type heat pump. CO<sub>2</sub> is a coolant that has a global warming coefficient of 1 and an ozone depletion coefficient of 0
- Resource Saving: Product weight was reduced by 10kg.



#### TOSHIBA ELECTRIC APPLIANCES CO.,LTD.

24-8, Higashiueno 5-chome, Taitoh-ku, TOKYO 110-0015, Japan  
 Tel 81-3-5806-9043 Fax 81-5828-192  
 E-mail [info@kiki.toshiba.co.jp](mailto:info@kiki.toshiba.co.jp)  
 URL <http://www.toshiba-kiki.co.jp/>



Available in : Japan

HPE-FB364SC

## Eco-products

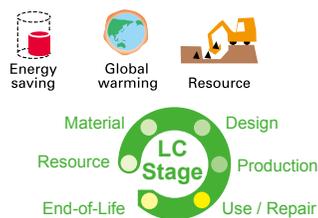
EP-6-041

Interior decoration / Exterior decoration or furniture

fuel cell co-generation system for residential use

### Fuel cell co-generation system for residential use

Our company has developed residential cogeneration systems based on Polymer Electrolyte Fuel Cells (PEFC). Jointly developed with Ebara Ballard Corporation is fueled by hydrogen extracted from city gas to supply electricity and hot water. Compared with conventional thermal power plant and hot water boiler, these systems contribute to energy savings by up to 31% and to the reduction of CO<sub>2</sub> emissions by up to 45% with its high efficiency. ( Electrical efficiency:33%, Heat recovery efficiency:45% in high heat value )



#### Tokyo Gas Co., Ltd

1-5-20 Kaigan, Minato, Tokyo 105-8527, Japan  
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## Eco-products

EP-6-042

Interior decoration / Exterior decoration or furniture

fuel cell co-generation system for residential use

### Fuel cell co-generation system for residential use

Our company has developed residential cogeneration systems based on Polymer Electrolyte Fuel Cells (PEFC). Jointly developed with Matsushita Electric Industrial Co., Ltd., is fueled by hydrogen extracted from city gas to supply electricity and hot water. Compared with conventional thermal power plant and hot water boiler, these systems contribute to energy savings by up to 31% and to the reduction of CO<sub>2</sub> emissions by up to 45% with its high efficiency. ( Electrical efficiency:33%, Heat recovery efficiency:45% in high heat value )



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## Eco-products

EP-6-043

Interior decoration / Exterior decoration or furniture

gas co-generation system

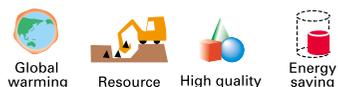
### EcoWill - energy-saving gas cogeneration system

EcoWill is an energy-efficient household-use cogeneration system fueled by environment-friendly natural gas.

It generates electricity and supplies hot water by utilizing waste heat from the gas engine.

EcoWill has realized reduction of primary energy consumption by 22% and CO<sub>2</sub> emission by 32% as it utilizes the exhaust heat from power generation for hot water supply and space heating.

The system supports the comfortable living while contributing to the environmental conservation.



#### Osaka Gas Co., Ltd.

4-1-2, Hiranomachi, Chuo-ku, Osaka-shi, Osaka 541-0046, Japan  
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E-mail  
URL <http://www.osakagas.co.jp/indexe.html>



## Eco-products

EP-6-044

Interior decoration / Exterior decoration or furniture

dishwashers

### Washing and dry dishes machine, saving water

This washing and drying dishes machine is equipped with a bowl which makes the spout narrow in the nozzle, and it realize high-pressure washing. Consequently, a quantity of water used for washing and rinsing is 10 liters, accomplishing significant saving water compared with 80 liters of hand washing.



#### TOTO LTD.

2-24-2, Sakurashinmachi, Setagaya-Ku, Tokyo 154-8540, Japan  
Tel 81-3-5451-1110 Fax 81-3-5451-1049  
E-mail  
URL <http://www.toto.co.jp>



KHEUF100S

## Eco-products

EP-6-045

Interior decoration / Exterior decoration or furniture

dishwashers

### Dishwasher - hot water heated by gas for economical/energy-saving dishwashing

The energy efficient gas water heater supplies water for the dishwasher and, compared with handwashing, water consumption is reduced to 1/8 and gas consumption to 1/4.



#### Osaka Gas Co., Ltd.

4-1-2, Hiranomachi, Chuo-ku, Osaka-shi, Osaka 541-0046, Japan  
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 E-mail  
 URL <http://www.osakagas.co.jp>

## Eco-products

EP-6-046

Interior decoration / Exterior decoration or furniture

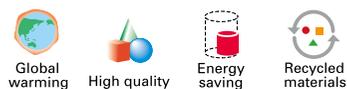
solar modules

### Solar Modules

In Germany, the world's largest market, we have an excellent reputation. In the "Stiftung Warentest"<sup>※1</sup> Kyocera's module KC-170GT-2<sup>※2</sup> received to honors, Winning the GUT1.9 among 15 competitor's modules in May 2006. Even in Germany's highly competitive market Kyocera's reputation shines.

※1 "Stiftung Warentest" is an independent organization founded by the German government to examine and rate foods, cosmetic preparations, electrical appliance, and various consumables.

※2 Modules for European specifications.



#### KYOCERA Corporation

6 Takeda Tobadono-cho, fushimi-ku, Kyoto 612-8501, Japan  
 Tel 81-75-604-3855 Fax 81-75-604-3475  
 E-mail  
 URL <http://www.kyocera.co.jp/>

Solar Modules

## Eco-products

EP-6-047

Interior decoration / Exterior decoration or furniture

photovoltaic

### Solar Lamp

Solar lamp is able to power up independently without on-grid power supply. Solar lamp is designed with classic wrought iron structure coupled with advanced solar energy technology. It stores 4 hours of sun energy in the day and will power up the light automatically for 12 hours in the night, 7pm to 7am.

In addition, Solar lamp is portable and environmentally friendly. It can be placed anywhere in your landscape and produces 12 hours of illumination with zero carbon dioxide emission. With designing and manufacturing in Singapore, customization of Solar lamp is possible to suit your distinct requirements and environment.

#### Grenergy Pte Ltd

Blk 22 Woodlands Link, #01-44 Woodlands East Industrial Estate  
738734, Singapore  
E-mail [info@grenergy.com.sg](mailto:info@grenergy.com.sg)  
URL <http://www.grenergy.com.sg>

Available in : Singapore



## Eco-products

EP-6-048

Interior decoration / Exterior decoration or furniture

photovoltaic

### Solar Table

Solar table is able to power up independently without on-grid power supply. Solar table is designed with classic wrought iron structure coupled with advanced solar energy technology. It stores 4 hours of sun energy for a 5 hours use of laptop in the night. Solar table has an IP66 outdoor power socket suitable for any low power applications liked laptop, fans, lights etc.

In addition, Solar table produces 5 hours of laptop power with zero carbon dioxide emission. With designing and manufacturing in Singapore, customization of Solar table is possible to suit your distinct requirements and environment.

#### Grenergy Pte Ltd

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738734, Singapore  
E-mail [info@grenergy.com.sg](mailto:info@grenergy.com.sg)  
URL <http://www.grenergy.com.sg>

Available in : Singapore



## Eco-products

EP-6-049

Interior decoration / Exterior decoration or furniture

elevators

### Machine room-less elevator, featuring space & energy savings

"SPACIAL-EX™" is a machine room-less elevator system which adopted the "winding-machine upper-installation method". The feature of this system is that the driving device and the control equipment are hard to be exposed to water, when water flows into the up and down road by disasters.

- **Energy Saving:** Adopted was a newly developed compact-winding machine in which PMSM (a permanent magnet synchronous motor) was incorporated. The motor capacity was reduced by 20% compared to the rope-type elevator of 20 years ago. (5.5kW to 4.5kW)
- **Resource Saving:** Machine room indispensable until now has become unnecessary. The newest lighting system was installed for the ceiling light. It has 50000 hours life, 8 times of the conventional fluorescent lamp. Mercury amount was reduced to 93% for 10 years.
- **Elimination of harmful chemical substances:** Fixation method was changed from the rope to the wedge; the lead used for the terminal processing of the rope was abolished. Vinyl chloride used for floor tiles and basket-room make-up steel-plates was altered to poly-olefin.



#### TOSHIBA ELEVATOR AND BUILDING SYSTEMS CORPORATION

5-27, Kitashinagawa 6-chome, Shinagawa-ku, Tokyo 141-0001, Japan  
 Tel 81-3-5423-3330 Fax 81-3-5423-3425  
 E-mail  
 URL [http://www2.toshiba-elevator.co.jp/elv/index\\_j.jsp](http://www2.toshiba-elevator.co.jp/elv/index_j.jsp)

Available in : JAPAN

Machine-Room-Less Elevator "SPACEL-EX™"

## Eco-products

EP-6-050

Interior decoration / Exterior decoration or furniture

wood products

### Container Support Wood for Safety Choking

Our Technical wood will act as alternative of natural wood. Suitable for container Support Wood with higher strength and able cut to customer requirement sizes. All our Technical Wood does not require fumigation or heat treatment. Ensure able to clear all country quarantine

The quality is better than natural wood. The advantages of the Container Support Wood for choking the container gate.

- 1.) No cracks
- 2.) No pest
- 3.) Low moisture
- 4.) High nailing holding power
- 5.) No wastages
- 6.) Fast turnaround time
- 7.) Precision of sizes
- 8.) Does not require fumigation or heat treatment. ISPM15 compliance.



#### LHT Holdings Limited

No.27 Sungei Kadut Street 1 729335, Singapore  
 Tel 65-6269-7890 Fax 65-6367-4907  
 E-mail [enquiry@lht.com.sg](mailto:enquiry@lht.com.sg)  
 URL <http://www.lht.com.sg>

Available in : Worldwide

## Eco-products

EP-6-051

Interior decoration / Exterior decoration or furniture

wood products

### Dunnages for Sea Freight support purpose

The LHT Technical Wood dunnages is a brilliant outcome of waste wood recycling innovation. Wood waste is being crushed and mechanically shaped into a wide range of specially design recycled wooden products. The LHT Technical Wood dunnages is not only environmentally friendly but also cost effective. It is strong due to its high density and is consistent in texture and colour. In addition, LHT Technical Wood is chemical and pest resistant, fire retardant and is low in moisture content. Technical Wood is also a trademark of LHT Holdings Limited. Technical Wood are also Green Label Products awarded by Singapore Environment Council and Innovation award by Senoko Power Of Singapore.



#### LHT Holdings Limited

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Available in : Worldwide

## Eco-products

EP-6-052

Interior decoration / Exterior decoration or furniture

wood products

### ECR/RFID Pallet for FMCG Industry

Kim Hiap Lee Co. Pte Ltd a subsidiary of LHT Holdings Limited, a pallet leasing company which lease the Efficiency Consumer Response (ECR)/ Radio Frequency Identification (RFID) pallets to Fast Moving Consumer Goods (FMCG) industry. The ECR/RFID pallet is also a maintenance-free finished product and is certified to the ISO 6780 'General-purpose flat pallets for through transit of goods - Principal dimensions and tolerances' and SS 334 'Specification for Timber Pallets'.

The benefits of the ECR/RFID pallet rental scheme helps customer to reduce

- 1) capital investments
- 2) warehouse storage costs
- 3) pallet maintenance costs
- 4) exchangeable & share assets etc..

With the RFID tagging to the ECR pallets, it helps to identify the rightful customer gives accurate tracing, verification of endorsement in receiving, lower inventory and reduce manpower in stock-take.



#### LHT Holdings Limited

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 Tel 65-6269-7890 Fax 65-6367-4907  
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Available in : Worldwide

## Eco-products

EP-6-053

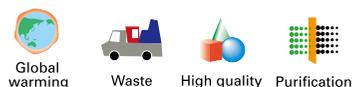
Interior decoration / Exterior decoration or furniture

wood products

### Greenflo Flooring, Doors and Door frame system

In 1999, LHT Holdings Limited developed the world first Greenflo Doors & Flooring system.

Greenflo doors are made using high density Technical Wood topped with specially designed door skin which enhances its durability and stability. It rated E1 standard core material to give green environment. Greenflo flooring is making using high density Technical Wood as the base and topped a 100% grade solid wood veneer. The Greenflo products have eliminated the natural wood defects, such as environment friendly, no cracks, pest free, low moisture etc. Greenflo Products are also Green Label Products award by Singapore Environment Council (SEC).



#### LHT Holdings Limited

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Available in : Worldwide

## Eco-products

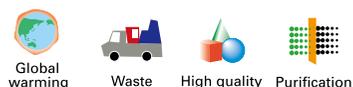
EP-6-054

Interior decoration / Exterior decoration or furniture

wood products

### IPPC Box

Yet another value-added product by LHT, the IPPC box is made from environmentally-friendly processed wood that is ISPM No15 compliant. It does not require any fumigation or heat treatment and it is light-weight and convenient for packaging and shipping. LHT believes in investing for the quality and efficiency. Which is why the design of the IPPC box is well designed with highly quality Technical wood and efficient mode of does it yourself assembly. The IPPC Box able to collapsible to save transportation cost, man powers and storage charges etc. By ensuring more controlled and consistent assembly standard, customers can be assured of precision and quality of every box. This is suitable for Dangerous good Example : Chemical etc



#### LHT Holdings Limited

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Available in : Worldwide

## Eco-products

EP-6-055

Interior decoration / Exterior decoration or furniture

wood products

### IPPC Pallet

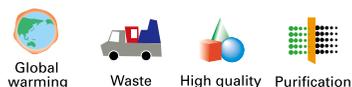
According to International Standards for Phytosanitary Measures (ISPM) No. 15 "Guidelines for Regulating Wood Packaging Material in International Trade" of International Plant Protection Convention (IPPC). Wood packaging made of wholly of wood-based products such as plywood, particle board, oriented strand board or veneer that have been using glue, heat and pressure or a combination there of should be considered sufficiently processed to have eliminated the risk associated with the raw wood. All our IPPC pallets are made of process wood and conform to ISPM No.15.

IPPC Pallets is made of LHT Technical Wood and original tropical hardwood fibres that undergo a high-pressure and high-temperature steaming process. Hence it share similar characteristics of natural solid wood but has the added advantages of being pest and fungus-resistant in accordance to the international standard. The Technical Wood enhances its performance in being fire and water resistant. The moisture content of lower than 10% means strengthened stability and hence the further reduction of thickness swelling.

#### LHT Holdings Limited

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 URL <http://www.lht.com.sg>

Available in : Worldwide



## Eco-products

EP-6-056

Interior decoration / Exterior decoration or furniture

wood products

### Mould Pallets

LHT Mould Pallets are the result of shaping the crushed chips into various forms with specially designed moulds. Through such versatility in usage, we are able to enhance our products to suit diverse need. All the Technical wood moulded pallets are IPPC ISPM15 compliance our mould pallet is nest-able and rack-able by adding on our LHT Technical wood planks.

These add on features are also convenience and handle well by conveyor movement safely. Moulded pallets are able to do stacking in between on another pallets without damages of any cargoes purpose.

#### LHT Holdings Limited

No.27 Sungei Kadut Street 1 729335, Singapore  
 Tel 65-6269-7890 Fax 65-6367-4907  
 E-mail enquiry@lht.com.sg  
 URL <http://www.lht.com.sg>

Available in : Worldwide



## Eco-products

EP-6-057

Interior decoration / Exterior decoration or furniture

wood products

### Technical Wood Made by Waste Wood

The LHT Technical Wood is a brilliant outcome of waste wood recycling innovation. Wood waste is being crushed and mechanically shaped into a wide range of specially design recycled wooden products. The LHT Technical Wood is not only environmentally friendly but also cost effective. It is strong due to its high density and is consistent in texture and colour. In addition, LHT Technical Wood is chemical and pest resistant, fire retardant and is low in moisture content. Technical Wood is also a trademark of LHT Holdings Limited.



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Available in : Worldwide

## Eco-products

EP-6-058

Interior decoration / Exterior decoration or furniture

wood products

### Technical Wood Beams

The best solutions for all kinds of USA pallets with cut holes feature. The quality is better than natural wood. The advantages of the Technical wood blocks

- 1.) No cracks
- 2.) No pest
- 3.) Low moisture
- 4.) High nailing holding power
- 5.) No wastages
- 6.) Fast turnaround time
- 7.) Precision of sizes
- 8.) Does not require fumigation or heat treatment. ISPM15 compliance.



#### LHT Holdings Limited

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Available in : Worldwide

## Eco-products

EP-6-059

Interior decoration / Exterior decoration or furniture

wood products

### Technical Wood Blocks

The quality is better than natural wood. The advantages of the Technical wood blocks are

- 1.) No crack
- 2.) No pest
- 3.) Low moisture
- 4.) High nailing holding power
- 5.) No wastages
- 6.) Fast turnaround time
- 7.) Precision of sizes
- 8.) Does not require fumigation or heat treatment. ISPM15 compliance.

The LHT Technical Wood is a brilliant outcome of waste wood recycling innovation. Wood waste is being crushed and mechanically shaped into a wide range of specially design recycled wooden products. The LHT Technical Wood is not only environmentally friendly but also cost effective. It is strong due to its high density and is consistent in texture and colour. In addition, LHT Technical Wood is chemical and pest resistant, fire retardant and is low in moisture content. Technical Wood is also a trademark of LHT Holdings Limited.

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Available in : Worldwide



## Eco-products

EP-6-060

Interior decoration / Exterior decoration or furniture

wood products

### Technical Wood Pallets

Technical Wood Pallets is made of original tropical hardwood fibres that undergo a high-pressure and high-temperature steaming process. Hence it share similar characteristics of natural solid wood but has the added advantages of being pest and fungus-resistant in accordance to the international standard. The Technical wood enhances its performance in being fire and water resistant. The moisture content of lower than 10% means strengthened stability and hence the further reduction of thickness swelling. The quality and supply of LHT Technical Wood pallet is stable and produced base on the required measurement density and other specifications. This is also helps to reduce wastage and keep production costs low and stable. This is no further process of kiln dry is necessary.

Our Technical Wood pallets are made of process wood and conform to ISPM No.15. Thus does not require fumigation or heat treatment. This is able to clear all country quarantine without questioning.

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 E-mail enquiry@lht.com.sg  
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Available in : Worldwide



## Eco-products

EP-6-061

Interior decoration / Exterior decoration or furniture

wood products

### Technical Wood Planks

The LHT Technical Wood is a brilliant outcome of waste wood recycling innovation. Wood waste is being crushed and mechanically shaped into a wide range of specially design recycled wooden products. The LHT Technical Wood is not only environmentally friendly but also cost effective. It is strong due to its high density and is consistent in texture and colour. In addition, LHT Technical Wood is chemical and pest resistant, fire retardant and is low in moisture content. Technical Wood is also a trademark of LHT Holdings Limited.

The quality is better than natural wood. The advantages of the Technical wood blocks

- 1) No cracks
- 2) No pest
- 3) Low moisture
- 4) High nailing holding power
- 5) No wastages
- 6) Fast turnaround time
- 7) Precision of sizes
- 8) Does not require fumigation or heat treatment. ISPM15 compliance.

#### LHT Holdings Limited

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 E-mail enquiry@lht.com.sg  
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Available in : Worldwide

## Eco-products

EP-6-062

Interior decoration / Exterior decoration or furniture

warm water floor heater

### An energy saving heat pump-type warm water floor heater system

ECO NUCOOL PICO is the compact type water floor heater using heat pump pursuing energy saving.

----<< E : Energy >>----

The heat source of the system is heat pump that takes solar thermal energy in and use it for heating. The system can restrain 69% a year CO<sub>2</sub> outbreak in comparison with the electric heater-style heating machine (our test calculation).

----<< M : Material >>----

Also a sealing up type adopts a water supply disused method. Using Mitsubishi Electric's original long life circulation liquid, it does not take the trouble with longer life.



#### Mitsubishi Electric Corporation

2-7-3, Marunouchi Chiyoda-ku, Tokyo 100-8310, Japan  
 Tel 81-3-3218-9024 Fax 81-3-3218-2465  
 E-mail eqd.eco@pj.MitsubishiElectric.co.jp  
 URL <http://www.mitsubishielectric.co.jp/>



Available in : Japan

Heat exchange unit : VEH-406HCU-M3, Outdoor unit : VEH-406HPU3

## Eco-products

EP-6-063

Interior decoration / Exterior decoration or furniture

hand dryer

### JET TOWEL the hand dryer - environment friendly facility

It eliminates paper waste and fewer natural resources are consumed.

-----<< M : Material >>-----

DC brushless motor has the durability of seven years by 1,000 times of use per one day, which realizes its longer life.

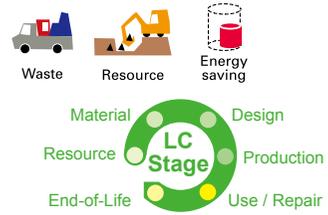
-----<< E : Energy >>-----

Low consumption electricity, reduced 15% compared with that of the conventional model, is industry No. 1. (our investigation as of February 1, 2007)

It is equipped with a newly developed "hyper slit nozzle" that blows off drops of water on hands with a filmy jet blow at a stretch and improves its dry efficiency.

#### Mitsubishi Electric Corporation

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 Tel 81-3-3218-9024 Fax 81-3-3218-2465  
 E-mail eqd.eco@pj.MitsubishiElectric.co.jp  
 URL <http://www.mitsubishielectric.co.jp/>



Available in : Japan, see:<http://www.mitsubishjettowel>

JT-SB116GN

## Eco-products

EP-6-064

Interior decoration / Exterior decoration or furniture

generators

### Highly Efficient Photovoltaic Module

-----<< E : Energy >>-----

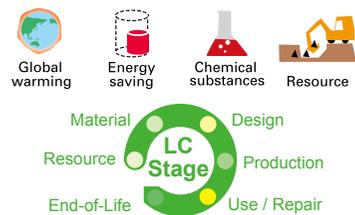
This module for house in Japan realizes 185W output, which marks industrial best (in our investigation at June 2007, in polycrystalline silicon type), by enlarging each photovoltaic cell and devising to take more in the reflecting light from back film. 38% larger output from conventional model. When installing 3.7kW system in Tokyo, about 3808kWh power is to be generated per year, which reduces about 1198kg-CO<sub>2</sub>, corresponding more than 60% of CO<sub>2</sub> emission from a general house per year (1980kg-CO<sub>2</sub>)

-----<< M : Material >>-----

This module does not need horizontal rack, which is conventionally used for installation, which contributes about 61kg (13%) reduction of weight and resource consumption from conventional installation.

#### Mitsubishi Electric Corporation

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 URL <http://www.mitsubishielectric.co.jp/>



Available in : Japan

PV-MX185G

## Eco-products

EP-6-065

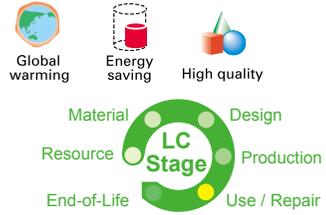
Interior decoration / Exterior decoration or furniture

generators

### Power Conditioner with Industry Best Conversion Efficiency

-----<< E : Energy >>-----

This power conditioner for house use in Japan by mass production realizes the industry highest 97.5% in power conversion efficiency (in our investigation at September 2007). The industry first "gradation control inverter method " generates pseudo sine wave nearly the same as alternating current using tree inverter units. Newly developed MOSFET module for the gradation control reduces 44% of power conversion loss from conventional model.



#### Mitsubishi Electric Corporation

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 E-mail eqd.eco@pj.MitsubishiElectric.co.jp  
 URL <http://www.mitsubishielectric.co.jp/>



Available in : Japan

PV-PN40G

## Eco-products

EP-6-066

Interior decoration / Exterior decoration or furniture

air conditioners

### Compact Design "City Multi" Air Conditioner

Due to the compact design of the outdoor unit, industry leading space saving is realized.

-----<< M : Material >>-----

The manageability of the outdoor unit has been improved due to a drastic reduction in it's weight, leading to easy transportation, installation, and reduction in withstand load. Approx. 33kg reduction in weight from the previous model.

-----<< E : Energy >>-----

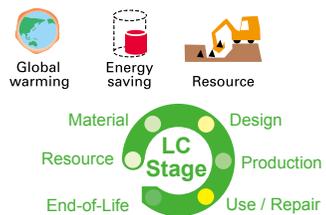
VRF ( Variable Refrigerant Flow ) is a multi and direct expansion type air conditioning system where by one outdoor unit can be connected with multiple indoor units. The amount of refrigerant can be regulated freely according to the load on the indoor unit by the inverter driven compressor in the outdoor unit. Energy conservation is easily handled because individual indoor units can stop and start their operation as needed.

-----<< T : Toxcity >>-----

R410 refrigerant is zero ODP (Ozon Depletion Potential)

#### Mitsubishi Electric Corporation

2-7-3, Marunouchi Chiyoda-ku, Tokyo 100-8310, Japan  
 Tel 81-3-3218-9024 Fax 81-3-3218-2465  
 E-mail eqd.eco@pj.MitsubishiElectric.co.jp  
 URL <http://www.mitsubishielectric.co.jp/>



Available in : Asia, Oceania, Europe, Americas

PUHY-P250YHM-A

## Eco-products

EP-6-067

Interior decoration / Exterior decoration or furniture

air conditioners

### "Replace Multi" Air Conditioner Reusing Existing Refrigerant Pipe

"Replace Multi" is an air conditioning system for building using existing refrigerant pipe, which basically contributes resource saving.

-----<< M : Material >>-----

Compact design in outdoor unit enables to be carried by an elevator for 6 people.

Automatic refrigerant charge and automatic mineral oil collection enables great shortening of term of onstruction.

It collects oil through general air conditioning operation.

-----<< E : Energy >>-----

R410 refrigerant marks COP 4.01.

#### Mitsubishi Electric Corporation

2-7-3, Marunouchi Chiyoda-ku, Tokyo 100-8310, Japan  
Tel 81-3-3218-9024 Fax 81-3-3218-2465  
E-mail eqd.eco@pj.MitsubishiElectric.co.jp  
URL <http://www.mitsubishielectric.co.jp/>

Available in : Japan



Replace Multi E ECO

## Eco-products

EP-6-068

Interior decoration / Exterior decoration or furniture

air conditioners

### Energy and Resource Saving Packaged Air Conditioner

-----<< M : Material >>-----

Following technologies are developed to dispense with pipe washing or replace of pipes.

- (1) High quality active carbon filter named replace filter removes chlorinations remained in pipes.
- (2) Alkylbenzene refrigerator oil, which is originally developed and is stable and hard to decay, gives refrigerant circuit longer life.
- (3) The wide strainer catches 30% more iron powder enables replacement caused by compressor destruction accident.

Compact design in outdoor unit contributes also to resource saving (11kg weight reduction, 407mm high shortening for 140 type).

-----<< E : Energy >>-----

The scroll compressor in outdoor unit with the originally developed "flame compliance mechanism", which greatly reduces friction loss.

"Move Eye 360 degrees" detects floor temperature all around and controls temperature to feel with a body which prevents uneven temperature distribution and needless cooling and warming operation.

#### Mitsubishi Electric Corporation

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E-mail eqd.eco@pj.MitsubishiElectric.co.jp  
URL <http://www.mitsubishielectric.co.jp/>

Available in : Japan



MPUZ-WRP140HA6, MPLZ-WRP140BEL

## Eco-products

EP-6-069

Interior decoration / Exterior decoration or furniture

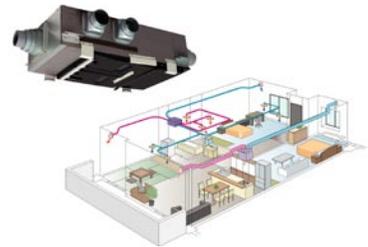
ventilators

### "Lossnay" Recycling Air-conditioning Energy by Heat Exchange Ventilation

-----<< E : Energy >>-----

Lossnay is the energy saving ventilation system through the heat exchange ventilation that collects and reuses heat energy of both cooling and warming.

Lossnay Central ventilation system ventilates a whole house by one unit. It won't lose comfortness of cooling or warming because it ventilates with heat exchange. Big amount of wind and 6 ways separation can ventilat 1 floor by 1 system for multifamily housing that has many and wide rooms.



#### Mitsubishi Electric Corporation

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URL <http://www.mitsubishielectric.co.jp/>

Available in : Japan

VL-200PZMS

## Eco-products

EP-6-070

Interior decoration / Exterior decoration or furniture

hot-water supply system

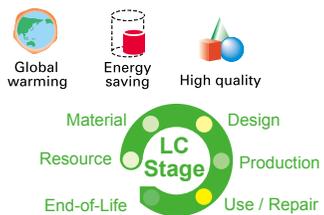
### "Eco Cute" Water Heater Using Natural Refrigerant

-----<< E : Energy >>-----

The single rotary compressor for water heater using CO<sub>2</sub> refrigerant, same as used for our air conditioner, and twist and spiral gas cooler with high heat transfer efficiency in heat exchage at water heating unit enables highly efficient running.

-----<< T : Toxicity >>-----

CO<sub>2</sub> natural refrigerant does not deplete ozon layer.



#### Mitsubishi Electric Corporation

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Tel 81-3-3218-9024 Fax 81-3-3218-2465  
E-mail eqd.eco@pj.MitsubishiElectric.co.jp  
URL <http://www.mitsubishielectric.co.jp/>

Available in : Japan

SRT-HP55W2

Intelligent Energy Saving Air Conditioner "Kirigamine" with New Move-eye Sensor

-----<< E : Energy >>-----

The "New Move-eye sensor" finds where a person is, measures the floor temperature, and catches the action of the person. Then it conducts three level energy saving running, which enables at most approximately 50% energy conservation compared from the same output model released in 1996.

- (1) One leaf ECO level reduces about 30% : monitoring the floor temperature and control air conditioner by the temperature that a body feels.
- (2) Two leaves ECO level reduces about 10% : monitoring where one person is and concentrates air condition to the only area he is in.
- (3) Tree leaves ECO level reduces about 10% : monitoring the person's acting behaviour and control the power for the temperature that he needs.

Adding to these functions, it has the automatic cleaning function, which keeps the indoor unit ever clean, reduces approximately 30% energy consumption compared to the one with dirty heat exchange unit and fan.

**Mitsubishi Electric Corporation**

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 E-mail eqd.eco@pj.MitsubishiElectric.co.jp  
 URL <http://www.mitsubishielectric.co.jp/>



Available in : Japan

MSZ-ZW408S

1  
2  
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## Eco-products

EP-7-001

Building and civil engineering

particle board, glued laminated timber

### Woodchip-board [Artificial soil for re-vegetation]

This product recycles woodchips from trees that have been cut down and abandoned after land formation. A grout coating ensures that the chips combine firmly, producing a woodchip board with outstanding durability. It has consecutive voids, providing an environment where plants can grow even in severe conditions such as acid soil or concrete walls.



#### Obayashi Corporation

Shinagawa Intercity Tower B, 2-15-2, Konan, Minato-ku, Tokyo 108-8502, Japan  
 Tel 81-3-5769-1311 Fax 81-3-5769-1829  
 E-mail hamai.kunihiko@obayashi.co.jp  
 URL <http://www.obayashi.co.jp/>



tip-board (500 × 500 × 30mm)

## Eco-products

EP-7-002

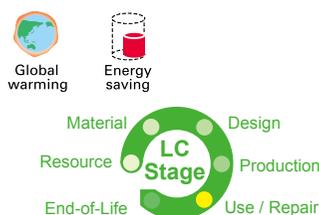
Building and civil engineering

water synthetic resin paint

### This product efficiently reflects the solar energy radiated from solar light.

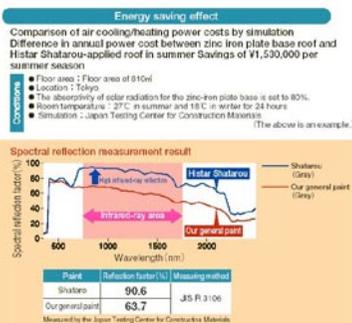
#### Features

- This is a water-based type of paint and an environment-friendly product.
- The product is provided with a thermal screening function.
- The product is nonflammable. Therefore, operations can be safely performed.
- This paint can be applied regardless of the old film of paint and offers high durability.
- This product contains a very low volatile organic compound content.



#### Hitachi Chemical Industrial Materials Co.,Ltd.

5-12-15, Namekawa Honcho, hitachi-shi, Ibaraki Prefecture 317-0051, Japan  
 Tel 81-294-22-1313 Fax 81-294-22-1782  
 E-mail newinfo@hc-kozai.co.jp  
 URL <http://www.hc-kozai.co.jp>



Energy saving effect

## Eco-products

EP-7-003

Building and civil engineering

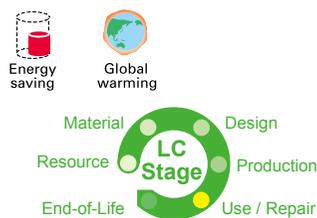
paints and related products

### Building exterior paint invented with energy conse"Miracool"

Coating with "Miracool" reflects sunlight about 90%, which curb the rise of the temperature at building roof and well. In addition, it drastically reduces heat quantity of transmission owing to its low coefficient of thermal conductivity and high long-wave emissivity. Because of these functions, "Miracool" can contribute to energy conservation by making building's cooling load reduced. Not only for energy conservation of building itself, it can also be helpful for mitigating the heat island phenomenon, an extraordinary high temperature in the urban area as a whole, as it is able to control the absorption of solar energy. We can provide "Miracool way" for asphalt-paved road, other than the one for building.

#### MIRACOO Co., Ltd.

1-11-15-4F, Nihonbashi-horidomecho, Chuo-ku, Tokyo 103-0012, Japan  
 Tel 81-3-3249-0272 Fax 81-3-3249-0270  
 E-mail info@miracool.jp  
 URL <http://www.miracool.jp>



Miracool

## Eco-products

EP-7-004

Building and civil engineering

polymers, plastics, plastic products

### High-performance Acoustic Material for Traffic noise "FIBLIGHT"

FIBLIGHT is a high-performance acoustic material consist of polyester staples binded by special fibers (low-melting point polyester).

It is used for noise barriers on highway or railway.

- 1) "FIBLIGHT" has good sound absorption characteristics.
- 2) "FIBLIGHT" has good durability and weatherability for outdoor use.  
It shows stable performance for long time.
- 3) "FIBLIGHT" has good water-repellent efficiency by using special water-repellent teratment. It shows stable performance at all weather condition.
- 4) Using recycle polyester fiber. Reduce environmental effect at disposing. Acquired an Eco mark in Japan.

#### Bridgestone Corporation

10-1, Kyobashi 1-chome Chuo-ku, Tokyo 104-8340, Japan  
 Tel 81-3-5202-6871 Fax 81-3-5202-6874  
 E-mail  
 URL <http://www2.bridgestone-dp.jp/civil/>



FIBLIGHT (Sound insulating wall of expressway)

## Eco-products

EP-7-005

Building and civil engineering

rubber products

### Caisson Mat

The caisson mat is the rubber mat which increases the friction between caisson and foundation. It enables the caisson smaller as it has to be without caisson mat. The caisson mat uses the rubber waste from the tire manufacturing process which is called "spu". So, the caisson mat recycles the tire spu as the material and reduce the amount of concrete for caisson block.



Caisson Mat

#### Bridgestone Corporation

10-1, Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
 Tel 81-3-5202-6871 Fax 81-3-5202-6874  
 E-mail  
 URL <http://www2.bridgestone-dp.jp/civil/>

## Eco-products

EP-7-006

Building and civil engineering

concrete products for roads

### Pavement block "NOXER" for preventing air pollution by photo-catalysis

NOXER is a pavement block that has a function to decompose harmful substances by oxidation in the surface layer of concrete block. The function is based on the photocatalytic reaction that is caused by titanium oxide. Formation of active oxygen takes place by the action of photocatalytic reaction when titanium oxide in the surface layer of the block is exposed to ultraviolet ray in the sunlight. The formed active oxygen oxidizes the harmful substances, and decomposes them.



Chigasaki City

#### Mitsubishi Materials Corporation

19F WEST OFS 1-5-1, Ohtemachi, Chiyoda-ku, Tokyo 100-8117, Japan  
 Tel 81-3-5252-5331 Fax 81-3-5252-5344  
 E-mail [noxer@mmc.co.jp](mailto:noxer@mmc.co.jp)  
 URL <http://www.mmc.co.jp/english/product/construct/index.html>

Available in : JAPAN

## Eco-products

EP-7-007

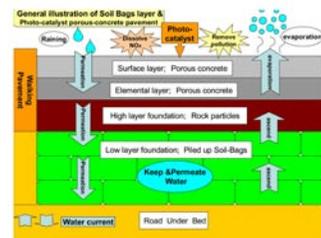
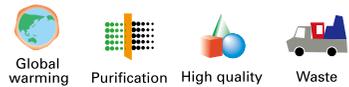
Building and civil engineering

concrete products for roads

### The Newest Road Pavement together Soil-Bags with Photo-catalyst Porous-Concrete

This product is developed to solve the environmental problems example earth-warming, heat-island, air pollution by automobile or factory outlet-gases, traffic noise, tremor. Concrete structure is that Photo-catalyst porous concrete on surface layer and piled up Soil-bags layer in underground.

- The effect of surface layer (Photo-catalyst porous concrete)
  1. Permeation of rain water because of porous structure. (Prevention of the urban flood)
  2. Decrease traffic noise. (tire noise)
  3. Prevention of road heating (because of reflection of sun light and evaporation by photo-catalyst action. The differ is 10°C)
  4. Dissolution of bad gasses such like NO<sub>x</sub> or SO<sub>x</sub> by emitted automobiles.
- The effect of Underground layer (Piled up Soil-bags layer)
  1. The progress of durability on the foundation, prevention of layer gaps and subsidence
  2. Save the working cost (Because of decrease of dig depth of the road)
  3. Decrease of traffic tremor (Because of replacing vibration-frequency)
  4. Decrease of an earthquakes vibration. Also it can be used the recycled materials in Soil-Bags, such as the melting slug of the living or industrial dust. So it contributes to reduce garbage.



#### Taiyu concrete industry Co., Ltd.

Kanayama 5-14-2, Naka-ward, Nagoya City, Aichi Pref 460-0022, Japan  
 Tel 81-52-882-6291 Fax 81-52-882-6221  
 E-mail taiyucn@taiyu-con.jp  
 URL <http://www.taiyu-con.jp>

Available in : Japan, (Provide technique) Asia, Europe, USA

General illustration of The Newest pavement structure

## Eco-products

EP-7-008

Building and civil engineering

concrete products

### Concrete Crab-Panel

Crab-Panel is a concrete panel, which capable of creating an abundant of living space and also improving habitat condition for aquatic creatures.

Recovering food chain of coastal area: Conventional concrete revetment is unable to provide a sustainable habitat for living creatures (especially crabs which live near water), as a result decreasing of the coastal resources occurred. Crab-Panel is developed to overcome this situation.

- Worth points
  - This panel is established in front of the existing revetment or retaining wall.
  - Coarse surface of the panel could allow algae grow densely on it.
  - Joint of the panel is a suitable part for crabs to hide and move around.
  - Holes are set on the panel, which were allowed the crabs burrow and hibernate during winter.
  - To reduce the light reflection, surface color of the panel is adjusted.
  - Surface color could be adjusted to harmonize the surrounding.

#### Kajima Corporation

6-5-1 Akasaka, Minato-ku, Tokyo 107-8348, Japan  
 Tel 81-3-5544-0734 Fax 81-3-5544-1733  
 E-mail env-act@ml.kajima.com  
 URL [http://www.kajima.co.jp/tech/env\\_planning/seitaike](http://www.kajima.co.jp/tech/env_planning/seitaike)



Crabs on Concrete Crab-Panel

## Eco-products

EP-7-009

Building and civil engineering

cement products

### Building material "MOISS" having symbiosis with the environment

MOISS is flame retardant building material for the architecture. It's an epoch-making building material for interior decoration, which has functions of adsorption and decomposition of the volatile organic compounds (VOC) that are the cause of sick house syndrome. In addition, function of humidity control can be used to resolve the problem of dew condensation. And, it is acknowledged as proof-stress side material for wooden house because of its workability and nail-holding force like the quality of wood. As a result, the use of MOISS is increasing rapidly. And, recycling of MOISS is possible after crushing, when it becomes waste wood. Besides, it was accredited as fertilizer in 2005; it consists of silicic acid compound.



#### Mitsubishi Materials Corporation

19F WEST OFS 1-5-1, Ohtemachi, Chiyoda-ku, Tokyo 100-8117, Japan  
 Tel 81-3-5252-5331 Fax 81-3-5252-5344  
 E-mail  
 URL <http://www.mmc.co.jp/english/product/construct/index.html>

Available in : Japan

MOISS is used for the interior material

## Eco-products

EP-7-010

Building and civil engineering

building bricks

### Recycled non-burned brick

"Earthen Bricks" are non-burned bricks using recycled materials from the by-products and waste products discharged from businesses and local autonomies. Recycled material accounts for over 80% of the total ingredients. Furthermore CO<sub>2</sub> emission is reduced by about 40% with this product, compared with conventional burned bricks thanks to a new technology called "non-burned caking technology", which enables densification and caking with air-drying. This product plays an important part in building a recycling-based society with zero emissions.



#### Tokyo Electric Power Environmental Engineering CO. INC.

4-6-14 Shibaura, Minato-ku, Tokyo 108-8537, Japan  
 Tel 81-3-3452-4748 Fax 81-3-3452-4617  
 E-mail [eigyou-honbu@mail.tee-kk.co.jp](mailto:eigyou-honbu@mail.tee-kk.co.jp)  
 URL <http://www.tee-kk.co.jp>

Available in : Japan

Earthen Bricks

## Eco-products

EP-7-011

Building and civil engineering

tiles

### SOIL CERAMICS: Not burn new material ,Energy-saving building products

These are blocks that are made from quarrying abolishment clay and others. These blocks are symbiosis materials which can be recycled and return to the soil after the use. Moreover, more than 50% energy-saving for cement and 80% for ceramics at production are realized because of high-pressure steam curing process with no burning. These blocks contribute to energy-saving and low environmental load. SOIL CERAMICS that keep original characteristics of natural soil, absorb atmospheric moisture and discharge it and keep the indoor humidity comfortable, and deodorize the odor and storage heat.

SOIL CERAMICS has clearly proved that the softness with gentle appearance is kind for foot and that keeps away from tiredness.

#### INAX Corporation

3-6-18 Kyobashi, Chuo-ku, Tokyo 104-0031, Japan  
 Tel 81-3-4332-5164 Fax 81-3-4332-5160  
 E-mail [inaxpr@i2.inax.co.jp](mailto:inaxpr@i2.inax.co.jp)  
 URL <http://www.inax.co.jp/>



Resource



Energy saving



SOIL CERAMICS: SOIL-300SB/12E etc

Available in : Japan

## Eco-products

EP-7-012

Building and civil engineering

tiles

### ECOCARAT:The superior healthy building materials support comfortable healthy space

"ECOCARAT" automatically controls humidity of a room where it is used by absorbing moisture in the air when it gets humid and giving off moisture when it gets dry. If also has the function of absorbing VOC that would cause sick house syndrome, providing much better environment for our health. This is the first product approved as the construction material decreasing formaldehyde concentration in the domestic industry. In addition, we have reduced energy consumption and CO<sub>2</sub> emission with the low-temperature firing and recycled glass waste and other waste material.



Resource



High quality



Energy saving



ECOCARAT: ECO-275NET/RO1 etc

#### INAX Corporation

3-6-18 Kyobashi, Chuo-ku, Tokyo 104-0031, Japan  
 Tel 81-3-4332-5164 Fax 81-3-4332-5160  
 E-mail [inaxpr@i2.inax.co.jp](mailto:inaxpr@i2.inax.co.jp)  
 URL <http://www.inax.co.jp/>

Available in : Japan

## Eco-products

EP-7-013

Building and civil engineering

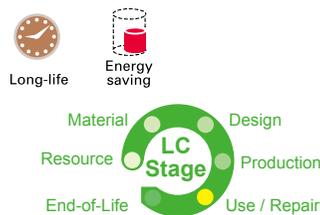
tiles

### Thermo-tile, bathroom tile with a hollow-ballon heat-insulation layer

THERMO-TILE is the floor tile for bathroom, which offers the function to suppress the chilly sense that we feel when our foot touches the floor tile. It does not need the energy of electricity or fuel gas. The principle is to form a heat-insulating layer on the surface of tiles. THERMO-TILE has a surface layer in which many hollow ballon-like small bubbles were dispersed. Such a structure lowers the thermal conductivity of tile, itself, and reduces the heat transfer rate (the value of thermal flux). Consequently, the coldness comes to be difficult to be sensed. While, the surface of THERMO-TILE has a large hydrophilicity (the property that water spreads out on the surface of material), hence its drainage is good. In addition, the micro-structure of its surface is rugged and not slippery even with wet feet. Coefficient of slip resistance for bathroom (CSR-B) is adjusted to the value usable at a large bathhouse.

#### INAX Corporation

3-6-18 Kyobashi, Chuo-ku, Tokyo 104-0031, Japan  
 Tel 81-3-4332-5164 Fax 81-3-4332-5160  
 E-mail [inaxpr@i2.inax.co.jp](mailto:inaxpr@i2.inax.co.jp)  
 URL <http://www.inax.co.jp/>



Available in : Japan

TERMO TILE : IFT-300/ML-201,ML-301

## Eco-products

EP-7-014

Building and civil engineering

tiles

### SANDROCK:Permeability ceramics building materials with recycle materials

Made by porous ceramics, high water permeability returns rain water to soil. Avoids underground drought, and lighten the input to the river.

Gives soft walking feel and absorbs heat of road surface temperature.

The large number of micro-pores lose puddles and water spatters, make hard to slip.

SANDROCK is a recycle product and uses abolished tiles, sewage grime ash destroyed by fire, etc. as production raw materials. And that is authorized as an ECO MARK PRODUCT with an environmental symbiosis function.

#### INAX Corporation

3-6-18 Kyobashi, Chuo-ku, Tokyo 104-0031, Japan  
 Tel 81-3-4332-5164 Fax 81-3-4332-5160  
 E-mail [inaxpr@i2.inax.co.jp](mailto:inaxpr@i2.inax.co.jp)  
 URL <http://www.inax.co.jp/>



Available in : Japan

SANDROCK

## Eco-products

EP-7-015

Building and civil engineering

tiles

### MICROGUARD, INAX anti-fouling technology for the external wall of housing and building

The tile that was treated with MICRO-GUARD has the function to prevent the fouling of the external wall of house and building and to maintain the beautiful appearance of the wall for a long period. MICRO-GUARD is the technology to process tiles with INAX original anti-fouling method in order to keep the landscape of city in the severe environment including air-pollution.

MICRO-GUARD enhances the surface hydrophilicity of the conventional tile. Thereby, it makes up the condition under which the surface of tile is always covered with water film which absorbs the water molecule in the air. As a result, it prevents the generation of the static electricity which attracts dust in the air. Moreover, it becomes easy for the dust on tile to flow down with the rain, because the surface of the MICRO-GUARD treated tile is familiar with water.

#### INAX Corporation

3-6-18 Kyobashi, Chuo-ku, Tokyo 104-0031, Japan  
 Tel 81-3-4332-5164 Fax 81-3-4332-5160  
 E-mail [inaxpr@i2.inax.co.jp](mailto:inaxpr@i2.inax.co.jp)  
 URL <http://www.inax.co.jp/>



Long-life



MICROGUARD STANDARD MGS-108

Available in : Japan

## Eco-products

EP-7-016

Building and civil engineering

tiles

### RE-TILE, reforming tile for "tile-lap" construction method

RE-TILE is a light tile which is used when the exterior wall of housing is reformed by the newly developed "tile-lap construction method". The feature of the construction method is to stick RE-TILES directly on the existing exterior wall. INAX developed the light tile of half-weight, while keeping the original tile's performance such as function, strength and material feeling as it is. The lightening of tiles reduced the load given to the body of construction. In the "tile-lap construction method", firstly special wire-nets are fastened on the exterior wall with screws, and then the tiles are stuck on the wire-net. Peeling off of the tiles is therefore fully prevented.

RE-TILE satisfies the severe anti-fouling INAX standard "the nano hydrophilicity", so it is hard to be stained. The fine fouling of dust, automobile exhaust gas, etc. is allowed to cleanly flow down by rainfall. Since RE-TILE is a ceramic product of mineral matter, it has a good weatherability including high-resistance to ultra-violet rays, and its color does not fade out even after the period corresponding to 40 years.

#### INAX Corporation

3-6-18 Kyobashi, Chuo-ku, Tokyo 104-0031, Japan  
 Tel 81-3-4332-5164 Fax 81-3-4332-5160  
 E-mail [inaxpr@i2.inax.co.jp](mailto:inaxpr@i2.inax.co.jp)  
 URL <http://www.inax.co.jp/>



Resource



Long-life



RE-TILE : (JR)RTL-2/DAR-4

Available in : Japan

## Eco-products

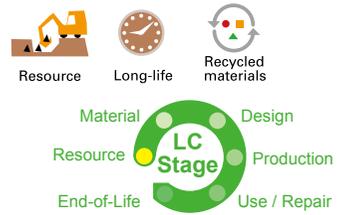
EP-7-017

Building and civil engineering

tiles

### Recycled Material Tile: wall and floor materials made from waste resources

"Recycled material tile" is the wall or floor tile that was made by use of the materials reclaimed from waste resources. INAX is making efforts to use up the various materials without emitting wastes, and the materials ranges from the waste emitted from the production line of the factory to the clay included in the drainage. The materials which are used in large quantities are "ceramic-industry waste-mad" which is recovered when digging out ceramic raw materials, "KIRA" which generates in the mining of the silica sand that is the raw material of glass, and "pottery chip" which is the crushed product of the ceramics such as tile. Besides them, various regenerated materials are being used to make housing materials. Those includes the "waste glass" which has been abolished so far, the "sewage-sludge incinerator-ash" which generates at the municipal sewage-treatment plants, the "blust-furnace slag" which is formed in the blust furnace of iron-making plant, "fly-ash" which is the dust from the boiler of power plant and trapped in the dust-collecting apparatus.



#### INAX Corporation

3-6-18 Kyobashi, Chuo-ku, Tokyo 104-0031, Japan  
 Tel 81-3-4332-5164 Fax 81-3-4332-5160  
 E-mail [inaxpr@i2.inax.co.jp](mailto:inaxpr@i2.inax.co.jp)  
 URL <http://www.inax.co.jp/>

Available in : Japan

Recycled Material Tile : IPF-150/KS-1etc

## Eco-products

EP-7-018

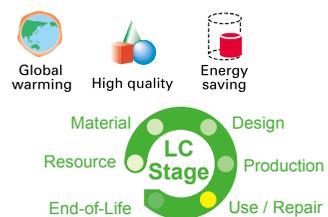
Building and civil engineering

pavement system

### Earth-cool Block Pavement System with a long-term water-holding function.

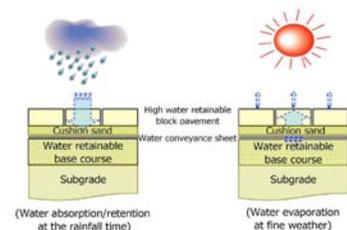
It is often said that one of the reasons for the heat island phenomenon in urban area is high surface temperature of the asphalt pavement, which reaches above 60 °C when the air temperature is 30 °C. As an anti-heat island measure, MITSUBISHI MATERIALS Corp. and TOKYOHOSO Co. developed jointly the "Earth-cool Block Pavement System" that integrates water retainable block, water conveyance sheet and water retainable base course. The system has the following features.

1. Under the weather condition in which the surface temperature of asphalt pavement is over 60 °C, "Earth-cool Block Pavement System" makes it possible to lower the temperature by 15 °C and more in comparison with the case of asphalt pavement.
2. Water retention ability is about 56 liters per 1 m<sup>2</sup>, and depression effect of road surface temperature is durable for two weeks.
3. It does not need to greatly change the conventional pavement structure, and it is applicable to the renewal of the existing pavement.



#### Mitsubishi Materials Corporation

1-5-1, Ohtemachi, Chiyoda-Ku, Tokyo 100-8117, Japan  
 Tel 81-3-5252-5331 Fax 81-3-5252-5344  
 E-mail  
 URL <http://www.mmc.co.jp/>



Available in : Japan

System outline chart

## Eco-products

EP-7-019

Building and civil engineering

light weight steelworks

### Tio system construction products

Tio is a construction system with a small environmental load specifically designed for one-story structures such as factories, warehouses, and stores. Reducing the weight of materials used in construction through building modularization and materials standardization helps save energy, while the volume of soil excavated during construction can also be reduced significantly. Consequently, the amount of CO<sub>2</sub> emitted and soil excavation can both be reduced by about 30% compared with the former products (comparison with proprietary products).



Resource High quality



#### Sumitomo Metal Industries, Ltd.

1-8-11 Harumi, Chuo-ku, Tokyo 104-6111, Japan  
Tel 81-3-4416-6183 Fax 81-3-4416-6793  
E-mail [chikyu-can@sumitomometals.co.jp](mailto:chikyu-can@sumitomometals.co.jp)  
URL <http://www.sumitomometals.co.jp/>



Available in : Japan

Warehouse using Tio system

## Eco-products

EP-7-020

Building and civil engineering

prefabricated architectural metal products

### "TOUGH GRIP" Steel fiber for concrete reinforcement

"The TOUGH GRIP" is the steel fiber which improves the strength and the durability of the concrete structure. The followings are the characteristics in the environmental aspect.

1. Each fiber of the TOUGH GRIP are pre-bound with adhesive to improve the dispersion in concrete while mixing. This saves the mixing time and energy.
2. The TOUGH GRIP can replace some of the reinforcing steel rod assembly work, shorten the construction period and save energy and steel material consumed in the construction work.
3. The TOUGH GRIP has the unique shape which enables the short fiber length. As the result, the fibers entwine less each other and it can be mixed easier in a gloss of concrete in shorter time.
4. The TOUGH GRIP can save the concrete material and enables the thinner structure.
5. The durability of the concrete is improved. As a result, the life of the concrete structure will be prolonged.
6. The TOUGH GRIP can be separated with concrete and can be used as a reproduction materials.



Resource Recyclable Long-life



#### Bridgestone Corporation

10-1, Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
Tel 81-3-5202-6871 Fax 81-3-5202-6874  
E-mail  
URL <http://www2.bridgestone-dp.jp/civil/>



TOUGH GRIP Steel fiber for concrete reinforcement

## Eco-products

EP-7-021

Building and civil engineering

prefabricated architectural metal products

### Geo-wing pile: steel tube pile

Geo-wing pile is a steel tube with low environmental load for use in the foundations of low to medium-height buildings. We have also developed Geo-wing pile II, which can be used for medium-height to tall buildings. The construction method for both products generates no waste soil as well as very little vibration or noise. It is possible to easily pull out the pile by means of reverse rotation, which substantially reduces the cost of removing foundations when buildings are demolished.



#### Sumitomo Metal Industries, Ltd.

1-8-11 Harumi, Chuo-ku, Tokyo 104-6111, Japan  
 Tel 81-3-4416-6183 Fax 81-3-4416-6793  
 E-mail [chikyu-kan@sumitomometals.co.jp](mailto:chikyu-kan@sumitomometals.co.jp)  
 URL <http://www.sumitomometals.co.jp>



Available in : Worldwide

Geo Wing Pile

## Eco-products

EP-7-022

Building and civil engineering

elevators

### Machine-Room-Less Elevator

This elevator saves spaces in the elevator shaft to allow for more flexibility in building design.

-----<< M : Material >>-----

Uses plastic made primarily from corn in a portion of the control panel.

-----<< E : Energy >>-----

Uses inverter for lighting to reduce electric power consumption by as much as 35%.

Regenerative electric power from the elevator reused to cut electric power consumption by about 20% when equipped with the optional "EL-Save".

-----<< T : Toxicity >>-----

Reduces the amount of chemical substances like toluene and xylene released in the atmosphere or ground.

The generation of chemical substances limited for the elevator as a whole to at least the levels prescribed in "sick house" related laws and regulations.

Formaldehyde density at or less than the prescribed level (0.0001g/m<sup>3</sup>).



#### Mitsubishi Electric Corporation

2-7-3, Marunouchi Chiyoda-ku, Tokyo 100-8310, Japan  
 Tel 81-3-3218-9024 Fax 81-3-3218-2465  
 E-mail [eqd.eco@pj.MitsubishiElectric.co.jp](mailto:eqd.eco@pj.MitsubishiElectric.co.jp)  
 URL <http://www.mitsubishielectric.co.jp/>



Available in : worldwide except controlled region

AXIEZ series

## Eco-products

EP-7-023

Building and civil engineering

elevators

### Machine Room-Less Elevator

Machine Room-Less Elevator realizes "Human-Friendly Environment for the Next Generation".

The operation power consumption (CO<sub>2</sub> exhaust) has decreased of 12.6% compared with model in 1994.

Density of formaldehyde in the elevator car is less than 0.08ppm.



#### Hitachi, Ltd., Urban Planning and Development Systems

4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-8010, Japan

Tel 81-3-4564-9324 Fax 81-3-4564-3882

E-mail

URL <http://www.hitachi.co.jp/Prod/elv/en/index.html>

## Eco-products

EP-7-024

Building and civil engineering

valves and cocks

### Bellows Seal Valves

These valve products are available in a wide range of materials, including malleable iron, stainless steel, cast steel and forged steel, and are suitable for a broad array of applications. Hitachi Metals' bellows seal valves prevent leaks of a various types of gases, including steam, general gas, odorous gas and corrosive gas, thereby saving energy, protecting people from hazardous substances and contributing to a better environment.



Stainless Steel Bellows Seal Valve

#### Hitachi Valve, Ltd.

200 Obuke, Asahicho, Mie-gun, Mie 510-8102, Japan

Tel 81-593-77-4711 Fax 81-593-77-2714

E-mail [yoichiroh\\_kazama@hitachi-metals.co.jp](mailto:yoichiroh_kazama@hitachi-metals.co.jp)

URL <http://www.hitachi-valve.co.jp/english/product/pr02.htm>

## Eco-products

EP-7-025

Building and civil engineering

air conditioners

### High performance, energy-saving air conditioner

To respond precisely to customer needs, a lineup of outdoor units is available with power ranging from 5 to 54 HP. Up to 64\* indoor units can be individually controlled in a single refrigerant piping system. The system also can air condition each room individually, which is ideal for the constantly changing occupancy of a typical building.

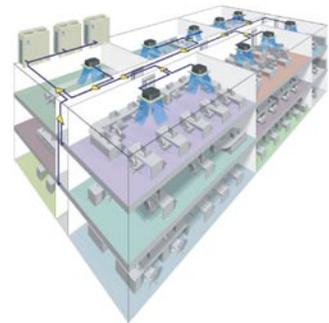
\* Using 40-54 HP outdoor unit.



Global warming



Energy saving



VRV III Series

#### DAIKIN INDUSTRIES, LTD.

Umeda Center Bldg., 2-4-12, Nakazaki-Nishi, Kita-ku, Osaka-shi,  
Osaka 530-8323, Japan  
Tel 81-6-6374-9304 Fax 81-6-6373-4380  
E-mail [kankyo@daikin.co.jp](mailto:kankyo@daikin.co.jp)  
URL <http://www.daikin.co.jp>

## Eco-products

EP-7-026

Building and civil engineering

air conditioners

### High performance, energy-saving air conditioner

A special version of the VRV III for small offices and shops Daikin have remodeled the acclaimed VRV III system aiming to provide the precise power and compactness required by small offices and shops.



Global warming



Energy saving



VRV III-S Series

#### DAIKIN INDUSTRIES, LTD.

Umeda Center Bldg., 2-4-12, Nakazaki-Nishi, Kita-ku, Osaka-shi,  
Osaka 530-8323, Japan  
Tel 81-6-6374-9304 Fax 81-6-6373-4380  
E-mail [kankyo@daikin.co.jp](mailto:kankyo@daikin.co.jp)  
URL <http://www.daikin.co.jp>

Available in : Out of Japan

## Eco-products

EP-7-027

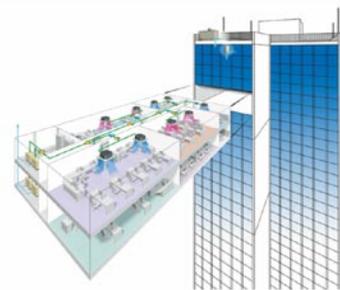
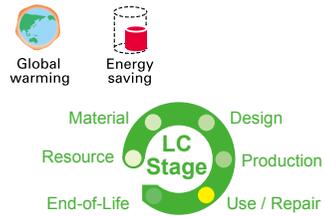
Building and civil engineering

air conditioners

### High performance, energy-saving air conditioner

A water cooled intelligent individual air conditioning system suitable for tall multistoried buildings.

Water cooled VRV II is an individual air conditioning system that utilizes water as a heat source. In this unique system, water is piped from a cooling tower or boiler to the VRV-WII (which is the equivalent of the outdoor unit of an air cooled conditioning system) and after heat exchange, refrigerant is piped from the VRV-WII to each indoor unit.



#### DAIKIN INDUSTRIES, LTD.

Umeda Center Bldg., 2-4-12, Nakazaki-Nishi, Kita-ku, Osaka-shi, Osaka 530-8323, Japan  
 Tel 81-6-6374-9304 Fax 81-6-6373-4380  
 E-mail [kankyo@daikin.co.jp](mailto:kankyo@daikin.co.jp)  
 URL <http://www.daikin.co.jp>

Available in : Out of Japan

VRV-WII

## Eco-products

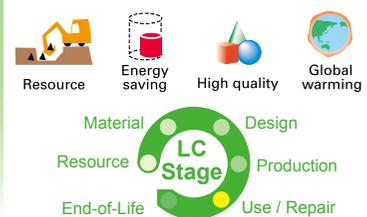
EP-7-028

Building and civil engineering

air conditioning and household equipments

### Thermal Storage Systems in Building Mass

By using our building mass thermal storage technologies and systems, you are able to reduce energy costs by 7%, CO<sub>2</sub> emissions by 10% and running costs by 15%. This is primarily achieved by shifting part of the day-time cooling/heating process to night-time, where discount utility rates apply. Based on our experimental test results, we achieved a 20% reduction in peak-time energy usage levels. Furthermore, you are able to reduce the amount of equipment needed by "splitting" the system, hence, reducing capital expenditure, maintenance costs and space required.



#### Hitachi Plant Technologies, Ltd.

5-2, Higashi-Ikebukuro 4-chome, Toshima-ku, Tokyo 170-8466, Japan  
 Tel 81-3-5928-8100 Fax 81-3-5928-8701  
 E-mail [koho-senden@hitachi-pt.com](mailto:koho-senden@hitachi-pt.com)  
 URL [www.hitachi-pt.com](http://www.hitachi-pt.com)



Thermal Storage Systems in Building Mass

## Eco-products

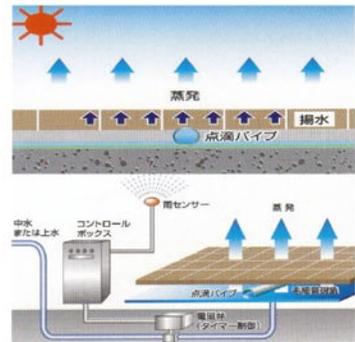
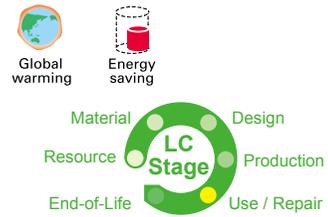
EP-7-029

Building and civil engineering

wet pavement system

### Sidewalk'Wet'pavement system to counter heat island phenomenon

The "wet pavement" system (water sprinkling road system), can reduce summer daytime temperature of road surfaces by approximately 25 degree Celsius lower than asphalt pavement. The wet pavement surface reduces sunlight reflection, relieving both heat and glare. A dripping water supply pipe provides a continuous cooling effect even if fine weather continues for several days. Water quantity required is 5-6  $l/m^2$  for a typical fine day in summer.



Wet Pavement System (Uchimizu-Pave)

#### Obayashi Corporation , Technical Research Institute

640, Shimokiyoto 4-chome, Kiyose-shi, Tokyo 204-8558, Japan  
 Tel 81-42-495-1044 Fax 81-42-495-1260  
 E-mail komiya.hidetaka@obayashi.co.jp  
 URL <http://www.obayashi.co.jp/>

## Eco-products

EP-7-030

Building and civil engineering

silt barrier

### Silt Barrier

The "Silt Barrier" is the floating boom with net to stop the diffusion of mud to keep the environmental water clean out of the marine construction area.

The portable type has the foam blocks inside and most widely used. The sink-and float type is the fixed type moored around the certain area and floats only when it is necessary. The self-stand type is fixed at the bottom of the water and stands up to stop the bottom diffusion.



#### Bridgestone Corporation

10-1, Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
 Tel 81-3-5202-6871 Fax 81-3-5202-6874  
 E-mail  
 URL <http://www2.bridgestone-dp.jp/civil/>

Silt Barrier

## Eco-products

EP-7-031

Building and civil engineering

building automation system

### Energy Saving Technology by Location Information of Wireless Phones in Buildings

We developed local positioning technology and its application system using internal wireless phones.

This system can detect human location in buildings and improves energy conservation. These location data are used for controlling lightings and air-conditioning equipment.

Location server obtains information of the base station each phone connects to, calculates the number of people in each area, and sends data to the building automation system.

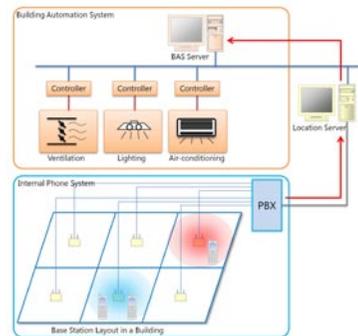
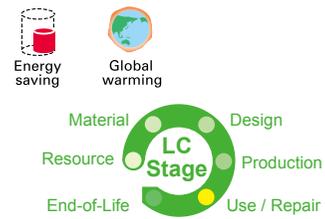
Air ventilation control, based on the number of people, enables 10% of energy saving compared to standard buildings.

Infrared sensors or CO<sub>2</sub> sensors are required for the same control in general case. However, this system uses internal phone infrastructure as sensors, and can be installed at a low cost.

#### SHIMIZU CORPORATION

SEAVANS SOUTH No.2-3, Shibaura 1-chome, Minato-ku, Tokyo 105-8007, Japan  
 Tel 81-3-5441-1111 Fax  
 E-mail  
 URL <http://www.shimz.co.jp/>

Available in : JAPAN



System Configuration

## Eco-products

EP-7-032

Building and civil engineering

bamboo flooring

### Eco-Friendly 100% Solid Bamboo Hardwood Flooring

Star Bamboo (S) Pte Ltd is an award-winning manufacturer and distributor of eco-friendly bamboo flooring from Singapore.

Bamboo is one of the world's most renewable and strongest natural resources, and an ideal alternative to wood.

Bamboo is ready for harvesting in 4 to 6 years, while trees take 20 to 80 years to mature. There is also no need to replant bamboo as it grows out from its own shoots, in direct contrast with forests which require expensive and time-consuming reforestation efforts.

We only use mature bamboo harvested from government-certified forests.

Our eco-flooring is made of 100% solid bamboo using European technology and comes prefinished with German scratch-resistant polyurethane coating.

The products exceed the strictest international E0 standard for formaldehyde emissions, ensuring a healthy environment for our customers.

Our fully-owned manufacturing plant obtained international environmental standard ISO14001 certification in December 2006.

#### Star Bamboo (S) Pte Ltd

2 Jurong East St 21, #02-143 IMM Building 609601, Singapore  
 Tel 65-6565-9217 Fax 65-6565-0508  
 E-mail [info@starbamboo.com](mailto:info@starbamboo.com)  
 URL <http://www.starbamboo.com>

Available in : Europe, Asia, Australia



Solid Bamboo Flooring

## Eco-products

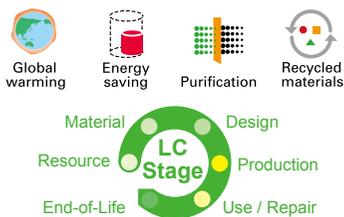
EP-7-033

Building and civil engineering

green roof

### ZinCo Green Roof Systems

The green roof systems conceives high recycled content of exceeding 60% through re-engineering construction wastes such as clay bricks and roof tiles, fibres from the textile industry and plastics from the consumer industries.



#### ZINCO SINGAPORE PTE LTD

19, Keppel Road, Unit 07-01, Jit Poh Building 08958, Singapore  
 Tel 65-6396-7220 Fax 65-6396-8592  
 E-mail [admin@zinco.com.sg](mailto:admin@zinco.com.sg)  
 URL <http://www.zinco.de>



Available in : Worldwide

## Eco-products

EP-7-034

Building and civil engineering

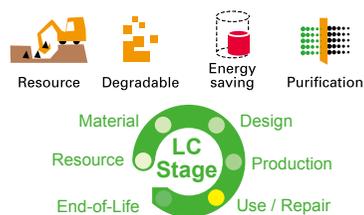
solar control films / safety & security films

### Spectrally Selective Solar Control Films / Safety & Security Films

Engineered by V-KOOL, IQue offers an extensive range of applied films for the architectural market. Combining high performance solar control with high visible light transmission, IQue architectural films can reject as high as over 98% of infra-red rays responsible for heat build-up while letting in over 73% of visible light. 60% of the total solar energy is prevented from entering the interior, thereby reducing air-conditioning loads and achieving significant savings in energy bills. Visible clarity also means that daylight can be "harvested", reducing artificial lighting requirements in buildings significantly.

IQue also offers Safety & Security films which are easily applied onto any existing glass surface to hold broken glass shards in the event of breakage. It holds broken glass in place greatly reducing the likelihood of glass being propelled at high speeds into interior areas.

Results from the Bomb Blast Mitigation Test have demonstrated the effectiveness of IQue Safety & Security films in mitigating glass fragment hazards when subjected to blast loads. Our films have met the stringent US General Services Administration (GSA) testing requirements.



#### V-KOOL (S) Pte Ltd

12 Jalan Kilang Barat, #01-01 Globamatrix Building 159354, Singapore  
 Tel 65-6276-6282 Fax 65-6276-7271  
 E-mail [info@v-kool.com.sg](mailto:info@v-kool.com.sg)  
 URL <http://www.v-kool.com.sg>



Available in : Worldwide

## Eco-products

EP-7-035

Building and civil engineering

insulating panel for residential houses

### Energy/resource-saving oriented insulating panel

The insulating panel not only contributes to energy-saving through load reduction of air-conditioners at residential houses, but also promotes high durability of the houses through its earthquake-proof panel structure. Its insulation materials deploy "non-CFC forming polyurethane", which uses carbonic acid gas with ozone layer depletion coefficient 0 and global warming coefficient 1. In consideration of measures against sick house, the materials also use OSB(oriental stand board) with F four stars(F [four stars] ) grade which emits least formaldehyde. The product is selected as one of the products with our own "Type II Eco-Label", based on our internal standard.

#### TOSTEM CORPORATION

1-1, Ojima 2-chome, Koto-ku, Tokyo 136-8535, Japan  
 Tel 81-3-3638-8187 Fax 81-3-3638-8254  
 E-mail  
 URL <http://www.tostem.co.jp>



## Eco-products

EP-7-036

Building and civil engineering

continuous subterranean diaphragm wall members

### Continuous subterranean diaphragm wall members for

Nippon Steel's NS-BOX (continuous subterranean diaphragm wall members) for the walls of urban subterranean structures reduces the generation of waste soil by reducing wall thickness. It also shortens the construction period by eliminating the need for concrete reinforcing bars, reduces the space required at construction sites, and eases traffic congestion in urban areas.



#### Nippon Steel Corporation

2-6-3, Otemachi, Chiyoda-ku, Tokyo, Japan  
 Tel 81-3-3275-5144 Fax 81-3-3275-5979  
 E-mail [kankyo@nsc.co.jp](mailto:kankyo@nsc.co.jp)  
 URL <http://www0.nsc.co.jp/kankyou/index.html>

## Eco-products

EP-7-037

Building and civil engineering

rainwater storage

### Rainwater storage/Infiltration & re-use system

To solve this environmental problem which is floods or a shortage of water or global warming, our system (CrossWave, RainStation) is useful. Our system stored rainwater underground is able to control flow volume into sewers and rivers and to reuse the rainwater.

- Saving water (Global Warming, Energy Saving) To reuse the stored rainwater vastly decrease the consumption of reticulated fresh water. For example, if a 1,000m<sup>3</sup> rainwater storage tank is set up in a shopping center used by 5,000 people a day, and collected rainwater is used to flush the toilets, the amount of reticulated water used decrease its 45%. And energy saving by load reduction of water purification plant is enabled. In addition, it can be lower temperature of the ground by sprinkling.
- Prevent a flood Our system stored rainwater underground to control flow the rainwater out.
- Excellent durability (Longevity, Recyclability) The material has an excellent durability, and is thus suitable for long-term use. The materials are recyclable. In addition, a RainStation automatically collects contaminants such as sand through its water-flow control structure.

#### Sekisui Chemical Co., Ltd.

2-3-17, Toranomon, Minato-ku, Tokyo, Japan  
 Tel Fax  
 E-mail [kankyo@sekisui.jp](mailto:kankyo@sekisui.jp)  
 URL <http://www.sekisui.co.jp/>



above: "Cross Wave" below: "Rain Station"

## Eco-products

EP-7-038

Building and civil engineering

residential house

### Zero-utility-cost Houses

Combination of the above mentioned technologies can realize zero utility cost. While utility cost/year at an ordinary residential house amounts to 226,000 yen, that at highly heat insulated house adopting highly effective hot water unit, all electrification and mounting the photovoltaic generation system of 5.5 kW capacity amounts to minus 1,000 yen.

Annual CO<sub>2</sub> emission as environmental value can be reduced to 580 kg from 3090 kg of an ordinary residential house.

Evaluating by life cycle cost, the initial costs increase by approximately 2.6 million yen in total in order to equip the house with these systems, but considering the increased costs to be depreciated by the reduction of the utility charges, they can be repaid by approximately 13 years, which may be able to be proposed to possible users as economical advantages.

This house is becoming an important housing model, leading to the expansion of renewable energy and to the reduction of CO<sub>2</sub> emissions in Japan.

#### Sekisui Chemical Co., Ltd.

2-3-17, Toranomon, Minato-ku, Tokyo, Japan  
 Tel Fax  
 E-mail [kankyo@sekisui.jp](mailto:kankyo@sekisui.jp)  
 URL <http://www.sekisui.co.jp/>



## Eco-products

EP-7-039

Building and civil engineering

architectures

### Japan Aerospace Exploration Agency Tsukuba Space Center Headquarters Building

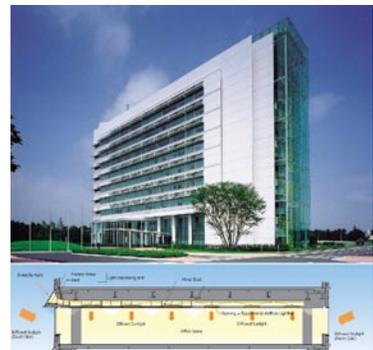
The Mirror duct system captures light from on the outside walls or the roof, then reflects it along the highly reflective, mirrored inner surfaces of the ducts to places where light is needed in the interior. Mirror ducting is a long-lasting system, requiring almost no energy or maintenance after installation as it carries on bringing in light through the lifespan of the building. In terms of lifecycle CO<sub>2</sub>, the CO<sub>2</sub> equivalent of the initial installation is recouped in around five years through reduced electricity consumption, after which, it continues to deliver substantial effects in reducing CO<sub>2</sub> emissions for the lifespan of the building without significant further cost. In an office building, light collected on the south side can be conveyed to the north side through the ducts and released into rooms along the way through diffusers. Light fixtures are placed below the diffusers, so light released to the interior is a blend of natural light and automatically regulated artificial light, maintaining a uniform level of light at all times.



Global warming



Energy saving



Guiding natural light into the interior

#### NIKKEN SEKKEI LTD

2-18-3 Iidabashi, Chiyoda-ku, Tokyo 102-8117, Japan  
 Tel 81-3-5226-3030 Fax 81-3-5226-3038  
 E-mail [webmaster@nikken.co.jp](mailto:webmaster@nikken.co.jp)  
 URL <http://www.nikken.co.jp>

Available in : Worldwide

## Eco-products

EP-7-040

Building and civil engineering

architectures

### NEC Tamagawa Renaissance City

This office is designed so that it has high earthquake performance and adequate capacity of building facilities for IT environment as well as comfortable indoor environment. From the planning and conceptual design stage, our way of thinking is based on “the environment management cycle”. The concrete targets for the environment countermeasure was set up and practiced through the life cycle of design, building, management, renovation and disposal. Taking the phrase “the thing we can do for the global environment” as a keyword, we are promoting the construction of ecology building, which contributes to maintenance and preservation of the global environment.



Global warming



Resource



Recyclable



Energy saving



#### NIKKEN SEKKEI LTD

2-18-3 Iidabashi, Chiyoda-ku, Tokyo 102-8117, Japan  
 Tel 81-3-5226-3030 Fax 81-3-5226-3038  
 E-mail [webmaster@nikken.co.jp](mailto:webmaster@nikken.co.jp)  
 URL <http://www.nikken.co.jp>

Available in : Worldwide

An ecological super high-rise building that is considerate of global environment

## Eco-products

EP-7-041

Building and civil engineering

architectures

### Epson Innovation Center Sustainable

This is the research facilities to develop the information related equipment of the next generation. The buildings are the architecture of the "symbiosis with environment", in which the characteristic of the nature at a 700m altitude has been utilized. The feature is the atrium space that prompts the communication and collaboration of the researchers. The buildings consist of 2 blocks: "C-Cube" block is used for the collaboration with the outside, and "A" block is the innovation center for the fusion of researchers. Enlargement is possible across the "C-Cube" block. As for the inside, the amenity was raised by woody decoration and by mild light from the top. We tried further development of the known energy-saving technique. We added automatic tracking mechanism of the sun light to the light receiving part of glass duct, which works as floor warmer by aspirating the warm air in the upper space of atrium. With the aim of 60% CO<sub>2</sub> reduction, one hundred technological items to reduce the environment load were incorporated. This center is the research base in which the company's philosophy to the environment conservation has realized.

#### NIKKEN SEKKEI LTD

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 E-mail [webmaster@nikken.co.jp](mailto:webmaster@nikken.co.jp)  
 URL <http://www.nikken.co.jp>

Available in : Worldwide



Sustainable Architecture using natural resources

## Eco-products

EP-7-042

Building and civil engineering

architectures

### TOYOTA Motors Main building

We proposed the "façade" which warmly welcomes domestic and foreign guests. It will become a new face of Toyota. Our concept was placed on (1) the full equipment with earthquake proofing ping, disaster prevention, security, and crisis control, (2) the device of work space to enhance the efficiency and the productivity of office work, and (3) the realization of the environment performance of world's top level, because the building is the headquarter of the global company that conducts a pioneering work for the environment consideration. We offered "Vertical Village" for the "KAIZEN" (improvement) of work space. We placed the inside stairs and stairwell between the elevator and the office, and aimed to improve the productivity by the activation of communication. The advanced technologies of reducing the environment load were introduced: a hi-tech curtain wall consisting of horizontal/vertical louver; a full-scale floor ventilation system with the breathing carpet; a light duct system of domestic largest scale, etc. We expressed these advanced technologies as the environment design which harmonizes with the architecture.

#### NIKKEN SEKKEI LTD

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 URL <http://www.nikken.co.jp>

Available in : Worldwide



Collaboration of Design & Environmental Engineering



## Eco-products

EP-7-045

Building and civil engineering

architectures

### Kansai Electric Power Headquarters

The building integrating Kansai Electric Power's headquarters function. The building was constructed as part of "The Joint development project of Nakanoshima 3-chome" by DAIBIRU Corporation, Kansai Electric Power Co., Inc., and Kanden-fudosan Co.,Ltd. Under the consideration of one of the concepts laid as "Model building for environmental symbiosis". The following functions are realized. For the aspect of the surrounding of the window, the construction frame such as pillar or beam keeps approximate 1.8 m apart from the window surface, together with revealing the facade's shades, while the building ensures natural daylight through the big windows, and sun protection by the eaves. And, natural ventilation resulting from making eaves' sky is introduced, and the space for solar system is installed. Besides, the technologies for the environmental symbiosis including task-ambient air conditioning system, and thermal storage for the building, etc are introduced. For the office zone at its high-rise part, communication for the up and down floor can be better activated through integrating three floors called as "communication well" into one space by the stairwell.



Model building for environmental symbiosis

#### NIKKEN SEKKEI LTD

2-18-3 lidabashi, Chiyoda-ku, Tokyo 102-8117, Japan  
 Tel 81-3-5226-3030 Fax 81-3-5226-3038  
 E-mail [webmaster@nikken.co.jp](mailto:webmaster@nikken.co.jp)  
 URL <http://www.nikken.co.jp>

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## Eco-products

EP-7-046

Building and civil engineering

architectures

### Tokatsu Techno Plaza

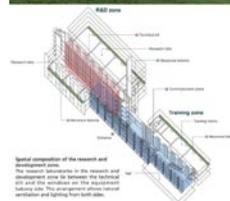
This research facility aims to bring together industry, academia and government in an effort to nurture the next generation of regional industries. It is a comprehensive center for technological exchange providing venture companies with three functions: technological development, training and exchange. We use a wide variety of techniques as we work to create buildings for the next generation. The main themes of this building are reduction of energy usage so that the building will be used through a long lifespan in harmony with the environment, and advanced flexibility to make sure the building can adapt swiftly to rapidly changing research work. Three elements are used to provide natural ventilation/ lighting for themselves and the research laboratories, and to naturally light the laboratories from both sides:



- 1) The glass double skin that forms the south wall of the communication Plaza in the three-story atrium over the entrance.
- 2) The central shaft space (technical slit) which is surrounded by glass and serves as a path for light and air through the center of the laboratories.
- 3) The central emergency exit staircase (communication steps), which is surrounded by transparent walls.

#### NIKKEN SEKKEI LTD

2-18-3 lidabashi, Chiyoda-ku, Tokyo 102-8117, Japan  
 Tel 81-3-5226-3030 Fax 81-3-5226-3038  
 E-mail [webmaster@nikken.co.jp](mailto:webmaster@nikken.co.jp)  
 URL <http://www.nikken.co.jp>



Available in : Worldwide

Creating a sustainable building

## Eco-products

EP-7-047

Building and civil engineering

architectures

### TOKYO GAS "Earth Port"

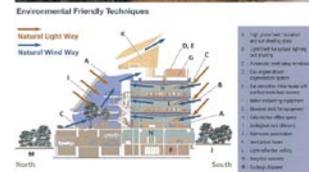
This building is aimed at being the Life-cycle Energy-saving Office. It was built on the concentration of the techniques of building, environment and facilities. The issue of building was to pursue the compatibility of the comfortable environment with the energy saving through the life cycles of the materials, while making the best use of natural energy.

The core space of building which had been traditionally closed was reexamined and "the ecological core" which works as a vertical path of light and wind was offered. Namely, corridor, elevator and staircase were connected with the showroom, and they were made to develop as atrium space which connects the each floor. Both sides lighting of the office and the maximum use of natural energy by natural ventilation are being attempted. The effective use of energy and resources is thoroughly being pursued: the use of heat-insulating material that has performance most suitable to the part of building; the active use of regenerated material; the use of rain water, etc.

#### NIKKEN SEKKEI LTD

2-18-3 lidabashi, Chiyoda-ku, Tokyo 102-8117, Japan  
 Tel 81-3-5226-3030 Fax 81-3-5226-3038  
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Life-cycle energy-saving architecture

## Eco-products

EP-7-048

Building and civil engineering

architectures

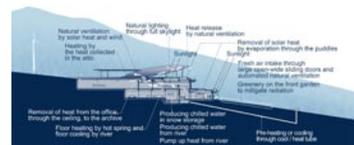
### K-Nasu Project

It is a plan to build the main office of a certain company on the site 800m above sea level which is located on the hillside of Nasu Highland in the Nikko National Park. The attraction of this location is, after all, in the splendid scenery and the refreshing air of the plateau. In order to make the space where the work is possible while enjoying this blessed natural environment, we placed a large opening from which the marvelous prospect is obtained. From the natural ventilation device, refreshing wind of Nasu highland moves in, and from the top light, mild natural light pours into the room. And, to realize zero-carbon office, in addition to the natural ventilation and lighting, various natural energies such as solar cell, solar heat collector, wind turbine, geothermal energy, hot spring and snow are used.

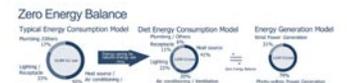
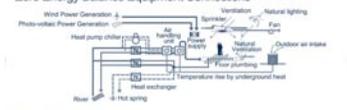
#### NIKKEN SEKKEI LTD

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 URL <http://www.nikken.co.jp>

Available in : Worldwide



Zero Energy Balance Equipment Connections



Zero Carbon Building

## Eco-products

EP-7-049

Building and civil engineering

modular floating system

### EcoFloat Modular Floating System

EcoFloat Modular Floating System is a revolutionary highly modular floating system with excellent features. It is cost effective and environmental friendly, suitable for any leisure activities, waterfront property, aquatic sports, military and engineering projects on the water.

#### The benefits of EcoFloat:

- Easy to install, no extensive construction work needed
- Low cost
- Environmental Friendly
- Versatile, can be reconfigure to any size or shape that suit different type of applications
- Minimum maintenance

#### The Features:

- High load capacity with 350 kg/m<sup>2</sup>
- Durable built material - High Density Polyethylene (HDPE) that resistant to UV rays, seawater, corrosion, chemical and oil
- Non-slippery surface and sharp edges
- Comes in modular built that aid easy installation - like piecing the "Lego" bricks

#### GRENZONE PTE LTD

51 Ayer Rajah Crescent, #06-16/17 139948, Singapore  
 Tel 65-6872-2350 Fax 65-6872-5610  
 E-mail [info@grenzone.com](mailto:info@grenzone.com)  
 URL <http://www.grenzone.com>



Available in : Worldwide

EcoFloat Modular Floating System

## Eco-products

EP-7-050

Building and civil engineering

ceramic insulation coating

### COOL THERM / Ceramic Insulation Coating

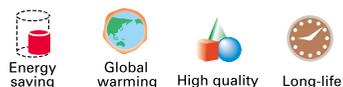
COOL THERM is a coating born in the ceramic development for NASA's space shuttle, and it is nonflammable and non-toxic properties are tested and proved by NASA. These four types of special ceramics developed by NASA line up in coating, and reflect / radiate a wide range of heat waves including infrared rays. This is the mechanism of COOL THERM's effect.

COOL THERM prevents heat being generated on the surface of coating, the air-conditioning load of the building and the house decreases, and it can greatly cut down the electric power of the air conditioner.

COOL THERM is tough in the salt damage, the life cycle of coating is very long, and insulated power is kept for ten years or more. Therefore, COOL THERM is often used as coating of the oil tank of petrochemical complex and the ship, etc. The administrative and maintenance are not necessary for COOL THERM. The product of the energy saving with unnecessary running cost is only ceramic insulated coating. It's COOL THERM.

#### Ebara Agency Co., Ltd.

11-1, Haneda Asahi-cho, Ohta-ku, Tokyo 144-8510, Japan  
 Tel 81-3-3743-7130 Fax 81-3-3743-7131  
 E-mail [webmaster@ebara.com](mailto:webmaster@ebara.com)  
 URL <http://www.ebara.co.jp>



COOL THERM of EBARA's Factory

## Eco-products

EP-7-051

Building and civil engineering

green roof system

### PEG System - Your Portable Greening Solution

Prefabricated Extensive Green Roof System (PEG) is an innovative lightweight modular green roof tray system manufactured using thermal plastic which can be recycled. It has a built-in reservoir that retains rainwater to sustain plant growth. PEG system allows instant greening for extensive roof garden and is suitable for most new and existing buildings

The benefits of the PEG System are;

- Allows owners to dismantle and move PEG to a new place with ease
- Designer can rearrange PEG trays to achieve different aesthetic look
- Enables a neat and quick installation process on site
- Stores water to sustain the plant growth
- Improves energy efficiency and softens the urban landscape
- High durability and low maintenance
- Reduces surface temperature

#### United Premas Limited

Block 750 Oasis, Chai Chee Road Technopark @ Chai Chee #01-01,  
469000 Singapore  
Tel 65-6876-0088 Fax 65-6538-8146  
E-mail corporatemarketing@unitedpremas.com  
URL www.uglpremas.com

Available in : Singapore



## Eco-products

EP-7-052

Building and civil engineering

landscaping materials

### Garden landscaping products

SECOIN garden landscaping concrete products are produced under "non-burnt" technology, which helps saving agricultural land and does not use fuel for burning. In addition, the curing (drying) process is done in room-temperature without heating. These products are made to replicate the natural materials such as natural stone, natural trees/ wood and clay burnt bricks. They are, therefore, very close to the nature, environmental friendly and energy-saving.

#### SECOIN Co., Ltd.

59 Hang Chuoi Str., Hai Ba Trung Dist., Hanoi, 10000 Vietnam  
Tel 84-4-9718899 Fax 84-4-9718898  
E-mail sales@secoin.vn  
URL www.secointile.com



Available in : Vietnam, Japan, Australia

Secoin garden paver creates a warm atmosphere for outdoor living space

## Eco-products

EP-8-001

Machines and equipment

conveyor rubber belts

### Energy-saving belt "BEATRON"

In the operation of the conveyor belt, the energy consumption grows by the roll over resistance generated when the belt passes on the roller. Energy-saving belt "BEATRON" can decrease the roll over resistance by uniting the optimization design of the rubber viscoelasticity and the HELLO theory (the theory of optimized belt design). As a result, about 30% and more energy-saving has been verified when applying to an actual long distance conveyor line.



#### Bridgestone Corporation

10-1, Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
 Tel 81-3-5202-6851 Fax 81-3-5202-6854  
 E-mail  
 URL <http://www.bridgestone.co.jp/>



Energy-saving belt "BEATRON"

## Eco-products

EP-8-002

Machines and equipment

rubber hoses

### Hydrogen dispenser hose

Under the fuel cell system is in the limelight as next generation's ultimate energy, improving the infrastructure of the hydrogen that is an energy of the fuel cell is an problem. Bridgestone apply the conventional technique of high-pressure hose (Primoline), and developed 70MPa hydrogen dispenser hose (over 280MPa breakdown pressure). So we make a contribution to improve the infrastructure of the hydrogen.



#### Bridgestone Corporation

10-1, Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
 Tel 81-3-5202-6706 Fax 81-3-5202-6718  
 E-mail  
 URL <http://www.bridgestone.co.jp/english/index.html>



Hydrogen dispenser hose

## Eco-products

EP-8-003

Machines and equipment

air conditioners

### UTOPIA IXV DC INVERTER Packaged Air Conditioner

"UTOPIA IXV DC INVERTER" won the "Minister of Economy, Trade and Industry Award"; the first prize of the Energy Conservation Awards in Japan, for its high energy-saving performance.

By realizing independent operation - the first in the industry, COP is increased 143% ; 4.24(8HP) and 3.85(10HP). These advanced technologies decreased 50% power consumption.

The mass of material used has been successfully reduced due to product downsizing. (Installation space is 40%, Net weight is 25% downsized), which has improved installation flexibility and resource consumption. Iron is reduced by 37%, while Aluminum by 50%. 27% of power consumption has been reduced during production.

HFC refrigerant (R410A) with zero ozone depletion potential has reduced amount of charging by 26% when shipping and by 47% when charging for long piping(100m).

We still continue to strive for further environmental protection.

#### Hitachi Appliances, Inc.

Hitachi Atago Bldg., 15-12, Nishi shimbashi 2-chome, Minato-ku, Tokyo 105-8410, Japan  
Tel 81-3-3502-2111 Fax  
E-mail  
URL <http://www.hitachi-ap.co.jp/>



UTOPIA IXV DC INVERTER OUTDOOR UNIT

## Eco-products

EP-8-004

Machines and equipment

air conditioners

### Gas engine heat pump air conditioner equipped with power generator

High-Power EXCEL is a revolutionary system realizing simultaneous air conditioning and power generation. A compressor driven by a gas engine provides space heating/cooling and a generator is capable of generating 2.3 - 4kW electricity utilizing surplus energy of gas engine.

The electricity generated is supplied to the pump of air conditioner and also the building in which High-Power EXCEL is installed.

With its high energy-saving features, this system contributes to cutting electricity consumption in the peak hours of electricity demand.

#### Osaka Gas Co., Ltd.

4-1-2, Hiranomachi, Chuo-ku, Osaka-shi, Osaka 541-0046, Japan  
Tel 81-6-6205-6455 Fax 81-6-6202-6455  
E-mail  
URL <http://www.osakagas.co.jp>



## Eco-products

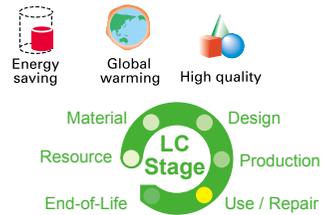
EP-8-005

Machines and equipment

air conditioners

### Clathrate Hydrate Slurry (CHS) Heat Storage Air-conditioning System

Using clathrate hydrate slurry instead of water, the Clathrate Hydrate Slurry (CHS) Heat Storage Airconditioning System is a cooling system with excellent energy saving effects. This system substantially reduces power consumption and thereby contributes to global warming prevention. The Kawasaki shopping mall "Azalea" is one of our major clients who have adopted this system. The new air-conditioning system has been awarded the Prime Minister Prize of the 35th Japan Industrial Technology Grand Prix.



#### JFE Engineering Corporation

1-5-1, Marunouchi, Chiyoda-ku, Tokyo 100-6527, Japan  
Tel Fax  
E-mail  
URL <http://www.jfe-eng.co.jp/>



Available in :

## Eco-products

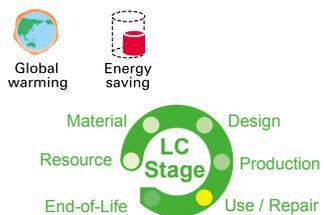
EP-8-006

Machines and equipment

air conditioners

### High performance, energy-saving air conditioner

Daikin's SUPER MULTI NX with DC inverter offers energy savings, quiet operation, and a wide range of models to provide you with maximum comfort while respecting homes and people. Furthermore, the wall-mounted type D series won the prestigious Good Design Award in Japan.



#### DAIKIN INDUSTRIES, LTD.

Umeda Center Bldg., 2-4-12, Nakazaki-Nishi, Kita-ku, Osaka-shi, Osaka 530-8323, Japan  
Tel 81-6-6374-9304 Fax 81-6-6373-4380  
E-mail [kankyo@daikin.co.jp](mailto:kankyo@daikin.co.jp)  
URL <http://www.daikin.co.jp>



Available in : Out of Japan

SUPER MULTI NX

## Eco-products

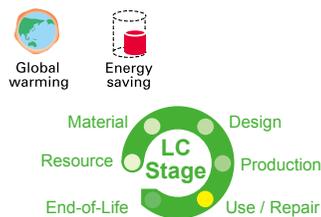
EP-8-007

Machines and equipment

air conditioners

### High performance, energy-saving air conditioner

Daikin's Super Multi Plus D and E series is now connectable to up to 8 indoor units and offers you a richer choice of indoor units to coordinate with each room d°cor. Advanced technology from Daikin has improved COP and reduced sound levels to suit today's modern living environment.



SUPER MULTI PLUS

#### DAIKIN INDUSTRIES, LTD.

Umeda Center Bldg., 2-4-12, Nakazaki-Nishi, Kita-ku, Osaka-shi,  
Osaka 530-8323, Japan  
Tel 81-6-6374-9304 Fax 81-6-6373-4380  
E-mail [kankyo@daikin.co.jp](mailto:kankyo@daikin.co.jp)  
URL <http://www.daikin.co.jp>

Available in : Out of Japan

## Eco-products

EP-8-008

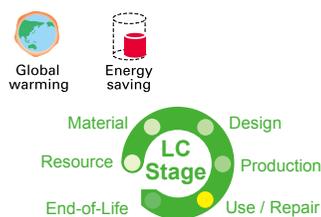
Machines and equipment

air conditioners

### High performance, energy-saving air conditioner

Daikin's SkyAir Inverter series have launched new line up achieving High COP. The outdoor unit is equipped with Reluctance DC scroll compressor, Aero Spiral Fan, DC Fan Motors and Super Aero Grille as the latest energy saving technologies.

The ceiling mounted cassette type (Round Flow) indoor unit which delivers 360 degree of the angle airflow brings out uniform temperature distribution and a comfortable living environment even if the setting temperature is raised by 1 degree C in cooling.



SkyAir Inverter series

#### DAIKIN INDUSTRIES, LTD.

Umeda Center Bldg., 2-4-12, Nakazaki-Nishi, Kita-ku, Osaka-shi,  
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E-mail [kankyo@daikin.co.jp](mailto:kankyo@daikin.co.jp)  
URL <http://www.daikin.co.jp>

Available in :

## Eco-products

EP-8-009

Machines and equipment

retail facility and office air conditioner

### Air-conditioner for retail facility and Office with the industry's highest energy-saving performance

The product is a retail facility and office-use air-conditioner having the industry's best energy-saving performance, which was further improved.

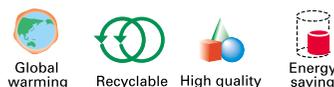
As for the indoor unit (four way cassette type), a self-cleaning function which can suppress the generation of mold and germs was installed for the first time in the air-conditioner industry. The dirt which stuck to the heat exchanger is washed down by the condensed dew water, and the wet heat exchanger becomes dry when ventilated.

Outdoor machine-unit adopted a DC twin rotary compressor, the thrust load of which was decreased by a newly-developed magnetic buoyancy device. The energy saving performance was improved particularly in the load range from low to middle.

- **Energy Saving:** Annual power consumption was reduced by 58% compared to that before 10 years (by our company's constant speed machine). Annual CO<sub>2</sub> discharge was reduced by 1.2 ton compared to that before 10 years (ibid). APF (Annual Power-consumption Efficiency) of 6.0 has been achieved for 11.2kW capacity model.

#### Toshiba Carrier Corporation

3-23-17 Takanawa, Minato-ku, Tokyo 108-007, Japan  
Tel Fax  
E-mail  
URL <http://www.toshiba-carrier.co.jp/>



Super Power Eco<sup>3</sup>(cube),AIU-AP1405H (Indoor Unit),ROA-AP1405HS (Outdoor Unit)

## Eco-products

EP-8-010

Machines and equipment

room dryer

### Bathroom ventilation dryer for drying the clothing with reduced power consumption

Since the revised Building Standard Act that considered the sick-house syndrome was executed, July, 2003, the role of ventilation system varied from the local ventilation to the ventilation of the whole house. The carrier group in Toshiba developed the bathroom ventilation drier, "Bath Dry" which can dry not only bathroom, but also plural rooms.

It has mounted "the eco-drying mode", which holds the supplying time of electricity to the heater minimum at the time of drying the clothing. This is controlled by changing the temperature of the air sent to the bathroom. The amount of the used electricity was reduced to 1/3 in comparison with that in the standard drying mode.

#### Toshiba Carrier Corporation

3-23-17 Takanawa, Minato-ku, Tokyo 108-007, Japan  
Tel 81-3-6409-1735 Fax 81-3-5447-8388  
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URL <http://www.toshiba-carrier.co.jp/>



DVB-18STD

## Eco-products

EP-8-011

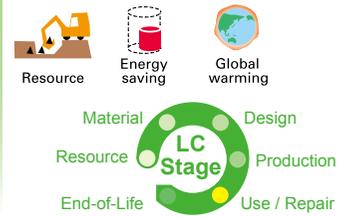
Machines and equipment

air conditioning and household equipments

### OH Saver® (Optimized HVAC Control Systems for Energy Saving)

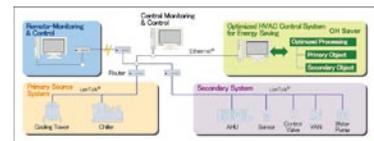
During the design stage, total system parameters are simulated to obtain optimum energy efficiency, e.g., 20% reduction in energy consumption was achieved.

Our enhanced software improves the efficiency of the Primary Source System and the Secondary System and applicable to various types of existing HVAC components



#### Hitachi Plant Technologies, Ltd.

5-2, Higashi-Ikebukuro 4-chome, Toshima-ku, Tokyo 170-8466, Japan  
 Tel 81-3-5928-8100 Fax 81-3-5928-8701  
 E-mail [koho-senden@hitachi-pt.com](mailto:koho-senden@hitachi-pt.com)  
 URL <http://www.hitachi-pt.com>



System configuration

## Eco-products

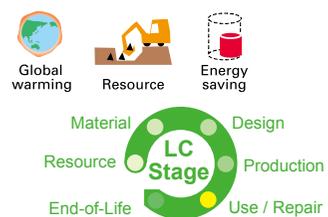
EP-8-012

Machines and equipment

freezing/refrigerating/air-conditioning system

### Freezing/refrigerating/air-conditioning system

This system achieves an energy reduction for convenience stores by integrating the freezer and refrigeration showcases with an air-conditioning system. It achieves a 50% reduction in annual energy consumption compared with existing systems by using exhausted heat from freezing, refrigerating, and air-conditioning into one system provides resource-savings.



#### DAIKIN INDUSTRIES, LTD.

Umeda Center Bldg., 2-4-12, Nakazaki-Nishi, Kita-ku, Osaka-shi, Osaka 530-8323, Japan  
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 E-mail [kankyo@daikin.co.jp](mailto:kankyo@daikin.co.jp)  
 URL <http://www.daikin.co.jp>



CONVENI-PACK

## Eco-products

EP-8-013

Machines and equipment

chiller

### Adsorption Chiller making a cold water at a low cost

This is a chemical refrigeration compressor using one of the NWFs, H<sub>2</sub>O and adsorbent. It can produce chilled water from the low grade heat source of less than 75 degrees Celsius. Main body does not require electricity. In addition, the maintenance cost is nearly negligible.



#### Mayekawa Mfg.Co.,Ltd.

2-13-1, Botan, Kotou-ku, Tokyo 135-8482, Japan  
 Tel 81-3-3642-8181 Fax 81-3-3643-7094  
 E-mail public@mayekawa.co.jp  
 URL http://www.mayekawa.co.jp

Available in : Japan&28countries

Adsorption Chiller

## Eco-products

EP-8-014

Machines and equipment

chiller

### The dehumidification type air refrigeration system, "Air Ref 500"

Air is the ultimate NWF from the viewpoint of safety and environment. This is the latest refrigeration system which uses air as a refrigerant. The major feature is to suck the air in the refrigerated room, and to lower the temperature of sucked air by compressing and expanding, and then to burst out into the refrigerated room again. High coefficient of performance is realized by the expander integrated turbo-compressor, and 50% energy saving can be fulfilled compared with the former system.



#### Mayekawa Mfg.Co.,Ltd

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 URL http://www.mayekawa.co.jp

Available in : JAPAN&28countries

AirRef500

## Eco-products

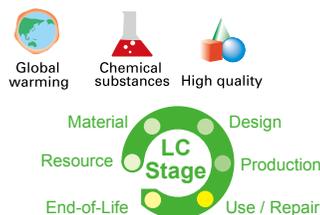
EP-8-015

Machines and equipment

chiller

### Hybrid cooling unit

This is a hybrid cooling unit with one of the NWFs, NH<sub>3</sub> which is equipped with a IPM motor and a semi-hermetic type compound screw compressor which is proud of world's best coefficient of performance (COP). It is optimum for the re-modeling and the renewal of the existing refrigerated warehouses and/or the food processing factories.



#### Mayekawa Mfg.Co.,Ltd.

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 URL <http://www.mayekawa.co.jp>



Available in : Japan&28countries

NewTon3000

## Eco-products

EP-8-016

Machines and equipment

chiller

### Low energy consumption heat source for large-scale air conditioning facilities

The product is a high-efficient heat-pump chiller, which is most suitable for the industrial-use central air-conditioning. The new refrigerant R410A was used for the newly developed X-frame and the large-scale chiller. By using a module connecting method, realized were the high efficiency, the saving of space and the enlargement of capacity. The commercial goods of 90-360 refrigeration ton are lined up for heat pump and/or cooling only machine.



- **Energy Saving:** The energy of 31% was saved compared to the conventional machine. For the absorption-type hot/cold water-service machine, 49% of the primary energy, which corresponds to 60% of CO<sub>2</sub>, was reduced. As for the refrigerator of 300 ton class, the CO<sub>2</sub> reduction of 60 ton/ year is possible.
- **Resource Saving:** The weight of 14% was reduced compared to the conventional machine. 85% of the used materials are iron, copper and aluminum. Recycling is possible for most of the mechanical parts.

The product won the Minister of Economy Trade and Industry Prize at the 17th Energy-saving grand prix (a section for business use) in Japan

#### Toyo Carrier Engineering Co., Ltd.

1300-3, Kamo, Kikugawa-shi, Shizuoka 439-0031, Japan  
 Tel 81-537-36-1111 Fax 81-537-36-1163  
 E-mail  
 URL



Super flex modular chiller RUA-TBP series

## Eco-products

EP-8-017

Machines and equipment

chiller

### High-Efficient absorption chiller with two-stage absorption and evaporation

Ebara's two-stage absorption and evaporation cycle type dual absorption chiller "RFW model" is developed in line with the market demand for high efficiency chillers and received the Japan Machinery Federation's (JMF) fiscal 2005 award for superior energy-saving machinery.

The RFW Series features the world's highest-level steam consumption rate of 3.5kg/h per USRT. Steam consumption decreases more than 20% with comparing to conventional chiller. Standard specification corresponding large temperature difference decreases water flow and also power consumption of water pump more than 30%.

The refrigerating capacity is 1864kW{530USRT}~5274kW{1500 USRT} per unit and system up to 10549kW{3000USRT} could be configured by installing 2 RFW units side-by-side.

#### EBARA CORPORATION

11-1 Haneda Asahi-cho, Ohta-ku, Tokyo 144-8510, Japan  
 Tel 81-3-3743-6111 Fax 81-3-3743-6589  
 E-mail [webmaster@ebara.com](mailto:webmaster@ebara.com)  
 URL <http://www.ebara.co.jp>



Available in : Sales&Service Network

Ebara Steam Absorption Chiller RFW model

## Eco-products

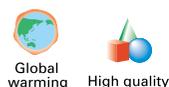
EP-8-018

Machines and equipment

heat pump air conditioning system

### Non-fluorocarbon type energy saving air-conditioning system

This is a heat pump system using one of the NWFs, HC i.e. hydrocarbons. By using mixed hydrocarbons, it enables to do high-efficient operation for cooling, heating and hot water supply.



#### Mayekawa Mfg.Co.,Ltd.

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 URL <http://www.mayekawa.co.jp>

Available in : Japan&28countries

HC2008HP

## Eco-products

EP-8-019

Machines and equipment

heat pump hot-water supply system

### Home Heating and Cooling Solution

Altherma is an air to water heat pump type boiler consisting of an outdoor unit, hydro-box and secondary equipment, researched and developed by Daikin Europe. N.V.

In the system, hot water is circulated to secondary equipment such as under floor heating and radiators to warm rooms. Air to water heat pump type boilers provide energy efficient heating and are getting famous in the European heating market.

Heat pump type boilers are cheaper and less laborious than the alternatives such as combustion type boilers. 66 to 80% of the heat produced by Altherma comes from the ambient air and is free of charge.

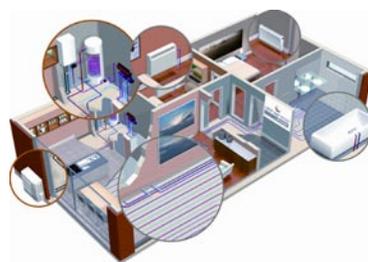
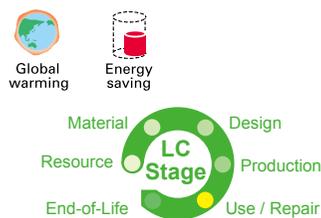
With Altherma, you can personally contribute to a better environment because heat pumps consume little energy. Altherma emits no direct CO<sub>2</sub> and also, emits far less CO<sub>2</sub> than fossil fuel boilers.

#### DAIKIN INDUSTRIES, LTD.

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E-mail [kankyo@daikin.co.jp](mailto:kankyo@daikin.co.jp)  
URL <http://www.daikin.co.jp>

Available in : Europe

Altherma



## Eco-products

EP-8-020

Machines and equipment

gas heat pumps

### New refrigerant high-efficiency gas heat pump

Our company developed a new refrigerant high-efficiency gas heat pump together with equipment manufacturers and commenced sales of it in April 2005. The COP was increased by 15% relative to that of the conventional equipment and is on the order of 1.5 (the average of the cooling and heating modes), the highest level in the field. The product therefore offers its customers a lower running cost and a higher energy-saving merit. Concern for the global environment is further evidenced by the utilization of refrigerants that do not deplete the ozone layer. In addition, we improved the efficiency of half load and commenced sales in October 2006.

#### Tokyo Gas Co., Ltd

1-5-20, Kaigan, Minato-ku, Tokyo 105-8527, Japan  
Tel 81-3-5400-7671 Fax 81-3-3432-5509  
E-mail  
URL <http://www.tokyo-gas.co.jp/>

Available in :



## Eco-products

EP-8-021

Machines and equipment

heat pump hot-water supply system

### High-efficiency heat pump water heater for commercial field

Commercial heat pump hot water supply system which can provide up to 40 ton /day, by using modular 14 kW heat pump systems from 2 to 14 units (28-168kW). High performance heat pump unit with rated COP of 4.45. Using open type water storage tank with capacity from 4 ton to 30 ton. Simultaneous upstairs and downstairs hot water supply is available. Touch panel type controller is adopted. Customer can set water storage volume every hours very easily. Heat pump unit is used for water supply maintenance circuit. Energy consumption is reduced to 1/3 of conventional electric heater type. This system reduces CO<sub>2</sub> emission by 50% to conventional gas furnace hot water supply system. Running cost is reduced 1/3 compared with the conventional gas system using cheaper night electric charge.



#### Toshiba Carrier Corporation

Shinagawa Center Bulding, 23-17, Takanawa 3-chome, Minato-ku, Tokyo 108-0074, Japan  
Tel 81-3-6409-1735 Fax 81-3-5447-8388  
E-mail  
URL <http://www.toshiba-carrier.co.jp/>

Available in :

Hot Power Eco Ultra Big SYSTEM, Heat Pump Unit, System Tank Unit ,System Control Unit, etc

## Eco-products

EP-8-022

Machines and equipment

energy system

### Commercial-use gas engine co-generation system

Gas co-generation systems efficiently extract electrical and thermal energy from city gas and attain a high total energy efficiency. The high total efficiency of the systems helps to curtail CO<sub>2</sub> emissions and contributes to the customer's economic efficiency. This is a landmark commercial-use model of the smallest size in Japan, and was developed to facilitate the use of such systems in a wider range of fields.

Customers using this system can greatly reduce their energy costs by lowering their purchase of utility power and city gas charges for boilers.

With a total efficiency of at least 80% (a rate that could only be attained with cogeneration) and its effective use of energy, the system reduces CO<sub>2</sub> emissions to about two-third of the conventional level, and therefore has been given high ratings in the environmental aspect as well.

Because the model is compact, it does not take up much space. In addition, it does not require a high initial investment. These features are behind the spread of easy use among many customers. In addition, we have some models which provide backup electricity in the event of power loss.



#### Tokyo Gas Co., Ltd

1-5-20, Kaigan, Minato-ku, Tokyo 105-8527, Japan  
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## Eco-products

EP-8-023

Machines and equipment

systems

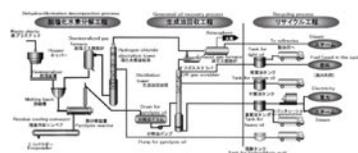
### Waste Plastics Liquefaction System

This product is a system which converts the plastic mixture in general waste or industrial waste to oil by thermal decomposition. The product oil can be utilized for various applications (diesel generator fuel, boiler fuel, chemical raw materials, etc.) after the oil has been fractionated into heavy oil, medium oil and light oil. The system consists of the pre-treatment process (pelletizing of the charged material), the dehydrochlorination process (desalting, thermal decomposition), and the product oil recovery process (fractional distillation)

- **Energy Saving:** The product oil can be used as the alternative fuel of boiler and power generation, and therefore the substitute share becomes a CO<sub>2</sub> reduction. In addition, a higher CO<sub>2</sub> reduction effect is obtained, if the feeding stock recycling in which the product oil is returned to the crude oil purification flow is carried out.
- **Resource Saving:** The user can make use of the oil, the effluent gas, the residue, the hydrochloric acid, etc. which were obtained in the recovery process, so it is possible to raise the recycling rate.

#### TOSHIBA CORPORATION Social Infrastructure Systems Company

1-1, Shibaura 1-chome, Minato-Ku, Tokyo 105-8001, Japan  
Tel 81-3-3457-4305 Fax  
E-mail  
URL



Waste Plastic Liquefaction System

## Eco-products

EP-8-024

Machines and equipment

systems

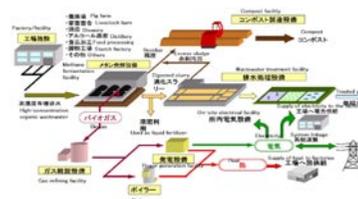
### High concentration organic effluent treatment / an energy collection system

The product is an excellent total system to recover the energy efficiently, while processing organic drainage provided from stock raising and food processing. The system consists of methane fermentation equipment, subsequent aerobic processing denitrification equipment, biogas purification and utilization equipment, etc.. For the effective utilization of the sludge residue, it is also possible to combine composting equipment or carbonization equipment, etc..

- **Energy Saving:** The gas steadily produced from organic drainage can be used as the fuel of gas-engine power generation and boiler.
- **Resource Saving:** The biogas of the biomass origin can be used as the alternative fuel of boiler and power generation, and its substitution share corresponds to a CO<sub>2</sub> reduction.

#### TOSHIBA CORPORATION Social Infrastructure Systems Company

1-1, Shibaura 1-chome, Minato-Ku, Tokyo 105-8001, Japan  
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E-mail  
URL



High concentration organic effluent treatment system

## Eco-products

EP-8-025

Machines and equipment

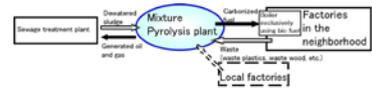
systems

### Recycle system of the sewage treatment sludge by pyrolysis

The system consists of the main facilities for pre-treatment, pyrolysis in a gasification furnace, gas-reforming and gas-cleaning, and the equipment of heat-source or gas-engine generation. The charged material is converted to the gas usable as fuels by pyrolysis and gasification. In addition, it is possible to take out carbide (char) of high utility value from the charge, and thereby high recyclability is realized.

Main features.

- (1) The amount of sludge is decreased in volume and in weight when converted to solid carbon fuel, so the sewage-disposal plant can save the cost.
- (2) As for solid fuel, a long-term storage is possible because its component is stable carbides. Moreover, the problems due to bad smell seldom happen.
- (3) In neighborhood factories using steam can use carbon fuel as the bio-fuel that is neutral for CO<sub>2</sub> discharge.
  - **Energy Saving:** The CO<sub>2</sub> reduction effect is larger than the incineration system, because the feeding of extra fuel is unnecessary for the running of process, and because solid carbon is separated owing to the thermal decomposition of the charged organic materials.



#### TOSHIBA CORPORATION Social Infrastructure Systems Company

1-1, Shibaura 1-chome, Minato-Ku, Tokyo 105-8001, Japan  
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E-mail  
URL

Recycle system of the sewage treatment sludge

## Eco-products

EP-8-026

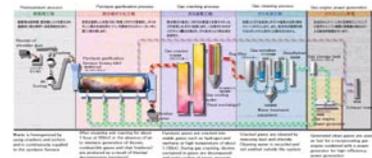
Machines and equipment

systems

### Recovery system of carbon fuels by pyrolysis and gasification

The product is a system to heat organic substances and wastes by heat-source equipment, to separate combustible gas and carbide of high utility value, and to use them as fuel and power generation material. The system consists of the main facilities for pre-treatment, pyrolysis in a gasification furnace, gas-reforming and gas cleaning, and the equipment of heat-source or gas-engine generation. The charged material is decomposed to the combustible gas containing CO<sub>2</sub> and H<sub>2</sub>O through the pyrolysis and the gas-reforming under high temperature. Namely, the gas usable as fuel is recovered. And, it is possible to take out carbide (char) of high utility value from the charge.

- **Energy saving:** The use of the produced gas is fuel, power generation, and chemical raw material. As for generation, a higher efficiency than engine power generation is possible even in a small scale facility.
- **Resource Saving:** Since various organic matter (ASR, waste plastic, biomass, etc.) can be used as the charge, and the product is gas and carbide, total recycling ratio is high.



#### TOSHIBA CORPORATION Social Infrastructure Systems Company

1-1, Shibaura 1-chome, Minato-Ku, Tokyo 105-8001, Japan  
Tel 81-3-3457-4336 Fax  
E-mail  
URL

Recovery system of carbon fuels by pyrolysis and gasification

## Eco-products

EP-8-027

Machines and equipment

water heaters

### Heat Pump Water Heater for Industrial Use

**1. Ample capacity.**

The capacity of the hot-water supply has been considerably increased by utilizing the natural refrigerant CO<sub>2</sub> when it produces high-temperature boiling at approximately 90°C. The basic system configuration makes it possible to provide about four tons of hot water per day (60°C, with nighttime hot-water storage and daytime 8-hour operation).

**2. High-efficiency hot-water supply at a low running cost.**

Since it achieves the industry's top-class intermediate-stage COP of 4.1, it is very economical. Its running cost is about one-third of that of gas hot-water supply systems, and significant electricity bill savings can also be obtained.

**3. Environmental friendliness**

It utilizes the natural refrigerant (CO<sub>2</sub>), whose ozone depletion potential is "zero" and whose global warming potential is about 1/1700 that of a conventional fluorocarbon refrigerant. Its low energy consumption also decreases CO<sub>2</sub> indirect emission.

**4. Flexible Combination**

One heat pump unit can be combined with one to three hot-water storage units, depending on the amount of hot-water usage.

**Hitachi Appliances, Inc.**

Hitachi Atago Bldg., 15-12, Nishi shimbashi 2-chome, Minato-ku, Tokyo 105-8410, Japan  
 Tel 81-3-3502-2111 Fax  
 E-mail  
 URL <http://www.hitachi-ap.co.jp/>



RHK-1501VGS (For Japanese Market)

## Eco-products

EP-8-028

Machines and equipment

water tube boilers

### PRB coal-fired super critical once-through, sliding pressure, BHK-type Benson Boiler

**Description of Products**

The power boiler is specifically designed for use in thermal power plants. It is a supercritical, once through, sliding pressure unit, fueled by pulverized coal.

**Development Concept**

The original 1997 concept has been improved in the current design by enhancing the steam conditions to increase thermal efficiency, producing a reduction in exhaust gas and improving fuel consumption. Materials used in the construction of the unit have also been rationalized to significantly reduce mass and allow optimization of the physical characteristics of many components.

**Babcock-Hitachi K.K.**

Akihabara UDX Building, 14-1 Soto-Kanda 4-chome, Chiyoda-ku, Tokyo 101-0021, Japan  
 Tel Fax  
 E-mail  
 URL <http://www.power-hitachi.com/>



Power Boiler

## Eco-products

EP-8-029

Machines and equipment

boilers, except hot water boilers

### Biomass Boiler System

This system uses a circulating fluidized bed boiler to efficiently generate power and supply heat from carbon-neutral biomass. The biomass boiler system has been adopted and used mainly by wood biomass power plants and paper-manufacturing companies and contributed to reduce CO<sub>2</sub> emission.



#### JFE Engineering Corporation

1-5-1, Marunoushi, Chiyoda-ku, Tokyo 100-6527, Japan  
 Tel Fax  
 E-mail  
 URL <http://www.jfe-eng.co.jp/>



## Eco-products

EP-8-030

Machines and equipment

photovoltaic module

### Multi-crystalline Photovoltaic Module

Advanced cell-connection technologies cultivated for Sharp Space-use solar cells for many years are applied to terrestrial solar cells and modules. Newly developed Stress Proof inter-connector and unique electrode pattern enable us to relieve the contraction stress originating from thermal expansion by temperature change. These technologies are effective to improve yield in production and to secure reliability of modules especially for modules using thin cells.



#### SHARP CORPORATION

22-22, Nagaike-cho, Abeno-ku, Osaka 545-8522, Japan  
 Tel 81-6-6625-0438 Fax 81-6-6625-0153  
 E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
 URL <http://www.sharp.co.jp/>



Products/Model: Photovoltaic Module ND-153AU

## Eco-products

EP-8-031

Machines and equipment

photovoltaic module

### Hooray Energy Photovoltaic Module

Founded in 2007, Hooray Energy is a Singapore based photovoltaic modules manufacturer, focusing in producing highly reliable low wattage modules. Hooray Energy is competent in offering OEM service and customized wattage modules for large projects .

With our constant R&D effort, we have developed innovative technology to improve the photovoltaic modules performance efficiency and operating life-span.

Hooray photovoltaic modules are used in rural electrifications, street lightings, battery charging system, security sensor system, water pumping, recreation and leisure.

Feel free to write to us if you need further clarifications on our products. We look forward to hear from you.

#### Hooray Energy Pte Ltd

48 Toh Guan Road East #08-123 608586, Singapore  
Tel 65-6515-5356 Fax 65-6515-5276  
E-mail [info@hoorayenergy.com](mailto:info@hoorayenergy.com)  
URL <http://www.hoorayenergy.com>

Available in : ASEAN



PV Module Hooray 50 MCP

## Eco-products

EP-8-032

Machines and equipment

residential fuel cells

### Residential fuel cell cogeneration system using a polymer electrolyte fuel cell (PEFC)

Polymer electrolyte fuel cell for home-use is the equipment which produces electricity and heat from city gas or liquefied petroleum (LP) gas. The total energy efficiency due to the combination of the power generation and the heat recovery is very high, namely over 85%. This suggests that the co-generation system is excellent in the energy saving. By installing this in an ordinary home, it is possible to reduce CO<sub>2</sub> discharge by 1 ton

- **Energy Saving:** A very high efficiency of above 85% was realized. The CO<sub>2</sub> reduction rate becomes about 40% compared to that before installation, and the annual CO<sub>2</sub> reduction of about 1 ton is possible
- **Clean Exhaust:** The exhaust which comes out of the residential fuel cell is only water and CO<sub>2</sub>, and it is very clean

#### Toshiba Fuel Cell Power Systems Corp.

1-1, Shibaura 1-chome, Minato-Ku, Tokyo 105-8001, Japan  
Tel 81-3-3457-3622 Fax 81-3-5444-9199  
E-mail  
URL



Available in : Japan

Left side:Fuel cell package, Roght side:Hot water storage unit

## Eco-products

EP-8-033

Machines and equipment

auxiliary machinery of crushers, mills and separators

### Mobile Crusher BR580JG-1

Komatsu offers providing solutions that the company provides a means of on-site recycling that recycles the residuals generated from construction sites and civil engineering projects at the site where they are generated. A sample of these solutions is the large-scale mobile crusher BR580JG. The BR580JG-1 has undergone a complete model change from the BR550JG, a type of mobile crusher/recycler in the 50-ton class that crushes and recycles rock, pieces of concrete, slag, and other residuals on site.

This model, changed after a six-year interval, satisfies Tier 3 emission standards, which became effective in 2006, and features enhanced operability and ease of maintenance. Furthermore, the BR380JG has succeeded in strikingly improving its cost performance through innovative features such as the well-received fully automatic discharge setting adjustment system and a function to protect the hydraulic crusher.

#### Komatsu Ltd.

3-2-6 Akasaka, Minato-ku, Tokyo 107-8414, Japan  
 Tel 81-3-5561-2646 Fax 81-3-3582-8332  
 E-mail [kankyo@komatsu.co.jp](mailto:kankyo@komatsu.co.jp)  
 URL <http://www.komatsu.co.jp/>



Available in : Worldwide

Mobile Crusher BR580JG-1

## Eco-products

EP-8-034

Machines and equipment

machinery and equipment for recycling

### Track Mounted Soil Recycler ,SR-G2000

With our high technology for soil, Hitachi has developed an advanced track mounted soil recycler SR-G2000 which is characterized by both light weight and best-in-class material handling capacity. The main 3 features are as follows.

- 1) Wide application and high productivity
  - Smooth material feed without bridging thanks to Swing Gate
  - Horizontal feeder and wide hopper enable to handle moisturized soil.
- 2) Excellent mixing performance
  - High performance with reliable double shafts mixing paddle
  - Accurate additive feed control with level roller
- 3) Easy operation and maintenance
  - Easy maintenance with divided opening mixing chamber
  - Easy dumping with wide and lower hopper

Our highly advanced soil recycler offers reliable operation in job sites such as civil engineering site, contaminated soil clean up, waste management, recycle, and so on.

#### Hitachi Construction Machinery Co., Ltd.

5-1, Koraku 2-chome, Bunkyo-ku, Tokyo 112-8563, Japan  
 Tel 81-3-3830-8093 Fax 81-3-3830-8219  
 E-mail  
 URL <http://www.hitachi-c-m.com>



Track Mounted Soil Recycler ,SR-G2000

## Eco-products

EP-8-035

Machines and equipment

machinery and equipment for recycling

### Track Mounted Wood Grinder, ZR260HC

HITACHI track mounted wood grinder ZR260HC is developed with our full technology and realizes higher performance. The main 5 features are as follows.

- 1) Featuring automatic feed control to keep higher grinding efficiency. In case of grinding load is increased, feed conveyor stop automatically to prevent grinding under low efficiency. Feeder restarts automatically as soon as grinding load is reduced.
- 2) It enables to grind material under higher efficiency with feed material select switch.
- 3) Easy to replace screen, hammer bit, and wearing plate. Also possible to open return deck and plate under driving roller. Easy to clean up crushed material on return deck.
- 4) Complied with tier 3 gas emission.
- 5) Equipped 4 pieces of water spray nozzle for dust suppression and fire prevention.

Our wood grinder offers reliable operation environmentally friendly at various job sites.

#### Hitachi Construction Machinery Co., Ltd.

5-1, Koraku 2-chome, Bunkyo-ku, Tokyo 112-8563, Japan  
 Tel 81-3-3830-8093 Fax 81-3-3830-8219  
 E-mail  
 URL <http://www.hitachi-c-m.com>



Track Mounted Wood Grinder, ZR260HC

## Eco-products

EP-8-036

Machines and equipment

machinery and equipment for recycling

### Track Mounted Shredder, ZR900TS

HITACHI track mounted shredder ZR900TS is suitable for shredding Car tires, Plastics, Wood, and so on. With ability for strong crush, it handles recycling disposal of every waste from urban large-size refuse to industrial waste effectively. The main 5 features are as follows.

- 1) High mobility  
 With truck mounted system, ZR900TS can move freely on-site.
- 2) Powerful shred  
 Low speed high torque motor and monolithic cutter enable the strong shred power.
- 3) Efficient cutter control  
 With original hydraulic operating system, ZR900TS increases the efficiency of shredding. In case of cutter revolution load is increased, stop and reverse the cutter automatically to prevent shredding under low efficiency.
- 4) Reduced Operating Cost  
 This 2-shaft shredder is fitted with monolithic cutters featuring remarkable shredding capability and durability. This monolithic cutter has good wear resistance and impact resistance, furthermore it can be reused by the repair and grinding.
- 5) Easy operation and safety design  
 Designed for easy operation and safety such as hand-rail, ladder, access equipment, scatter protection door, water spray pipe system for dust suppression, and so on.

#### Hitachi Construction Machinery Co., Ltd.

5-1, Koraku 2-chome, Bunkyo-ku, Tokyo 112-8563, Japan  
 Tel 81-3-3830-8093 Fax 81-3-3830-8219  
 E-mail  
 URL <http://www.hitachi-c-m.com>



Track Mounted Shredder, ZR900TS

## Eco-products

EP-8-037

Machines and equipment

equipment for construction and mining

### Advanced technology of diesel engine for reducing

Since 2006, Tier THE THIRD emission standards are enforced in Japan, US and Europe. Its largest focus is the reduction of NO<sub>x</sub> (a nitrogen oxide). In order to reduce NO<sub>x</sub>, it's necessary to lower the combustion temperature. However, the combustion at lower temperatures promotes the formation of particulate matter, and it makes fuel economy worse. In the development of diesel engines, the simultaneous reduction of NO<sub>x</sub> and particulate matter is most desired. Along with it, what is asked for is to improve the fuel consumption, which realizes the reduction of running cost of user's machine. Komatsu developed main components of the body such as engine and hydraulic equipment in own factories. All of the electronic control technology is also in the same situation. By making the most of its strength in production, and by combining it to the latest technology, Komatsu succeeded in the development of new engine technology. This new engine technology is going to mount on our new goods hereafter. Here, "ecot 3" is short for "ecology & economy-technology". In Komatsu, we call our advanced technology for diesel engine "ecot 3".



#### Komatsu Ltd.

2-3-6 Akasaka, Minato-ku, Tokyo 107-8414, Japan  
 Tel 81-3-5561-2646 Fax 81-3-3582-8332  
 E-mail [kankyo@komatsu.co.jp](mailto:kankyo@komatsu.co.jp)  
 URL <http://www.komatsu.co.jp/>

Tier 3-compliant engine which incorporates Komatsu

## Eco-products

EP-8-038

Machines and equipment

fixtures and accessories for metal machining

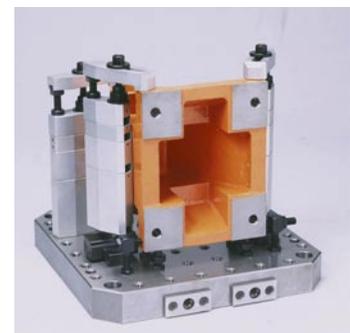
### Fixturing Components & Systems

Traditional permanent fixtures are often discarded if workpieces are changed. Imao modular fixturing systems include a wide variety of tooling plates/blocks, clamps, supports and others, and allow flexibly and repeatedly rebuilding fixtures for new workpieces just by replacing fixturing components with other better matching ones.



#### IMAO CORPORATION

2002 Senbiki, Seki, Gifu 501-3954, Japan  
 Tel 81-575-28-5802 Fax 81-575-28-5812  
 E-mail [info@imao.jp](mailto:info@imao.jp)  
 URL <http://www.imao.co.jp>



Object in orange: workpiece  
 Others: Imao fixturing components

Available in : Japan, USA and Europe

## Eco-products

EP-8-039

Machines and equipment

assembly equipments

### Direct Drive Modular Mounter GXH-1S

- 1 Reduction in power consumption by 40% and productivity enhancement by 65% compared to conventional products
- 2 Reduction of the noise by 14% to provide more quiet working environment
- 3 Improvement in product quality by unique functions of detection and teaching



Energy saving



High quality



GXH-1S

#### Hitachi High-Tech Instruments Co., Ltd.

1-1-1 Sakata, Oizumi-Machi, Ora-Gun, Gunma 370-0596, Japan  
 Tel 81-276-61-7930 Fax 81-276-61-8710  
 E-mail  
 URL <http://www.hitachi-hitec-hti.com/en/index.html>

## Eco-products

EP-8-040

Machines and equipment

vacuum pumps

### EI-D Series energy-saving type power supply unit

Turbo-molecular pump is vacuum pump which make up clean ultra-high vacuum by carrying out the molecular -level exhaust by means of high-speed rotation of turbine blade. The new-model power supply unit (EI-D Series) achieved its weight reduction with the help of a new control circuit which comprises DSP(Digital Signal Processor) and HIC(Hybrid IC) and of the high-density packaging technology. In comparison with our previous-model product, the volume and the weight reduced by 50%, respectively. The maximum power consumption also reduced by 30% by installing the new-model power supply unit.



Global warming



Resource



High quality



Energy saving



#### Shimadzu Corporation

1, Nishinokyo-kuwabara-cho, Nakagyo-ku, Kyoto-shi, Kyoto 604-8511, Japan  
 Tel 81-75-823-1113 Fax 81-75-823-2062  
 E-mail [kksitu@group.shimadzu.co.jp](mailto:kksitu@group.shimadzu.co.jp)  
 URL <http://www.shimadzu.co.jp>

EI-D Series pump power supply

## Eco-products

EP-8-041

Machines and equipment

pumps

### Energy-saving canned motor pumps

1. 8 steps controlled energy-saving drive can be done with the internal inverter carried on the pump. Further, it has the automatic valuable speed control function by external signal input and trouble caution signal output function in standard.
2. Application of the canned motor and inverter enable the pump to be compact. Because of the leakage free design, the sealing device is maintenance free.



Ebara Hzfree pump model MMF

#### EBARA CORPORATION

11-1 Haneda Asahi-cho, Ohta-ku, Tokyo 144-8510, Japan  
 Tel 81-3-3743-6111 Fax 81-3-3743-6589  
 E-mail [webmaster@ebara.com](mailto:webmaster@ebara.com)  
 URL <http://www.ebara.co.jp>

## Eco-products

EP-8-042

Machines and equipment

air compressors

### Variable Speed Control Packaged Oil-Free Bebicon

Variable frequency control with Inverter Drive keeps the pressure stable in a narrow operation band. This allows significant energy savings over conventional control methods.

Frequency controlled starting with inverter drive reduces the starting noise and vibration.

Low speed operating sound level is significantly lower than normal operation sound level.



POD series V-type

#### Hitachi Industrial Equipment Systems.,Ltd.

AKS Bldg., 3, Kanda Neribei-cho, Chiyoda-ku, Tokyo 101-0022, Japan  
 Tel 81-3-4345-6075 Fax 81-3-4345-6913  
 E-mail  
 URL <http://www.hitachi-ies.co.jp/english/products/overview/pdf/bebicon>.

Available in : Japan, Asia, and China

## Eco-products

EP-8-043

Machines and equipment

air compressors

### Variable Speed Control Oil-Free Rotary Screw Air Compressors

Hitachi Variable Frequency Control keeps the pressure of compressed air stable in a narrow operation band. This technology has achieved a significantly larger energy saving compared to conventional control methods.

In addition gear-case oil mists are not vented to atmosphere, but recaptured, using Hitachi's patented oil mist remover. Oil mists are recycled, saving maintenance oil, eliminating possibility of emissions into the environment, and ensuring purity of air compression.



#### Hitachi Industrial Equipment Systems.,Ltd.

AKS Bldg., 3, Kanda Neribeicho, Chiyoda-ku, Tokyo 101-0022, Japan  
Tel 81-3-4345-6075 Fax 81-304345-6913  
E-mail  
URL <http://hitachi-ies.co.jp/english/products/overview/pdf/screw.pdf>

Available in : Japan,Asia,China and the U.S.A

DSP Series V-type

## Eco-products

EP-8-044

Machines and equipment

filters

### Cerazone ~ 100% ozone treatment system ~

This product is designed to recirculate the water in large bathtubs. It employs filtering and ozone sterilization and can process 10 tons of water per hour.

- (1) Energy consumption is 950,000 MJ and carbon dioxide emissions are 38 tons over the entire life cycle of the product, including 10 years of use.
- (2) Energy consumption in the use stage is about 80 MWh, the volume of water treated over 10 years about 1,050 tons, and the average per month 9 tons.



#### TERAO CO., LTD

1-7-18, Minami-harimaya-cho, Kochi-shi, Kochi 780-0833, Japan  
Tel 81-88-882-2617 Fax 81-88-883-6653  
E-mail [info@terao-kochi.co.jp](mailto:info@terao-kochi.co.jp)  
URL <http://www.kanozo.jp/>

Available in : Japan

Cerazone CZ-10ST

## Eco-products

EP-8-045

Machines and equipment

environment protecting equipment

### MU AERATOR® : Micro bubbles aeration device

**PRINCIPLES:** This device is basically composed of two "MU MIXER®"s , a static mixer of very high efficiency. Lower mixer installed in the lower part of the device has the function of creating air bubbles in the raw water to be treated, as well as generating strong water circulation in the aeration tank with the help of up-rising air-lift effect. Air circulation in the tank generated together with fine compressed air bubbles is stirred and mixed with strong force to create further fine bubbles. Oxygen contained in these fine bubbles is absorbed into the raw water with high efficiency.

**SPECIAL FEATURES:**

- 1- Energy Saving Effect: More than 20% or more saving of electricity consumption.
- 2- Maintenance Free Effect: As the outlet of exhaust air is 24 mm in diameter, pressure loss is always at low, eventually extremely less blocking.
- 3- Safety: "MU MIXER®" is made of polypropylene, which is of anti-corrosive and of high mechanical strength. Further, no hazardous gases generated when disposing by burning.

**EFFICIENCY:**

- 1- Oxygen absorption efficiency: 7.7 ~ 8.9 % (Water depth: 4 meters)
- 2- Air infusion volume: 0.6 ~ 1.2 Nm<sup>3</sup>/min.
- 3- Pressure loss: 1.5 ~ 3.0 kPa.

#### MU COMPANY LTD.

18-8, Ueno-Koen, Taito-ku, Tokyo 110-0007, Japan  
Tel 81-3-3828-7090 Fax 81-3-3823-2890  
E-mail 0325muc@mu-company.com  
URL <http://www.mu-company.com/>



MU AERATOR®

## Eco-products

EP-8-046

Machines and equipment

environment protecting equipment

### MU SCRUBBER, Wet type exhaust gas treatment device

Since 1983 MU COMPANY LTD. has concentrated in the area of industrial waste gas treatment. Based on our proprietary static fluid mixing technology, we have successfully supplied many MU SCRUBBERS to contribute to the saving of production and maintenance costs thanks to the high efficiency of our device.

Special features of MU SCRUBBER are; 1- Maintenance free, because of no adhesion of solid materials on the internals. 2- High efficiency of the device, i.e., Gas flow rate: 9,000~14,000 m<sup>3</sup>/m<sup>2</sup>/Hr, Water flow rate: 250~600m<sup>3</sup>/m<sup>2</sup>/Hr., Pressure loss: below 3 kPa. 3- Flexibly respondent to wide ranges of raw gases to be treated, i.e., 100% raw gas down to 1 ppm. after treatment.

Some examples of applications;

Odor treatment device, Desulfurization and dust removal of exhaust gases, Removal of silica compounds in exhaust gas, and Recovery of HCl gas of high concentration etc.

#### MU COMPANY LTD.

18-8, Ueno-Koen, Taito-ku, Tokyo 110-0007, Japan  
Tel 81-3-3828-7090 Fax 81-3-3823-2890  
E-mail 0325muc@mu-company.com  
URL <http://www.mu-company.com/>



Odor control device for rendering plant

## Eco-products

EP-8-047

Machines and equipment

environment protecting equipment

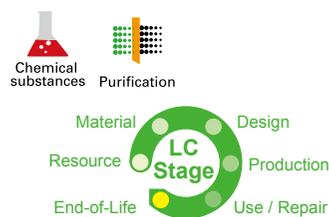
### "HM2 system", on-site detoxification of the materials contaminated with dioxin

HM2 is a detoxification system that can work on-site to detoxify the substances which were polluted by dioxin; for example, soil, bottom ash and fly ash. It is further possible to on-site detoxify the sedimentary soil (bottom material) of rivers and harbors. The system not only detoxifies the contaminated substances, but also decomposes the dioxin in the exhaust gas from the detoxification process thermally by use of the dioxin decomposing equipment "DeDIOX". Each equipment is compact and independent, so the space-saving is realized.

※ In 2003 fiscal year, the system has been certified as the bottom material purification technology by Ministry of Land, Infrastructure and Transport of Japan.

#### Mitsubishi Materials Techno Corporation

1-14-16 Kudankita, Chiyoda-ku, Tokyo 102-8205, Japan  
 Tel 81-3-3221-1741 Fax 81-3-3239-8763  
 E-mail [mmtecsal@mmc.co.jp](mailto:mmtecsal@mmc.co.jp)  
 URL <http://www.mmtec.co.jp>



Available in : JAPAN

HM2 system, on-site detoxification of the materials contaminated with dioxin

## Eco-products

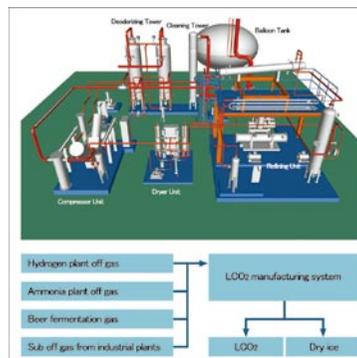
EP-8-048

Machines and equipment

environment protecting equipment

### Liquefied CO<sub>2</sub> Manufacturing Systems

Ammonia manufacturing plants and beer breweries emit high levels of carbon dioxide. Our "Liquefied CO<sub>2</sub> Manufacturing System" is able to capture and recycle these emissions and produce extremely high levels of liquefied CO<sub>2</sub> with over 99.99% purity. The recycled CO<sub>2</sub> can then be used to manufacture carbonated beverages and dry ice. The running costs of our refining technologies are 19% more efficient than conventional methods.



#### Hitachi Plant Technologies, Ltd

5-2, Higashi-Ikebukuro 4-Chome, Toshima-ku, Tokyo 170-8466, Japan  
 Tel 81-3-5928-8100 Fax 81-3-5928-8701  
 E-mail [koho-senden@hitachi-pt.com](mailto:koho-senden@hitachi-pt.com)  
 URL <http://www.hitachi-pt.com>

View of Liquefied CO<sub>2</sub> Manufacturing Systems

## Eco-products

EP-8-049

Machines and equipment

environment protecting equipment

### Catalytic PFC Resolver

This resolver has a capability of resolving 99% or more of greenhouse gas (PFC gas) from semiconductor factories through the proprietary catalyst technology. PFC (Perfluoro Compound): Compound whose warming factor is several thousands times larger than carbon oxide (CO<sub>2</sub>). Development Concept Recalcitrant greenhouse gas (PFC gas) is resolved efficiently at low temperature to prevent global warming.



CD200

#### Hitachi, Ltd.

Akihabara Daibiru Building, 18-13 Soto-Kanda 1-chome, Chiyoda-ku, Tokyo 101-8618, Japan  
Tel 81-294-21-1111 Fax  
E-mail  
URL <http://www.hitachi.com/>

## Eco-products

EP-8-050

Machines and equipment

motors

### High-efficient motors

This product is a new highly effective motor that contributes to conservation of energy applicable to various machines. The optimization of the shape of the core and high-quality material have decreased the loss by about 20-30% (compared with our standard motor). The stator coil temperature has been decreased by about 10-20°C by a optimally designed high cooling capacity and an aluminum alloy frame.



TFO-K

#### Hitachi Industrial Equipment Systems.,Ltd.

AKS Bldg., 3, Kanda Neribei-cho, Chiyoda-ku, Tokyo 101-0022, Japan  
Tel 81-3-4345-6071 Fax 81-3-4345-6913  
E-mail  
URL

## Eco-products

EP-8-051

Machines and equipment

motors

### Traction Motor for Rolling Stock Realizing Noise Reduction by Totally Enclosed Construction

By reducing motor internal losses, the efficiency of the traction motor was enhanced by 2 to 3% from that of the conventional motors. Therefore, it is possible to reduce running cost owing to the higher efficiency.

By the adoption of totally-enclosed construction, the reliability of motor itself was improved, and the lower noise from motor was realized since the internal fan noise was shut out.

- **Energy Saving:** By pursuing the higher efficiency, 9% of the power consumption (when compared with our conventional motors) is possible to be reduced.
- **Resource Saving:** Since the motor inside is clean owing to totally-enclosed construction, it will prolong the overhaul period of the motors and reduce the maintenance cost.



#### TOSHIBA CORPORATION Industrial Systems Company

1-1, Shibaura 1-chome, Minato-Ku, Tokyo 105-8001, Japan  
 Tel Fax  
 E-mail  
 URL

Available in : JAPAN

Traction Motor Totally Enclosed with an Internal Fan

## Eco-products

EP-8-052

Machines and equipment

generators

### Babcock & Wilcox Volund Wood Biomass Gas-fired Power Generation System

Combining gasification furnace and gas engine, this system efficiently generates power from carbonneutral biomass. It has realized comprehensive energy utilizing efficiency rate as high as 80% or more by not only generating power but also utilizing heat.



#### JFE Engineering Corporation

1-5-1, Marunouchi, Chiyoda-ku, Tokyo 100-6527, Japan  
 Tel Fax  
 E-mail  
 URL <http://www.jfe-eng.co.jp/>

## Eco-products

EP-8-053

Machines and equipment

generators

### Co-generation system with micro-gas engine: GENELIGHT

GENELIGHT is an energy-saving gas cogeneration system which generates electricity by a gas engine and heats water utilizing exhaust heat of generation. Heated water is stored in the storage tank and then supplied to the building. This system is ideal for small and mid-sized hotels, hospitals and restaurants for its energy-saving features and for its supply capacity of large amount of hot water.

The 25kW model has achieved the generation efficiency of 33.5% (LHV basis), the world's highest in this capacity range.

#### Osaka Gas Co., Ltd.

4-1-2, Hiranomachi, Chuo-ku, Osaka-shi, Osaka 541-0046, Japan  
Tel 81-6-6205-4605 Fax 81-6-6202-1040  
E-mail  
URL <http://www.osakagas.co.jp>



## Eco-products

EP-8-054

Machines and equipment

generators

### Polymer Electrolyte Fuel Cell (PEFC) for residential use

Osaka gas is currently developing PEFC jointly with Toshiba Corp.. It generates electricity by chemical reaction of oxygen in the air and hydrogen extracted from natural gas.

It is a highly energy-saving system which has realized reduced energy consumption by 28% as well as lower CO<sub>2</sub> emission by 42% through utilization of waste heat from generation process for water heating purposes. In addition, chemical reaction causes no noise. It is currently undergoing durability and verification tests as part of a government-sponsored R&D project.

#### Osaka Gas Co., Ltd.

4-1-2, Hiranomachi, Chuo-ku, Osaka-shi, Osaka 541-0046, Japan  
Tel 81-6-6205-4605 Fax 81-6-6202-1040  
E-mail  
URL <http://www.osakagas.co.jp>



## Eco-products

EP-8-055

Machines and equipment

generators

### Polymer Electrolyte Fuel Cell (PEFC) for residential use

Osaka gas is currently developing PEFC jointly with Sanyo Electric Co., Ltd. It generates electricity by chemical reaction of oxygen in the air and hydrogen extracted from natural gas.

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#### Osaka Gas Co., Ltd.

4-1-2, Hiranomachi, Chuo-ku, Osaka-shi, Osaka 541-0046, Japan  
Tel 81-6-6205-4605 Fax 81-6-6202-1040  
E-mail  
URL <http://www.osakagas.co.jp>

## Eco-products

EP-8-056

Machines and equipment

generators

### Solid Oxide Fuel Cell (SOFC) for residential use

SOFC consists of a generation unit and an exhaust heat utilization unit. Osaka Gas works on the development of these units jointly with Kyocera Corp. and Chofu Seisakusho Co., Ltd., respectively. The generating efficiency of this system have achieved higher than average thermal power plant: maximum energy saving of 37% and maximum CO<sub>2</sub> emission reduction of 50%. (Operational performance (HHV): generating efficiency of 41%, waste heat recovery ratio of 36%.)

The compact size of each unit\* makes the system suited for residential use.

The New Energy Foundation started the field test subsidized by NEDO in 2007. Osaka Gas strives for the commercialization of this system making use of the participation to the field test and its result.

※ Size (DxWxH, mm):

Generation unit: 350x540x950

Exhaust heat utilization unit: 300x700x1700



#### Osaka Gas Co., Ltd.

4-1-2, Hiranomachi, Chuo-ku, Osaka-shi, Osaka 541-0046, Japan  
Tel 81-6-6205-4605 Fax 81-6-6202-1040  
E-mail  
URL <http://www.osakagas.co.jp/indexe.html>

## Eco-products

EP-8-057

Machines and equipment

generators

### A small, light and high-efficiency turbine generator for heat power plant

The product is a generator for the heat power plant. It reduced the loss by 20% compared to the conventional generator, and achieved a high-efficiency of 98.8% which is the top-class of the industry. The reliability of the generator was ensured by advanced analysis and verification experiment. In addition, the manufacturing period was shortened by 30% by introducing the structure which is easy to be built up.

- **Energy Saving:** The amount of CO<sub>2</sub> exhaust was reduced; it was about 240 ton at the step of manufacturing, ( 23% cut at our company' s ratio before 15 years). ; It was about 1,700 ton per year at the step of use, (18% cut).
- **Resource Saving:** Realization of a 2/3 size in comparison with the conventional generator; Development of new materials and methods; Reduction of the waste and the environmental load by the reuse of part / materials at the time of repair.



Turbine generator

#### TOSHIBA CORPORATION Power Systems Company

1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan  
 Tel 81-3-3457-3678 Fax 81-3-5444-9377  
 E-mail  
 URL <http://www3.toshiba.co.jp/power/>

## Eco-products

EP-8-058

Machines and equipment

wind power generation system

### Hybrid system with solar energy of omni-directional wind power generation

This windmill provides 400W at the rated wind velocity of 12m/s. Since the annual average wind velocity of Kanto region in Japan is 4m/s, the power generation of 10W-15W is possible. This system adopted a vertical axis windmill which can work effectively even with the wind changing its direction frequently. Its rotation becomes slow, which gives low noise. In addition, this system adopted a double braking system, provided it receives occasional strong winds. One is an electric brake which works by the regenerative braking force. The other is mechanical one which prevents the sudden turn rise due to the gusts of wind. The windmill can stop safely by fail-safe mechanism in case that electrically uncontrollable state occurs. The system is equipped with an 110W solar battery. The full-charged battery makes it possible for 5 days to light at 15W for 8 hours every day in no sunshine and no wind state.

**Energy saving:** In comparison with the current generation by the fossil fuel, the consumption of resource and the discharge of CO<sub>2</sub> are controlled.

(Note) As for exportation we will talk individually, because this commodity needs the special maintenance system.

#### TOSHIBA PLANT SYSTEMS & SERVICES CORPORATION

(Nissay Aroma Square) 37-1, Kamata 5-chome, Ota-ku, Tokyo 144-8721, Japan  
 Tel 81-3-5714-3687 Fax 81-3-5714-3816  
 E-mail  
 URL <http://www.toshiba-tpsc.co.jp>



WIND FLOWER EWF-400

## Eco-products

EP-8-059

Machines and equipment

hydro-power generation system

### Small-scale hydro-power generation system Hydro - eKIDS™ using renewable energy

Brief specifications are as follows: the flow rate, 0.03m<sup>3</sup>/s~3.5m<sup>3</sup>/s; the head, 2~15m; the output, 1~200kw. Five kinds of the standard units cover the wide application ranges. Because of a small, lightweight pipe-in structure, the units are easily placed even in a small space. The features are cheaper running cost and longer life than other large-scale power sources, so the economical efficiency will be displayed for long-term use.

- **Energy Saving:** In comparison with the fossil-fuel power generation, the consumption of resources and the discharge of CO<sub>2</sub> are suppressed. Because of small-scale hydraulic power generation, the system can be applied to the place where hydraulic energy is available. Considered is the utilization of the water and sewage, the agriculture water, the factory waste water, discharged water from the river dam, of greenhouse gas and the saving of energy. The system can be used as dispersed power source, and it can contribute to the reduction of greenhouse gas and the saving of energy.
- **Resource Saving:** The system does not need the conventional large-scale dam, so the river environment and the natural ecosystem are not influenced.

#### TOSHIBA PLANT SYSTEMS & SERVICES CORPORATION

36-5, Tsurumichuo 4-chome, Tsurumi-Ku, Yokohama 230-8691, Japan  
Tel 81-45-500-7342 Fax 81-45-500-7599  
E-mail  
URL <http://www.toshiba-tpsc.co.jp>



Hydro-eKIDS S type

## Eco-products

EP-8-060

Machines and equipment

standard transformers

### Super-energy-saving transformers(Super Amorphous)

All losses were achieved and the decrease to about the maximum 44% was achieved. Amorphous alloys is a solid of non-crystal made from cooling from the state of Melting rapidly. The no-load loss (eddy current disadvantage + disadvantage of hysteresis) can be decreased to about 1/5 compared with the silicon Steel.



#### Hitachi Industrial Equipment Systems.,Ltd.

AKS Bldg., 3, Kanda Neribei-cho, Chiyoda-ku, Tokyo 101-0022, Japan  
Tel 81-3-4345-6076 Fax 81-3-4345-6913  
E-mail  
URL



Amorphous transformer

## Eco-products

EP-8-061

Machines and equipment

distribution transformer

### High-voltage distribution transformer “Top Runner” with improved energy efficiency

The product is the distribution transformers of “Top Runner” series (capacity: 10- 2000kVA, primary voltage: 6.6kV, and secondary voltage: below 440V). Two types are available; one is oil-immersed type for general use, the other is cast-resin-type for flame retardant use. The no-load loss was reduced by adopting high-performance iron core materials and low-loss core structure, while the load loss was reduced by expanding the application of copper conductor and by miniaturizing due to the improvement of insulation. Thereby, the energy consumption efficiency was improved by 40 % while keeping the same product size as that of the conventional one. The noise value also decreased 5-8dB (A) from the sound level of the conventional product.

- **Energy Saving:** Saving of 40% was achieved in comparison with old JIS product.
- **Resource Saving:** Increases of weight and volume were restrained by the winding structure.

**TOSHIBA CORPORATION**  
Social Infrastructure Systems Company

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E-mail  
URL



Energy saving



6.6kV/210V-300kVA Cast Resin, Transformer and 6.6kV/210V-300kVA Oil Immersed Transformer

## Eco-products

EP-8-062

Machines and equipment

switchgear

### High-density packaging type low-voltage motor control center SM3000.

In the conventional product, the maximum mounting number of the control unit was 7 pieces per 1 panel. In SM3000, it was increased to 20 pieces per 1 panel, owing to the miniaturization of control unit by electronics parts use and the contrivance of power feeding method.



Global warming



Waste



Resource



Energy saving



**Fuji Electric Systems Co., Ltd**

1, Fuji-machi, Hino-city, Tokyo 191-8502, Japan  
Tel 81-42-585-6410 Fax 81-42-587-0084  
E-mail [masuda-masahiko@fesys.co.jp](mailto:masuda-masahiko@fesys.co.jp)  
URL <http://www.fesys.co.jp/sougou/seihin/ecodesign/index.html>

## Eco-products

EP-8-063

Machines and equipment

switchgear

### Compact-type high-voltage switchgear and controlgear, "SLIMEC-V6"

This product is a high-voltage switchgear and controlgear which reduced the depth of 2000mm of the conventional board to 700mm by contriving the downsizing of the instrument and the feeding method of the electricity. The warming load was reduced by 28% at total; the power consumption was reduced by 10%. The reduction of total weight is more than 40%.



#### Fuji Electric Systems Co., Ltd

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URL <http://www.fesys.co.jp/sougou/seihin/ecodesign/index.html>

## Eco-products

EP-8-064

Machines and equipment

switchgear

### Eco-type thin high-voltage switchgear and controlgear

This product is a high-voltage switchgear and controlgear used for the water and sewage facilities. Owing to the downsizing of the instrument, the depth of 600mm was achieved in comparison with 2000mm of the conventional product. As a result, the installation space was reduced by 30%, and the reduction of the building cost of electric room became possible. In addition, the dismantling hours become 1/6 compared to before by the adoption of the rivet fastener structure. The environmental consideration parts materials such as the eco-type electric wires are used.



#### Fuji Electric Systems Co., Ltd

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Tel 81-42-585-6410 Fax 81-42-587-0084  
E-mail [masuda-masahiko@fesys.co.jp](mailto:masuda-masahiko@fesys.co.jp)  
URL <http://www.fesys.co.jp/sougou/seihin/ecodesign/index.html>

## Eco-products

EP-8-065

Machines and equipment

switchgear

### Hybrid 'Dry Air' and Solid Insulation SF6-free Switchgear

Mitsubishi Electric developed a series of 7.2 to 72 kV switchgear for power distribution featuring a composite insulation of solid materials and low-pressure dry air, friendly to the global environment, and has been placing them on the market since 2000. Here we introduce the HG-VA type of hermetically sealed compositely insulated switchgear as one of our product series.

---<< Greenhouse gas free >>-----

The adoption of a composite insulation of solid materials and low pressure, dry air (at 0.15 MPa-g with moisture removed) realizes a 72 kV C-GIS free from SF6 gas.

-----<< Components reduced to 70 % >>-----

The number of components was greatly reduced (to 70 % in comparison with our previous type) applying a simple structure vacuum circuit breaker (VCB) with an electric magnetic operating mechanism.

-----<< Operating energy reduced to 70 %, heat loss to 60 % >>-----

Electric magnetic operating mechanism reduced the VCB operating energy to 70 % of that of our previous type. The power dissipation (heat loss) was reduced to 60 % by optimizing device arrangement and minimizing conductor lengths that reduces the resistance of the main circuit.

#### Mitsubishi Electric Corporation

2-7-3 Marunouchi Chiyoda-ku, Tokyo 100-8310, Japan

Tel 81-3-3218-9024 Fax 81-3-3218-2465

E-mail eqd.eco@pj.MitsubishiElectric.co.jp

URL <http://www.Global.MitsubishiElectric.com>



Fig. 1 HG-VA switchgear cabinet

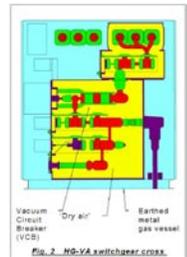


Fig. 2 HG-VA switchgear cross

Hybrid Switchgear series			
Rated voltage (kV)	Type	Rated current (kA)	Rated breaking capacity (kA)
7.2	VCB	10	10
12	VCB	10	10
17.5	VCB	10	10
24	VCB	10	10
36	VCB	10	10
50	VCB	10	10
72	VCB	10	10

Available in : Asia, Japan, etc.

HG-VA switchgear

## Eco-products

EP-8-066

Machines and equipment

switchgear

### Environment-conscious 7.2kV air insulated switchgear

Compared to our company's conventional products, the reduction of 45% in volume and that of 30% in weight have been achieved, as well as a 20% reduction of discharge of the CO<sub>2</sub> gas which is a source of global warming. Taking account of 3R environmental items, namely "Reduction of hazardous substance", "Reuse of waste", and "Recycling of resource", the ECO (halogen-free) wire and the non-vinyl chloride materials were used to reduce the hazardous substances. The use of weld-free frame enables compartments to be reused. In addition, easy classification on scrapping has being promoted by releasing documents in which recycle and waste processes of materials used for switchgear are described.

- **Energy Saving:** Electricity loss was reduced by optimum placement of the conductors. Multi-function relays were used; the control power was lowered by wire-saving.
- **Resource Saving:** Downsizing and weight lightening (45% in volume and 30% in weight in comparison with the convention)
- **Elimination of harmful chemical substances:** Substitution of vinyl chloride products (halogen-free)

#### TOSHIBA CORPORATION

#### Social Infrastructure Systems Company

1-1, Shibaura 1-chome, Minato-ku Tokyo 105-8001, Japan

Tel Fax

E-mail

URL <http://www3.toshiba.co.jp/snis/>



Available in : Japan

type:VUHE type, Circuit breaker 2 stage feeder panel

## Eco-products

EP-8-067

Machines and equipment

switchgear

### Global environment-conscious 24/36kV solid-insulated switchgear

This product is cubicle-type solid-insulated switchgear (SIS) not using sulfur hexafluoride (SF<sub>6</sub>) gas. This new type of switchgear is epoxy resin-molded insulation SIS. It was improved to be smaller, lighter, and better environment-conscious product than the conventional gas-insulated switchgear(C-GIS). "SF<sub>6</sub> gas-free" has realized by using vacuum valves for circuit breaker and disconnecting switch, and high-performance epoxy resin in making the main circuit and the conductor. High performance and downsizing has realized with the use of balance type electromagnetic mechanism for operating device of the circuit breaker and the disconnecting switch to reduce the number of the parts as well as energy for switching operation.

- **Energy Saving:** Downsized product reduces electrification loss. Adoption of high speed molding reduces energy for producing products.
- **Resource Saving:** Weight is 55% lighter and volume is 37% reduced for one set of receiving board of 24kV, comparing to those of the board of conventional machine.

#### TOSHIBA CORPORATION Social Infrastructure Systems Company

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Global warming



Degradable



Solid insulated switchgear

## Eco-products

EP-8-068

Machines and equipment

switchgear

### 7.2/3.6kV Multi-Swichgear

High-voltage switchgear for the steady supply of electricity at 6,000 volts to offices from power lines.

We succeeded in reducing installation space by one-third through employing advanced insulation technology, resulting in a lighter product (66% compared with previous models) and concomitant resource savings.

The use of a modular design also enables the sharing of materials, greater reusability, and greater transportability.

#### Hitachi., Ltd.

Akihabara Daibiru Building, 18-13 Soto-Kanda 1-chome, Chiyoda-ku, Tokyo 101-8618, Japan  
Tel Fax  
E-mail  
URL <http://www.hitachi.com/>



Resource



Energy saving



Super-Compact 7.2 kV Switchgear

## Eco-products

EP-8-069

Machines and equipment

wiring devices and supplies

### Energy and Material Saving Wire-Electrical Discharge Machine

Won the Innovation Prize at the 2006 Japan Invention and Innovation Awards sponsored by the Japan Institute of Invention and Innovation.

This wire-electrical discharge machine is a machine tool that utilizes the discharge phenomenon to precision-process metals using electrode wire that is the size of a strand of hair.

-----<< Material >>-----

Preventing wire electrode breaks improves processing yields and reduces wire electrode waste

-----<< Energy >>-----

Eliminating wire electrode breaks and controlling energy to match processing variation cuts processing time in half (doubling energy efficiency)

-----<< Toxicity >>-----

Uses screws and steel sheeting with hexavalent chromium-free coating; CFC substitute used to cool the processing fluid

#### Mitsubishi Electric Corporation

2-7-3 Marunouchi Chiyoda-ku, Tokyo 100-8310, Japan  
Tel 81-3-3218-9024 Fax 81-3-3218-2465  
E-mail eqd.eco@pj.MitsubishiElectric.co.jp  
URL <http://www.Global.MitsubishiElectric.com>



Available in : Asia, America, EU and Japan, etc.

FA20PS Advance

## Eco-products

EP-8-070

Machines and equipment

analytical instruments

### GC-2014, energy-saving type high-performance Gas Chromatograph

"GC-2014" is a gas chromatograph considering high performance and environmental loading.

By the following improvement:

- (a) use of a transformer-less switching power supply,
- (b) miniaturization of parts by using high performance, high-density integrated circuit, and
- (c) decrease in the number of parts, the energy consumption in the stand-by condition was reduced by 68% of that for the previous-type instrument.



#### Shimadzu Corporation

1, Nishinokyo-kuwabara-cho, Nakagyo-ku, Kyoto-shi, Kyoto 604-8511, Japan  
Tel 81-75-823-1113 Fax 81-75-823-2062  
E-mail kksitu@group.shimadzu.co.jp  
URL <http://www.shimadzu.co.jp>

Gas Chromatograph GC-2014

## Eco-products

EP-8-071

Machines and equipment

interventional angiography system

### Environmentally conscious Interventional Angiography System for medical institution

Interventional Angiography System of our company has become the apparatus which is friendly to patients, by adding the following improvements and by adopting a company's original filter of new type.

- **Energy Saving:** The power consumption of examination per one patient was reduced by 20% owing to the optimization of design and the shortening of examination time.
- **Resource Saving:** The weight per one patient examination was reduced by 20% owing to the same reason as above.
- **Elimination of harmful chemical substances:** Harmful substances were reduced by 30% owing to the abolishment of FRP covers and the extensive use of Pb-free solder.

#### TOSHIBA MEDICAL SYSTEMS CORPORATION

1385, Shimoishigami, Otawara-Shi, Tochigi 324-8550, Japan  
 Tel 81-287-26-6280 Fax 81-287-26-6053  
 E-mail [mutsuo.innami@toshiba.co.jp](mailto:mutsuo.innami@toshiba.co.jp)  
 URL <http://www.toshiba-medical.co.jp/tmd/>



Interventional Angiography System (Infinix CF-i)

## Eco-products

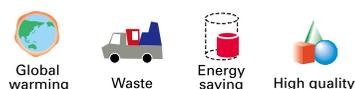
EP-8-072

Machines and equipment

whole-body x-ray ct system

### Whole-body X-ray CT system ECLOS

By increasing the number of the slices which our X-ray CT system scans, the consumption electric power per slice has been reduced to 1/2-1/4 during scanning. The weight of X-ray CT system is about 10 % reduced.



Whole-body X-ray CT system ECLOS

#### Hitachi Medical Corporation

Akihabara UDX, 4-14-1, Soto-Kanda, Chiyoda-ku, Tokyo 101-0021, Japan  
 Tel 81-3-3526-8880 Fax 81-3-3526-8810  
 E-mail  
 URL <http://www.hitachi-medical.co.jp/>

## Eco-products

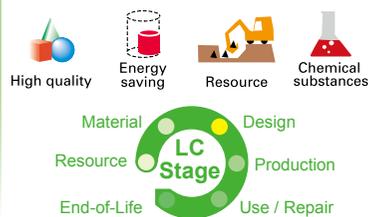
EP-8-073

Machines and equipment

medical electronic instrument and equipment

### Ultrasound Diagnostic Scanner

Our company announces "We defend human happiness and the earth environment" as our environmental policy over development, production, and sales of medical equipments. This ultrasound diagnostic scanner "EUB-8500" has reduced the unit size adopting large scale FPGA and ASIC, cut weight by 19%, and decreased the power consumption by 17%. In addition, only Pb-free solder is used as are all other products in our company.



#### HITACHI MEDICAL CORPORATION

Akihabara UDX, 4-14-1, Soto-Kanda, Chiyoda-ku, Tokyo 101-0021, Japan  
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E-mail  
URL <http://www.hitachi-medical.co.jp/>



Ultrasound Diagnostic Scanner EUB-8500

## Eco-products

EP-8-074

Machines and equipment

biochemical analyzer

### Environmentally conscious Biochemical Analyzer for medical institution

The workflow in the inspection room was optimized, and the total measuring time of the immunoassay and the biochemical measurement was shortened. These results contribute to the energy saving and the resource saving. The product is a clinical chemistry auto-analyzer which was made in consideration of the global environment and patients.

- **Energy Saving:** The 24 hour operation became possible, and the inspection waiting time of the urgent specimen was shortened from the conventional 10 minutes at the longest to 30 seconds. The power consumption per one specimen inspection was reduced.
- **Resource Saving:** The technology of reducing the carry over between samples halved the consumption of blood-collecting vessels.
- **Elimination of harmful chemical substances:** The consumption of chemical reagent was reduced by 33% owing to the reduction of minimum reaction quantity. Lead-free solder was extensively applied.

#### TOSHIBA MEDICAL SYSTEMS CORPORATION

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URL <http://www.toshiba-medical.co.jp/tmd/>



Biochemical Analyzer TBA-c16000

## Eco-products

EP-8-075

Machines and equipment

computed tomography system

### Environmentally conscious X-ray CT Systems for medical institution

The X-ray CT System "AsteionTM/VP" realized drastic reduction of the radiation exposure while maintaining high picture quality. Moreover, it offers to the operator a friendly environment where he can concentrate on the inspection by plain operation.

In addition, this X-ray CT System is equipped with a function to control the consumption of the contrast media by informing the timing of photography which is optimum in the imaging inspection. The function serves also to avoid the patient's excessive burden. Owing to this function as well as the function to reduce the radiation exposure, the system has become friendly to patient.

- **Energy Saving:** By developing a new unit and a new picture-reformation method, the time-of-use of the system came to be a half and power consumption per one patient inspection reduced to 51%.
- **Resource Saving:** The development of a new unit brought a 34% weight reduction.
- **Elimination of harmful chemical substances:** The lead used for the shielding was minimized. Lead-free solder was applied to the printed board.

#### TOSHIBA MEDICAL SYSTEMS CORPORATION

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Waste



Degradable



X-ray CT Systems Asteion(TSX-021B)

## Eco-products

EP-8-076

Machines and equipment

computed tomography system

### Environmentally conscious X-ray CT Systems for medical institution

The X-ray computed tomography device "Aquilion 64" is the apparatus which makes the image of the cross-section of human body using X-ray. The device can collect 64 sheets of section image in one round, and the highest revolution speed is 0.35 second. Since the photography of 64 sheets is possible for such a short time, it is usable for the inspection of the heart which is working. As a result, the clinical value of the device has increased drastically.

- **Energy Saving:** A 60% saving was achieved by developing the new model unit and by increasing the processing speed of the reconstruction of image.
- **Resource Saving:** A 20% saving was achieved by the adoption of the non-contact communication technology. The digitizing of information and the promotion of the sharing of information contribute to X-ray film-less.
- **Elimination of harmful chemical substances:** Use of the smallest shielding lead, applying of lead-free solder to printed board, etc.

The product won a prize at the 4th Eco-Products Awards in Japan (The prize was given to X-ray CT diagnostic apparatus / X-ray tube / CCD camera for new generation environment ) .

#### TOSHIBA MEDICAL SYSTEMS CORPORATION

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Waste



Degradable



X-ray CT Systems Aquilion(TSX-101A)

## Eco-products

EP-8-077

Machines and equipment

diagnostic ultrasound system

### Environmentally conscious Ultrasound System for medical institution

"Xario" is ultrasonic diagnostic equipment, which emits a signal of supersonic wave in vivo, and gets the image of in vivo by receiving the reflected signal from the organization. The function and performance necessary for a high-grade machine is held in a compact size body. It can provide a precise diagnosis not only in the inspection room but also on the bed in the patient's room. It is effective for the diagnosis of heart and abdomen, mammary glands, thyroid gland, thyroid grand, baby in the stomach, etc.

- **Energy Saving:** A 33 % saving was achieved by adopting a high-speed CPU, and by shortening of the boot-time.
- **Resource Saving:** A 31% reduction in volume and a 25% reduction in weight were achieved by adopting a large-scale FGPA (Field Programmable Gate Array) and the structural design method, and by integrating functions.
- **Elimination of harmful chemical substances:** The achieved items are the abolition of the vinyl chloride cover and the use of Pb-free solder for the printed board.

#### TOSHIBA MEDICAL SYSYSTEMS CORPORATION

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 URL <http://www.toshiba-medical.co.jp/tmd/>



Waste



Degradable



Diagnostic Ultrasound Systems XARIO SSA-660A

## Eco-products

EP-8-078

Machines and equipment

magnetic resonance imaging systems

### Environmentally conscious MRI Systems for medical institution

MRI apparatus "EXCELART Vantage" is a machine to do image processing of the profile of human body by using the magnetic resonance phenomenon, and the latest extra-high speed photography and the contrast medium-less photography are possible. It is a patient-friendly medical apparatus owing to our company's original noise-silencing mechanism which can remove 90% of noise and the enhancement of a feeling of release with the shortening of the axis.

- **Energy Saving:** The power consumption of inspection per one patient was reduced by 58% owing to the development of high-speed photographic method, the optimization of design, etc.
- **Resource Saving:** The weight per one patient inspection was reduced by 56% by developing a short-axis magnet mount.
- **Elimination of harmful chemical substances:** As found from the following items: Reuse of exchangeable parts; Decrease of the waste due to the extension of product life; Application of Pb-free solder to the printed board; A 20% weight reduction of the FRP (Fiber Reinforced Plastics) cover of the mount, we are promoting the reduction of environment-related substances.

#### TOSHIBA MEDICAL SYSYSTEMS CORPORATION

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 URL <http://www.toshiba-medical.co.jp/tmd/>



Waste



Degradable



MRI Systems Vantage(MRT-2003)

## Eco-products

EP-8-079

Machines and equipment

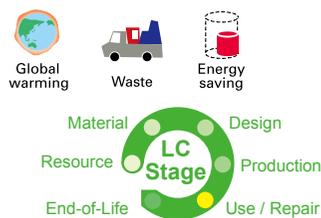
electronic microscopes

### Scanning Electron Microscope SU-1500

Width of the main unit has been reduced by 20% (by comparison Hitachi Scanning Electron Microscope S-3000N ) so that the microscope can be installed in more confined places than before. The specimen chamber and stage have been designed to accommodate samples as large as 153mm in diameter. Imaging can be completed on a sample that is 60mm in height at the analytical working distance of 15mm. Flexibility for sample size is a key feature of the SU-1500. To assist inexperienced users, the SU-1500 includes an on-screen operation guide that guides the user step by step through the complete imaging process - from vacuum mode selection to taking a picture. This unique feature allows users of all experience levels to quickly obtain high quality images.

#### Hitachi High-Technologies Corporation

24-14, Nishi-shimbashi, 1-chome, Minatoku Tokyo 105-8717, Japan  
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E-mail  
URL [http://www.hitachi-hitec.com/global/em/sem/sem\\_index.html](http://www.hitachi-hitec.com/global/em/sem/sem_index.html)



SU-1500

## Eco-products

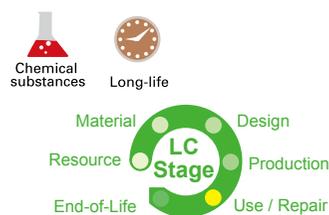
EP-8-080

Machines and equipment

electronic microscopes

### CD-Measurement SEM CG4000

- Product function:  
CD-SEM(Electron microscope for measuring semiconductor devices)
- Development Concept  
Improved resolution and throughput



#### Hitachi High-Technologies Corporation

24-14, Nishi-shimbashi, 1-chome, Minatoku Tokyo 105-8717, Japan  
Tel 81-3-3504-7111 Fax 81-3-3504-7123  
E-mail  
URL <http://www.hitachi-hitec.com/global/>



CG4000

## Eco-products

EP-8-081

Machines and equipment

numerical control equipment

### Advanced New Standard MITSUBISHI CNC 70series

Developed with a view to "MET" profile, Narrows down the functions required for CNC, reduced the number of parts and thereby realized 2.47 in the Mitsubishi Electric's environment load factor index.

(Comparison with CNC 60Series manufactured in year of 2001.)

-----<< M : Material >>-----

For less-wiring and product downsizing, the control unit body and wiring part are unified.

Volume ratio: Approximately 30% reduction/Weight ratio: Approximately 30% reduction.

-----<< E : Energy >>-----

While enhancing the product quality with the newly developed CNC dedicated device (ASIC), energy saving is realized by eliminating the cooling fan. In addition, CRT monitor is changed to the full-color LCD to reduce the power consumption by 60%.

-----<< T : Toxicity >>-----

Reduced the substances prohibited in the EU's RoHS derective instead that CNC is not within the scope.

#### Mitsubishi Electric Corporation

2-7-3 Marunouchi Chiyoda-ku, Tokyo 100-8310, Japan  
Tel 81-3-3218-9024 Fax 81-3-3218-2465  
E-mail eqd.eco@pj.MitsubishiElectric.co.jp  
URL <http://www.Global.MitsubishiElectric.com>



Available in : worldwide except controlled region

Mitsubishi Electric numerical control equipment 70 series

## Eco-products

EP-8-082

Machines and equipment

electric measuring instruments

### Energy Measuring Unit " Eco Monitor Pro "

"EcoMonitor Pro" can support your energy saving activity. It is capable of accurately measuring the electric consumption of each facility or assembling line. The line-up is for 1,3,5, and 7 circuits. It can be connected to our field-network, CC-Link.

Following is its environmental performance features compared to the previous model (per 1 circuit).

-----<< M : Material >>-----

45% reduction of resource consumption and non-recycling resource

-----<< E : Energy >>-----

51% reduction of electricity consumption when used and 82% reduction of electricity consumption on standby

-----<< T : Toxicity >>-----

Compliance with EU's RoHS Directive

#### Mitsubishi Electric Corporation

2-7-3 Marunouchi Chiyoda-ku, Tokyo 100-8310, Japan  
Tel 81-3-3218-9024 Fax 81-3-3218-2465  
E-mail eqd.eco@pj.MitsubishiElectric.co.jp  
URL <http://www.Global.MitsubishiElectric.com>



Available in : worldwide except controlled region

EMU2 - RD7 - B

## Eco-products

EP-8-083

Machines and equipment

electric measuring instruments

### Breaker with Energy Measuring function and Display

MDU breaker ( = a breaker with measuring function and display ) is capable of measuring, displaying and transmitting circuit information with having VT and CT inside of the body and Measuring Display Unit outside of the body. Wide-range line-up of MDU breakers and capability of connecting to our field network, CC-Link, can contribute to your saving energy activity.

Following is its features in environmental conscious design compared to the previous MDU breaker.

-----<< M : Material >>-----

31% reduction of resource consumption (MDU part only)

-----<< E : Energy >>-----

37% reduction of electricity consumption (MDU part only)

-----<< T : Toxicity >>-----

Compliance with RoHS

#### Mitsubishi Electric Corporation

2-7-3 Marunouchi Chiyoda-ku, Tokyo 100-8310, Japan  
Tel 81-3-3218-9024 Fax 81-3-3218-2465  
E-mail eqd.eco@pj.MitsubishiElectric.co.jp  
URL <http://www.Global.MitsubishiElectric.com>

Available in : worldwide ( limited to MCCB with MDU )



NF400-SEP with MDU

## Eco-products

EP-8-084

Machines and equipment

electric measuring instruments

### Energy saving data collecting server " EcoServer II "

"Ecoserver II " collects energy data from MDU breaker ( = a breaker with energy measuring unit and display ) and EcoMonitorPro ( = Energy measuring equipment ) and transmit the data to the Internet/ Intranet through Ethernet(10BASE-T). The transmitted data is graphed and can be seen on the Web.

Following is its features in environmental conscious design compared to the previous model.

-----<< M : Material >>-----

66% reduction of resource consumption

-----<< E : Energy >>-----

54% reduction of electricity consumption

#### Mitsubishi Electric Corporation

2-7-3 Marunouchi Chiyoda-ku, Tokyo 100-8310, Japan  
Tel 81-3-3218-9024 Fax 81-3-3218-2465  
E-mail eqd.eco@pj.MitsubishiElectric.co.jp  
URL <http://www.Global.MitsubishiElectric.com>

Available in : Japan only



MES-255BR-A

## Eco-products

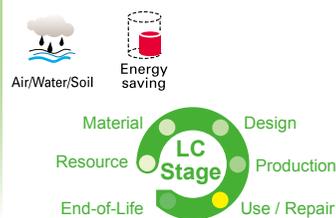
EP-8-085

Machines and equipment

electric railcars, with motive power

### Monorail System

Railways are a complex combination of various parts including the trains, track, track switches, substations, substation supervising system, signals, communication systems, operation control systems, etc. Hitachi has four decades of experience supplying all of these products individually and as a fully integrated monorail system to meet the demands of urban environments.



#### Hitachi, Ltd.

Akihabara Daibiru Building, 18-13 Soto-Kanda 1-chome, Chiyoda-ku, Tokyo 101-8618, Japan  
Tel Fax  
E-mail  
URL <http://www.hitachi-rail.com/>



Monorail System

## Eco-products

EP-8-086

Machines and equipment

marine engines

### Environmental-friendly large two-stroke diesel engine

This next generation computerized diesel engine enabled flexible control according to the situation by changing the control method of fuel injection, opening and closing of exhaust valve, and cylinder lubricating oil injection from conventional mechanical control to electronic control. This reduced NO<sub>x</sub> emission discharged during a sailing in port area as well as fuel consumption and CO<sub>2</sub> emission during an ocean voyage. Besides, it enabled to cut down on oil consumption and control the emission of particulate matter.



#### KAWASAKI HEAVY INDUSTRIES, LTD.

1-1, Higashikawasaki-cho 3-chome, Chuo-ku, Kobe 650-8670, Japan  
Tel 81-78-682-5343 Fax 81-78-682-5558  
E-mail [yoshida\\_taka@khi.co.jp](mailto:yoshida_taka@khi.co.jp)  
URL <http://www.khi.co.jp/>



KAWASAKI MAN B&W 7S60ME-C Engine

## Eco-products

EP-8-087

Machines and equipment

precision measuring machines and instruments

### F-7000 Fluorescence Spectrophotometer

Designed to Meet Your Needs for High-Quality Analytical Instrumentation.

Hitachi's Superior Fluorescence Technology has created a new generation of Fluorescence Spectrophotometers.

#### Products Features

- High S/N Ratio(using Raman band of water) : S/N 800 RMS, equivalent to S/N 250 peak to peak
- Ultra-Fast Scanning : 60,000nm/min
- Compact Design : approx. 2/3 the size of the F-4500
- Multiple Accessories : a wide range of accessories accommodating various applications

#### Environmental features (compared to F-4500)

- Resource reduction (Compact Design) : approx. 2/3 the size of the F-4500
- Ease of decomposition : 23% reduction of screws facilitates dismantling
- Energy efficiency : 30% reduction of motor's electric power consumption

#### Hitachi High-Technologies Corporation

24-14, Nishi-shimbashi, 1-chome, Minatoku Tokyo 105-8717, Japan  
Tel 81-3-3504-7111 Fax 81-3-3504-7123  
E-mail  
URL [http://www.hitachi-hitec.com/global/science/fl/fl\\_index.html](http://www.hitachi-hitec.com/global/science/fl/fl_index.html)



F-7000

## Eco-products

EP-8-088

Machines and equipment

pollution measuring instruments

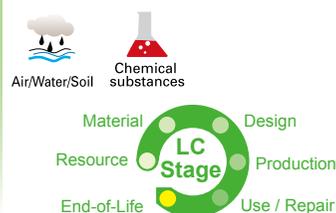
### Online Dioxin Precursor Monitor CP-2000

The CP-2000 Dioxin Precursor Monitor is an online real-time monitor of chlorophenol, which is one of the dioxin precursors (intermediates of dioxin formation). It is known that chlorophenol and dioxin have a high correlation of concentration in flue gas. The chlorophenols in the flue gas are ionized by atmospheric-pressure chemical-ionization (APCI) using needle electrode corona-discharge. Ionized chlorophenols are detected by a three-dimensional quadrupole mass analyzer (3DQMS).

This monitor can measure in high sensitive up to a few tens of ppt levels of chlorophenols in flue gas. And the concentration is automatically calibrated under of the changes in flue gas components and the combustion conditions by continuous automatic calibration. So it can be stable measurement. The CP-2000 can continuously monitor transient emission of chlorophenol, so that the parameters of the incinerator and the combustion conditions can be controlled to reduce the emission of dioxin. It was awarded "Nikkei Earth Environment Technical Award in 2000" and "R&D 100 Award in 2001"

#### Hitachi High-Tech Trading Corporation

24-14, Nishi-shimbashi, 1-chome, Minatoku Tokyo 105-8717, Japan  
Tel 81-3-3504-7311 Fax 81-3-3504-7363  
E-mail [keisoku@nst.hitachi-hitec.com](mailto:keisoku@nst.hitachi-hitec.com)  
URL <http://www.hitachi-hitec-trading.com/english/index.html>



CP-2000

## Eco-products

EP-8-089

Machines and equipment

measuring instruments

### Save Energy "MT8820B Radio Communication Analyzer"

The MT8820B is a measuring instrument used for inspection and adjustment of mobile phones at an assembly plant. The instrument must be compact enough for use on a production line. Conventional models release internal heat by taking in air from one side and discharging it from the other, requiring space around the instrument.

The MT8820B, however, exhausts air from the back to help make the entire process more space-efficient. To this end, we first wanted a power-saving design to curb the generation of internal heat. For example, we innovated circuits and parts of the RF converter, which typically consumes the most power, and dramatically reduce the number of parts. With such improvements, we cut power consumption to two-thirds that of a conventional model. We also improved upon conventional models by designing the instrument to keep internal air resistance to an absolute minimum and decreased the number of cooling fans. This cut noise by 5-10dB, making operation quieter.



Global warming



Energy saving



MT8820B Radio Communication Analyzer

#### Anritsu Corporation

5-1-1 Onna, Atsugi-shi, Kanagawa 243-8555, Japan  
Tel 81-46-223-1111 Fax  
E-mail  
URL <http://www.anritsu.com>

## Eco-products

EP-8-090

Machines and equipment

manometers, flowmeters and quantity gauges parts

### Gasoline Pump Dispenser

Description of Products

Gasoline meter for gasoline stations.

Development Concept

Light weighting

Electrical power saving



Resource



Energy saving



AB26LA-T

#### Tokico Technology, Ltd.

3-9-27 Tsurumi Chuo, Tsurumi-ku, Yokohama City, Kanagawa  
Prefecture 230-0051, Japan  
Tel 81-45-504-9720 Fax  
E-mail  
URL

## Eco-products

EP-8-091

Machines and equipment

measuring instruments

### Realizing the Functions of Two Boards with One "MP1800A Signal Quality Analyzer"

Today, as optical fiber cables are routed to households, high-speed data transmission devices are ever more essential to convenient communication. The MP1800A measuring instrument evaluates the performance of such devices. By greatly downsizing the phase shifting module and employing highly integrated devices, we have successfully integrated send-receive functions on one board, rather than using two, as previously required. As a result, the MP1800A is just 70.0% of the size, 66.7% of the weight and consumes only 70.8% of the power of a conventional equivalent model.

The MP1800A has six board slots implemented with measuring modules, enabling it to evaluate multiple devices. Another of its major features is its ability to be configured to best suit a user's needs, because the module system is adopted.

#### Anritsu Corporation

5-1-1 Onna, Atsugi-shi, Kanagawa 243-8555, Japan  
Tel 81-46-223-1111 Fax  
E-mail  
URL <http://www.anritsu.com>



Global warming



Energy saving



MP1800A Signal Quality Analyzer

## Eco-products

EP-8-092

Machines and equipment

power transformers

### Energy Saving Inverter for buildings and factories, fan and pump applications

Received Honorable award at the 2006 Electrical Manufacturers Awards sponsored by the Japan Electrical Manufacturers' Association

Using inverter for fan or pump application is more efficient and saves more energy than conventional flow rate control using damper or valve or motor on-off control.

-----<< Material >>-----

Designed to extend the life span of major consumables, such as capacitors and cooling fans, for ten years (design life of ten years) to effectively which helps to save resources.

-----<< Energy >>-----

By using an inverter for fan or pump application and control the flow rate by changing motor speed, it achieves a higher level of energy saving compared to the flow rate control using damper or valve or motor on-off control. Optimal excitation control (a distinct function in FREQROL-F700) makes more energy saving compared to conventional V/f control.

-----<< Toxicity >>-----

Comply with the EU RoHS Directive to use alternatives to all six hazardous substances.

#### Mitsubishi Electric Corporation

2-7-3 Marunouchi Chiyoda-ku, Tokyo 100-8310, Japan  
Tel 81-3-3218-9024 Fax 81-3-3218-2465  
E-mail [eqd.eco@pj.MitsubishiElectric.co.jp](mailto:eqd.eco@pj.MitsubishiElectric.co.jp)  
URL <http://www.Global.MitsubishiElectric.com>



Energy saving



Global warming



High quality



Long-life



Inverter FREQROL-F700

Available in : Asia, Europe, America, Japan, etc.

## Eco-products

EP-8-093

Machines and equipment

power transformers

### HIVERTER-UP201i(UNIPARA)

#### Description of Products

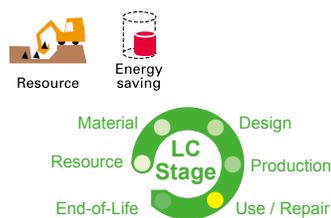
UPS protects important equipment such as facilities of data centers against instantaneous power failure. Depending on the scale of equipment, a maximum of 6 UPS's can be connected in parallel to provide the power supply capacity.

#### Development Concept

Reduction of environmental load and economy through high efficiency, compact and lightweight. High expandability based on unit parallel design.

#### Hitachi, Ltd.

5-2-1 Ohmika, Hitachi-shi, Ibaraki-ken 319-1121, Japan  
 Tel Fax  
 E-mail  
 URL <http://www.hitachi.co.jp/Div/ise/upshp/> (Japanese Only)



HIVERTER-UP201i(UNIPARA)

## Eco-products

EP-8-094

Machines and equipment

garbage disposer for business use

### Eco-champion, a garbage disposer for business use

This product is a garbage processing machine for business use. The machine contributes to the circulating-type society in which the garbage (such as the residue of food processing and the leftovers of meal) is decomposed by bio (microorganism) and then the decomposition product will be recycled as organic fertilizer.

- (1) The process from the charge of garbage to the discharge of compost (fertilizer) is full-automatic, and the volume of the charged garbage reduced to 15-20% after hours running.
- (2) The disposal capacity per day is 4 kinds: 50kg, 100kg, 150kg and 200kg.
- (3) Inverter control realized energy saving operation. (Power consumption of 100kg type disposer is 81kwh/day)
- (4) Owing to the space-saving machine design, setting is easy even in the business-use kitchen.  
 (50 kg type: W1200mmxD760mmxH1405mm).
- (5) The installed deodorizer controlled the generation of bad smell.
- (6) It is a newly registered product of the JAFRC standard for performance.



ECOCHAMPION (MHC-100CD)

#### BRIDGESTONE PLANT ENGINEERING CO.,LTD.

3-1-1, Ogawahigashi-cho, Kodaira-shi, Tokyo 187-8531, Japan  
 Tel 81-42-342-6340 Fax 81-42-344-0991  
 E-mail  
 URL

## Eco-products

EP-8-095

Machines and equipment

purifying system

### A new agitating and purifying system using the density current for the enclosed water area

This is the apparatus to improve the quality of an enclosed waters by flowing it artificially, and thereby promoting the restraint of abnormal propagation of phytoplankton and the organic dissolution by benthos. By use of a pipe vertically inserted in water, the apparatus sucks higher temperature water from the top and lower temperature water from the bottom, mixes them together at the middle depth position, and discharges the mixed water.

A density current is formed by the discharged water and it diffuses horizontally up to the wide range. Density currents come about both in the surface layer and the bottom layer. By keeping such a condition for a long period, the temperature of the surface layer lowers, the discontinuity layer relaxes, and the improvement of oxygen poverty proceeds.

As a result, the activity of the organic dissolution is promoted, and the purification and improvement of the waters occurs. Suitable places to be installed are enclosed marine bay, culture sea area, lakes, dam, hollow after dredging, harbor, etc.

#### Nakashima Propeller Co., Ltd.

688-1 Joto-kitagata, Okayama Japan 709-0625, Japan  
Tel 81-86-279-5111 Fax 81-86-279-3107  
E-mail npcwebmaster@nakashima.co.jp  
URL <http://www.nakashima.co.jp/>

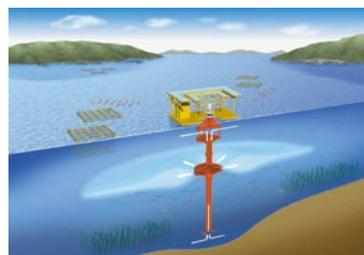


Image figure of Density Current Generator

## Eco-products

EP-8-096

Machines and equipment

biotechnology rest room

### NO smell! NO water! New biotechnology rest room "Suntool" will solve excreta problem.

Water is a root of the life, and we have been made the best use of by the existence of water. However, water has been uselessly used for the rest room's flush water. Moreover, the living drainage that goes out of the house is estimated to be about 250 liters a day a person though it is known to become an origin where living drainage makes nature dirty. In the amount of the dirt of living drainage, (amount of BOD), it becomes about 43g a day a person, and the about 30% is the one because of the rest room drain. On that occasion, biotechnology rest room "Suntool" that doesn't use water can decrease the pollution of an important water resource. The most elements of excreta are "moisture". Moisture is adsorbed by sawdust, and then excreta are mostly resolved to carbon dioxide gas and water gas (moisture) without smell by microorganism's fermentation in aerobic condition.

Biotechnology rest room "Suntool" uses a microorganism that adhered to the excreta from human's inside of the body. Therefore as many as it will be used, the microorganism will grow vigorously. The excreta finally become the remainders of the inorganic component and are adsorbed by sawdust.

#### Tokyo Suntool Co., Ltd.

3-8-12 Minamiogikubo, Suginami-ku, Tokyo 167-0052, Japan  
Tel 81-50-5531-1136 Fax 81-3-3332-3187  
E-mail iwao@suntool.jp  
URL <http://www.suntool.jp>



Available in : World wide

Biotechnology rest room "Suntool" Type:LOGW-60ST

## Eco-products

EP-8-097

Machines and equipment

vacuum degassing tower

### MU REACTOR, a Stripping Tower for expelling O<sub>2</sub> & CO<sub>2</sub> gases

MU REACTOR, a stripping tower, is developed to expel dissolved oxygen and CO<sub>2</sub> gases melted in the water by stripping process, with the help of vacuum. Our device has many advantages compared to the conventional process, i.e., smaller in equipment size, almost nil of maintenance costs, the tower made of FRP which is competitive in price-wise to the conventional packed towers fabricated by rubber-lined special steel plates. PERFORMANCE: First unit is presently in operation for table salt manufacturing, treating brine with 20% salt content. Rated treatment capacity of the device is 150~250 m<sup>3</sup> per hour. Suppose 5~10 ppm. of dissolved oxygen and 100~200 ppm. of CO<sub>2</sub> gas being melted in the water, after treatment by MU REACTOR, dissolved oxygen will be reduced to 1 ppm. and CO<sub>2</sub> 20 ppm. only. Static liquid mixer, MU MIXER® installed inside the tower, helps brine to flow smoothly not to stagnate, which eventually contribute to substantial saving of maintenance costs thanks to no blocking on internals in the tower.

#### MU Company Ltd.

18-8, Uenokouen, Taito-ku, Tokyo 110-0007, Japan  
 Tel 81-3-3828-7090 Fax 81-3-3823-2890  
 E-mail 0325muc@mu-company.com  
 URL <http://www.mu-company.com/>



Resource



Mu Static Mixing Technology



Stripping Tower for O<sub>2</sub> and CO<sub>2</sub> gases removal

## Eco-products

EP-8-098

Machines and equipment

air conditioning unit

### ECO Green Aircon for Building and Civil Engineering

An ECO / Energy Saving Air conditioning unit for Cooling and Ventilation

ECO COOL represent a Green technology that offer a cost effective solution to satisfying 100% fresh air and Cooling for many applications

Enabling dry cooling without compressor , ECO COOL achieve heat recovery using little energy to remove latent load from hot air , resulting in Ultra high EERs ( C.O.P.) Substantial energy savings of over 50% compared to traditional system .

Instead of circulating hot and moist air , now you have a solution using only 750 watts for 6 tons optimum cooling . High volume ventilation & sensible cooling at the same time without adding humidity .

ECO COOL can be used as a pre cooler for intake air that can reduces your existing air conditioning system power consumption by 30%- 50% .

ECO COOL ( dry cooling ) helps provide substantial amount of fresh outdoor air to meet ASHARE standard 62-89 requirements , while keeping energy cost conservative .

Green innovation is ETHA Engineering philosophy - To pursue the leading edge cooling technology in harmony with the natural environment .

#### ETHA Engineering Pte Ltd

4012 Ang Mo Kio Avenue 10, #07-02 TECHplace 1 569628, Singapore  
 Tel 65-6553-3140 Fax 65-6553-3142  
 E-mail [ben@etha.com.sg](mailto:ben@etha.com.sg)  
 URL <http://www.etha.sg>



Global warming



Resource



Purification



Available in : Singapore

Eco Cool 1200

## Eco-products

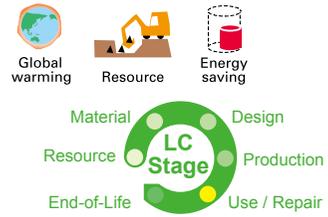
EP-8-099

Machines and equipment

medical electronic instrument and equipment

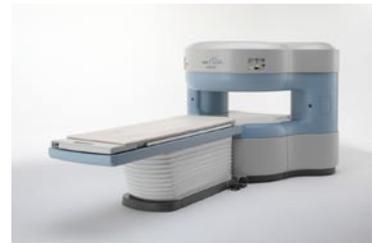
### MR Imaging System

1. Superconductor in a typical MRI imaging equipment consumes 8 KW of electricity in the helium cooling unit. This system uses a permanent magnet instead, which does not need the magnetic field generation to consume energy so that running costs and an installation space are eventually reduced .
2. No need for helium's replacement, cold heads replacement, and magnetic circuit maintenance.
3. NEOJIUMU magnets, iron, aluminum used in this equipment can be reused/recycled after demagnetizing and do not generate wastes.



#### Hitachi Medical Corporation

Akihabara UDX., 4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, Japan  
 Tel 81-3-3256-8880 Fax 81-3-3256-8810  
 E-mail  
 URL <http://www.hitachi-medical.co.jp/>



AIRIS Elite

## Eco-products

EP-8-100

Machines and equipment

hot-water supply system

### "Eco Cute" Water Heater Using Natural Refrigerant for Large-Capacity institution

It is jointly developed with Tokyo Electric Power Company, Inc. and the Kansai Electric Power Company, inc.

-----<< M : Material >>-----

Dractically made compact from our current model (CHA-P500CQ-H), reducing approximately 55% of the installation area per unit.

-----<< E : Energy >>-----

Newly developed inverter type CO<sub>2</sub> refrigerant scroll compressor enables it to achieve COP 4.1, which marks industry highest at the point of May 2007, up approximately 70% from our previous model and it reduces approximately 40% of CO<sub>2</sub> emission amount compared to burning type water heater ( the load is estimated as it is used in a middle-sized institution for the welfare of the elderly). CO<sub>2</sub> natural refrigerant has its zero ozone layer depleting coefficient.



#### Mitsubishi Electric Corporation

2-7-3, Marunouchi Chiyoda-ku, Tokyo 100-8310, Japan  
 Tel 81-3-3218-9024 Fax 81-3-3218-2465  
 E-mail [eqd.eco@pj.MitsubishiElectric.co.jp](mailto:eqd.eco@pj.MitsubishiElectric.co.jp)  
 URL <http://www.mitsubishielectric.co.jp/>



QAHV-N560A

Available in : Japan

## Eco-products

EP-9-001

Others

elemental feeds

### Feed grade L-Threonine

Feeds for livestock animals are mainly composed of vegetable ingredients such as corn, wheat, and soybean meal. Most proteins in such vegetable ingredients do not necessarily have the optimal amino acid profile for muscle protein synthesis by animals. The insufficient supply of a certain amino acid may lead not only to inferior growth but also to increased excretion of nitrogen to the environment because of less efficient utilization of amino acids for protein synthesis and the subsequent enhancement in catabolism of amino acids. Supplementation of L-threonine, which is in general the 2nd limiting amino acid in pigs and the 3rd limiting in chickens, can contribute to the reduction of nitrogen excretion from animals to the environment by improving dietary amino acid balance and consequently by improving amino acid utilization efficiency. In addition, because the usage of L-threonine in the feeds can sustain the ideal growth of animals with a less amount of feeds, it helps save the land area for feed crop production.

#### AJINOMOTO CO., INC.

15-1, Kyobashi 1-chome, Chuo-ku, Tokyo 104-8315, Japan  
 Tel 81-3-5250-8140 Fax 81-3-5250-8270  
 E-mail [izuru\\_shinzato@ajinomoto.com](mailto:izuru_shinzato@ajinomoto.com)  
 URL <http://www.ajinomoto.com/aan>



L-Threonine Feed Grade

## Eco-products

EP-9-002

Others

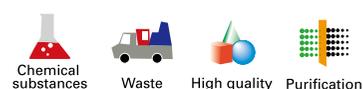
elemental feeds

### Feed grade L-Tryptophan

Feeds for livestock animals are mainly composed of vegetable ingredients such as corn, wheat, and soybean meal. Most proteins in such vegetable ingredients do not necessarily have the optimal amino acid profile for muscle protein synthesis by animals. The insufficient supply of a certain amino acid may lead not only to inferior growth but also to increased excretion of nitrogen to the environment because of less efficient utilization of amino acids for protein synthesis and the subsequent enhancement in catabolism of amino acids. Supplementation of L-tryptophan, which is one of the essential amino acids for pigs and chickens, can contribute to the reduction of nitrogen excretion from animals to the environment by improving dietary amino acid balance and consequently by improving amino acid utilization efficiency. In addition, because the usage of L-tryptophan in the feeds can sustain the ideal growth of animals with a less amount of feeds, it helps save the land area for feed crop production.

#### AJINOMOTO CO., INC.

15-1, Kyobashi 1-chome, Chuo-ku, Tokyo 104-8315, Japan  
 Tel 81-3-5250-8140 Fax 81-3-5250-8270  
 E-mail [izuru\\_shinzato@ajinomoto.com](mailto:izuru_shinzato@ajinomoto.com)  
 URL <http://www.ajinomoto.com/aan>



L-Tryptophan Feed Grade

## Eco-products

EP-9-003

Others

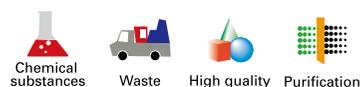
elemental feeds

### Feed grade L-Lysine

Feeds for livestock animals are mainly composed of vegetable ingredients such as corn, wheat, and soybean meal. Most proteins in such vegetable ingredients do not necessarily have the optimal amino acid profile for muscle protein synthesis by animals. The insufficient supply of a certain amino acid may lead not only to inferior growth but also to increased excretion of nitrogen to the environment because of less efficient utilization of amino acids for protein synthesis and the subsequent enhancement in catabolism of amino acids. Supplementation of L-lysine, which is in general the 1st limiting amino acid in pigs and the 2nd limiting in chickens, can contribute to the reduction of nitrogen excretion from animals to the environment by improving dietary amino acid balance and consequently by improving amino acid utilization efficiency. In addition, because the usage of L-lysine in the feeds can sustain the ideal growth of animals with a less amount of feeds, it helps save the land area for feed crop production.

#### AJINOMOTO CO., INC.

15-1, Kyobashi 1-chome, Chuo-ku, Tokyo 104-8315, Japan  
 Tel 81-3-5250-8140 Fax 81-3-5250-8270  
 E-mail [izuru\\_shinzato@ajinomoto.com](mailto:izuru_shinzato@ajinomoto.com)  
 URL <http://www.ajinomoto.com/aa>



L-Lysine Monohydrochloride Feed Grade

## Eco-products

EP-9-004

Others

chemical fertilizers

### PENTAKEEP®

"PENTAKEEP" is a series of fertilizers containing 5-aminolevulinic acid (ALA). ALA is known to have the following physiological effects on plants, making it relevant to environmental fields as well as agriculture.

- 1) ALA promotes plant absorption of fertilizer, so it is expected to lead to the best use of resource and protect against environmental contamination from run-off.
- 2) ALA promotes plant photosynthesis. Its carbon dioxide fixation is expected to contribute to protection of global warming.
- 3) ALA improves salt tolerance of plants. It is expected to contribute to the greening of deserts and alkali soil.

#### COSMO OIL CO., LTD.

Toshiba Bldg., 1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8528, Japan  
 Tel 81-3-3798-3215 Fax 81-3-3798-3216  
 E-mail [ala\\_info@cosmo-oil.co.jp](mailto:ala_info@cosmo-oil.co.jp)  
 URL <http://www.pentakeep-world.com>



Available in : Europe, Japan, Korea

PENTAKEEP®super; Liquid fertilizer to promote photosynthesis

## Eco-products

EP-9-005

Others

office paper products

### Ricoh RECO-View\* Re-writable Sheet/Re-writable IC Tag Sheet

The Ricoh RECO-View Re-writable Sheet and IC Tag Sheet can permit visual images displayed on its surface. Especially, the IC Tag Sheet, as a radio frequency identification (RFID) technology, is a new product, combining IC tags with re-writable capability. Images on the sheets can be easily erased and formed repeatedly up to about 1,000 times with 300 dpi resolution.

With visualization of digital data on re-writable sheets, workflow, cost and environmental impact can be dramatically improved.

In factory and/or warehouse applications, a various management paper forms attached to incoming parts/products can be changed to the re-writable sheets, saving paper and IC chips. (Resources and energy are saved associated to the life cycle of paper and IC chip.)

Additionally, IC tag re-writable sheet can change the workflow, as a part of IT system with RFID technologies.

By checking visual image of the products printed on re-writable sheet with IC tag data, it is possible to reduce human errors, which also result in less environmental impacts.

※ RECO-View is the trademark for Ricoh re-writable media. RE means RE-writable and Re-usable + ECO means economy and ecology.

#### Ricoh Company, Ltd.

Ricoh Building, 8-13-1 Ginza, Chuo-ku, Tokyo 104-8222, Japan  
Tel 81-3-6278-5209 Fax 81-3-3543-9347  
E-mail [envinfo@ricoh.co.jp](mailto:envinfo@ricoh.co.jp)  
URL <http://www.ricoh.com/environment/>



Available in : Asia Pacific Region & Japan

Ricoh RECO-View\* Re-writable Sheet/IC Tag Sheet

## Eco-products

EP-9-006

Others

flexible plastic sheets

### Ricoh RECO-View PR Film and CR Re-writable Film

Clear & fine 400dpi images on the information display of Ricoh RECO-View re-writable film can be easily erased and formed repeatedly up to several hundred times. Additionally, image data is memorized in the magnetic layer or the IC chip, which is retrieval when needed.

Applications are "Loyalty Cards" to show shopping points with other information, "ID Cards/Passes" with or without a photo and an IC chip, and "Hospital Cards" with the next appointment information, etc.

These films can be used ten times more than conventional direct thermal film. A loyalty card generates 0.0241Kg of CO<sub>2</sub> in its life cycle, which is one tenth of direct thermal cards.

The credit card type is reusable, but no information can be displayed on the card, and normal thermal card is just for one time use.

Thus, these films can improve communication with cardholders, while reducing environmental impact.

\* RECO-View is the trademark for Ricoh re-writable media. RE means RE-writable and Re-usable + ECO means economy and ecology.

\*\* PR: Physical Re-writable Film with white opaque image

\*\*\* CR: Chemical Re-Writable Film with black image

#### Ricoh Company, Ltd.

Ricoh Building, 8-13-1 Ginza, Chuo-ku, Tokyo 104-8222, Japan  
Tel 81-3-6278-5209 Fax 81-3-3543-9347  
E-mail [envinfo@ricoh.co.jp](mailto:envinfo@ricoh.co.jp)  
URL <http://www.ricoh.com/environment/>



Available in : Asia Pacific Region & Japan

RECO-View Re-writable PR Film for the loyalty card

## Eco-products

EP-9-007

Others

plastic cards

### "Edy" card using vegetable-based plastic

Vegetable-based plastic - made from biomass such as corn - offers two advantages: it helps to cut consumption of the world's petroleum resources, and when discarded it can be processed in a variety of ways\*. In 2006, Sony adopted this plastic for the manufacture of contactless IC card for the first time in the world. This plastic can be applied to "Edy" pre-paid e-money service, which is an application of Sony's "FeliCa" technology, and so on. This plastic makes contactless IC card more environmental conscious.

\* Material recycling, chemical recycling, incineration, etc.

#### Sony Corporation

1-7-1 Konan Minato-ku, Tokyo 108-0075, Japan  
Tel 81-3-6748-2111 Fax 81-3-6748-2244  
E-mail  
URL <http://www.sony.net>



"Edy" card using vegetable-based plastic

## Eco-products

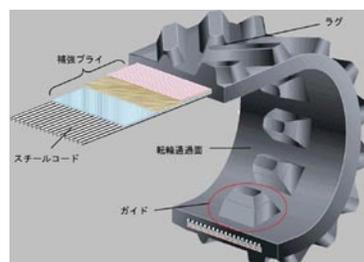
EP-9-008

Others

mechanical rubber products

### Rubber Track

Bridgestone manufactures a wide range of rubber tracks which fit onto the undercarriage of mini-excavators and tracked loaders. One key feature of rubber tracks is that they do not damage the road surface. Also Bridgestone has been developing more eco-friendly products such as non-core-metal rubber tracks which can be recycled more easily than traditional tracks, avoiding the need to separate out the core metals before the recycling process.



#### Bridgestone Corporation

10-1, Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
Tel 81-3-5202-8203 Fax 81-3-5202-6719  
E-mail  
URL <http://www.bridgestone.co.jp/>

Rubber Track

## Eco-products

EP-9-009

Others

environment protecting equipment

### Hitachi Ballast Water Purification Systems

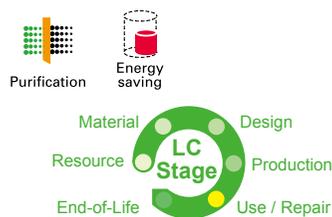
International Maritime Organization adopted the international convention for the control and management of ships' ballast water and sediments in 2004 from the viewpoint of protecting ecosystem and prevent pandemic. The convention stipulates the progressive introduction of ballast water management systems on board for all the ships from 2009.

Hitachi, Ltd. and Hitachi plant technologies, Ltd. have developed an epoch-making ballast water purification system to remove seawater organisms in ballast water using coagulation and magnetic separation methods.

This environment-friendly system does not use any disinfecting agents and causes no secondary marine pollution.

#### Hitachi Plant Technologies, Ltd.

5-2, Higashi-Ikebukuro 4-chome, Toshima-ku, Tokyo 170-8466, Japan  
 Tel 81-3-5928-8100 Fax 81-3-5928-8701  
 E-mail [koho-senden@hitachi-pt.com](mailto:koho-senden@hitachi-pt.com)  
 URL <http://www.hitachi-pt.com>



Hitachi Ballast Water Purification Systems

## Eco-products

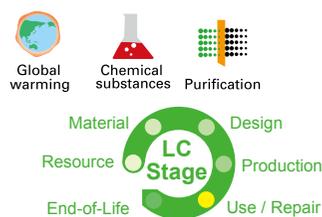
EP-9-010

Others

vending machines

### The world's first vending machine adopting the heat pump heating system

This vending machine realizes the high efficiency of more than twice as high as that of electric heater by adopting the heat pump heating system, and also increases the efficiency of cooling system. As a result, the energy consumption of 950kWh per year is achieved.



#### Matsushita Refrigeration Company

3-4-74 Noji-higasi, Kusatsu, Shiga 525-0058, Japan  
 Tel 81-77-566-4810 Fax 81-77-565-9633  
 E-mail  
 URL



Available in : Japan

Can & bottles vending machines : NS-7R30HP

## Eco-products

EP-9-011

Others

organic compost fertiliser

### Composting. Natural and thermophilic accelerated composting technology

Compost manufacturing facility of 15,000m<sup>2</sup> for the production of quality organic compost from tree and horticulture wastes with a daily intake of over 100tonnes/day.

The composting reactor chambers are able to convert natural raw organic feed materials to organic fertilizer in 14 days.

Production activities are monitored, from initial intake quality, shredding, crushing, sieving, ingredient mixing, process monitoring, curing and final product testing.

The organic compost is widely used in gardens, parks and landscaping activities. The products are certified organic by Biological Farmers of Australia and has received the Singapore Green Leaf mark for environmental sustainability.

#### ecoWise Holdings Ltd

3 Phillip Street, #14-01 Commerce Point, 048693 Singapore  
Tel (65) 6536 2489 Fax (65) 6536 7672  
E-mail enquiries@ecowise.com.sg  
URL <http://www.ecowise.com.sg>

Available in : ASEAN



## Eco-products

EP-9-012

Others

digital cameras

### Nikon Digital SLR camera D300

D300 is a NIKON digital single-lens reflex camera which drastically evolved on the DX format machine, picture quality, sensitivity, high-speed performance and operational ability. Various advanced performance has been realized on the size of the middle class machine with a low cost. • 12.3 mega-pixel image pick-up element, • high-speed serial photography of 6-8 frames per second, • AF system of the 51 points, • cognitive system for photographing scene, • new image adjustment /setting function, image sensor cleaning function, • visual field ratio 100%.

- (1) Power consumption efficiency was improved by 67% in comparison with that of D200. (Maximum workable frame number:D300, 3,000; D200, 1,800 at our company's testing condition using the same battery and ordinary temperature )
- (2) Life time was extended by 50% compared to that of D200. (the durability of shutter: D300, 150,000 times; D200, 100,000times)
- (3) Pb-free solder is used for all electronic-circuit boards.
- (4) Eco-glass (Pb-free and As-free optical glass), Usage 100%
- (5) Reduction of hazardous substances (Pb, Cd, Hg, Cr<sup>6+</sup>, PBB, PBDE) to comply the EU RoHS directive.

#### NIKON CORPORATION

Fuji Bldg., 2-3, Marunouchi 3-chome, Chiyoda-ku, Tokyo 100-8331, Japan  
Tel 81-3-3214-5311 Fax  
E-mail  
URL <https://www.nikon.co.jp>

Available in : world wide



Nikon Digital SLR camera D300

## Eco-products

EP-9-013

Others

digital cameras

### Nikon Digital SLR Camera D3

D3 is a NIKON flagship camera that meets the advanced and extensive requirement for the professional cameramen and is clearly distinct from the conventional digital single-lens reflex camera. It has many features. • Nikon's first 12.1 mega-pixel large-size image pick-up element which correspond to a film-size of 36×24mm, • common use photography sensitivity of ISO200 - 6400, • high-speed serial photography of 9-11 frames per second, • AF system of the 51 points, • cognitive system for photographing scene, • new image adjustment /setting function

- (1) Power consumption efficiency was improved by 24% in comparison with that of D2Xs. (Maximum workable frame number:D3, 4,700; D2Xs, 3,800 at our company's testing condition using the same battery and ordinary temperature)
- (2) Life time was extended by 100% compared to that of D2Xs. (the durability of shutter: D3, 300,000 times; D2Xs, 150,000times)
- (3) Pb-free solder is used for all electronic-circuit boards
- (4) Eco-glass (Pb-free and As-free optical glass) Usage 100%
- (5) Reduction of hazardous substances (Pb, Cd, Hg, Cr<sup>6+</sup>, PBB, PBDE) to comply the EU RoHS directive.

#### NIKON CORPORATION

Fuji Bldg., 2-3, Marunouchi 3-chome, Chiyoda-ku, Tokyo 100-8331, Japan  
 Tel 81-3-3214-5311 Fax  
 E-mail  
 URL <http://www.nikon.co.jp>

Available in : world wide



Nikon Digital SLR Camera D3

## Eco-products

EP-9-014

Others

digital cameras

### Olympus E-3 Digital Single-Lens Reflex Camera

E-3 is one of the high-end of our digital single-lens reflex camera in our lineup that we investigated high-resolution, mobility, and reliability thoroughly to satisfy the high demand specification of the photograph lover and their hard use sever environment.

With achieving highest high-resolution, mobility, and reliability, E-3 is realized to save energy highly by reform of ones system and device. Compared with conventional products, the E-3 consumes about 34% less power when in use.

#### Olympus Corporatin

Shinjuku Monolith, 3-1 Nishi-Shinjuku 2-chome, Shinjuku-ku, Tokyo 163-0914, Japan  
 Tel 81-3-3340-2111 Fax 81-42-642-9017  
 E-mail [environ@ot.olympus.co.jp](mailto:environ@ot.olympus.co.jp)  
 URL <http://www.olympus.co.jp/en/eco-products>

Available in : Global



## Eco-products

EP-9-015

Others

color surveillance camera

### Super-Dynamic 3 Color Surveillance Camera, WV-CW484

#### <Reduced installation time and energy>

Backing focus adjustment can be carried out by moving the image pickup element in the camera to the most desired position through the original Auto Back Focus function. This allows focus to be adjusted roughly at the installation time and reduces the time and energy for focus adjustment to a third, because focus can be fine-tuned with a switch on the camera or a remote controller on final inspection.

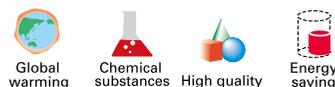
#### <Reduced power consumption>

While functions such as wide dynamic range, high-image resolution, high sensitivity, Auto Back Focus, Scene change detection and Auto image stabilizer functions have been either enhanced or newly added to the previous model, power consumption is kept at no more than that of the previous model.

**Matsushita Electric Industrial Co.,Ltd.**  
**Panasonic System Solutions Company**

4-3-1 Tsunashima-higashi, Kohoku-ku, Yokohama, Kanagawa  
223-8639, Japan  
Tel Fax  
E-mail  
URL

Available in : Global



Color Surveillance Camera : WV-CW484 Series

## Eco-products

EP-9-016

Others

biomass plastic pot

### Planting pot made from polylactic acid and paper , biopot ZPFacH

Our Biopot(biomass plastic pot) made from the starch of corn and other plants excels in ventilation and water conducting and accelerates the growth of plants. Our pots degrade by hydrolysis before planting, but after planting they decompose gradually into water and carbon dioxide by bacteria in the soil, and returns to earth. The carbon dioxide is again taken in by the plant which in turn becomes the raw material of this product by photosynthesis. Our biomass pots (environment-friendly circulation type material) need not be removed in transplanting and therefore do not generate waste, thereby saving time and labor. Our carbon-neutral (zero-emission) pots are earth-friendly and prevent global warming.

We have possessed those data on the biodegradability of our product which will enable us to obtain the biodegradability mark and the eco mark in Europe and the USA as well as Japan, according to Mitsui Chemical Analysis & Consulting Service Inc. Our product has borne the biomass mark, a registered trademark of The Japan Organic Resources Association, Corp.

Our product has received the Eco Products Award 2006 (the chief judge's special prize)

**Green support Co., Ltd.**

688-3 Mitsumatsu Kaizuka-shi Osaka-fu 597-0105, Japan  
Tel 81-72-447-0112 Fax 81-72-447-0133  
E-mail [eco@green-support.com](mailto:eco@green-support.com)  
URL <http://www.green-support.com>

Available in : Japan



biopot ZPFacH

## Eco-products

EP-9-017

Others

industrial video scope

### IPLEX FX, an industrial video scope

IPLEX FX, the industrial video scope features higher spec than conventional product such as, enhancing manipulation performance and reducing size and weight, marketed as a certified Olympus Eco-product.



#### Olympus Corporation

Shinjuku Monolith, 3-1 Nishi-Shinjuku 2-chome, Shinjuku-ku, Tokyo 163-0914, Japan  
 Tel 81-3-3340-2111 Fax 81-42-642-9017  
 E-mail [environ@ot.olympus.co.jp](mailto:environ@ot.olympus.co.jp)  
 URL <http://www.olympus.co.jp/en/eco-products>



Available in : Global

## Eco-products

EP-9-018

Others

radio and tv broadcasting equipments

### DVCPROHD P2 Camera Recorder, HVX200

- True high definition image quality with low-compression DVCPRO HD intraframe recording
- Multiple formats: DVCPRO HD, DVCPRO 50, DVCPRO, DV selectable
- New generation system "DVCPROHD P2 Series" employing "world's first" semiconductor device in recording medium
- The P2 card is superior to ordinary PC cards in durability. Its connector portion, for example, is specially designed for professional use and has passed insertion/removal tests of more than 30,000 cycles. The same P2 card can be used again and again for years to minimize the expense and impact to the environment.
- Heavy use of FPGA/Ultra LSI in promoting digital signal processing has led to reduction of parts quantity and power consumption despite realization of high function.
- Non-Use of Specific Chemical Substances \*  
 (\* Lead, mercury, cadmium, hexavalent chromium, two specific brominated flame retardants, designated by the EU RoHS Directive.)



#### Matsushita Electric Industrial Co., Ltd. Panasonic AVC Networks Company

1-15 Matsuo-cho, Kadoma, Osaka 571-8504, Japan  
 Tel 81-6-6905-8356 Fax 81-6-6905-4755  
 E-mail  
 URL <http://panasonic.co.jp/pavc/>



Available in : Japan

Memory Card Camera Recorder P2 System : AG-HVX200

## Eco-products

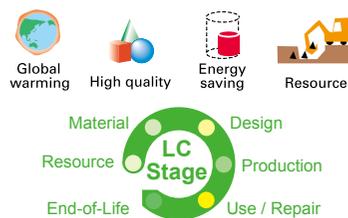
EP-9-019

Others

radio and tv broadcasting equipments

### DVCPROHD P2 Portable Recorder, HPM100

- Portable P2 HD/SD multi-format recorder delivers ultra flexibility and efficiency.
- The P2 card has no moving mechanisms, it offers outstanding reliability and high resistance to impact, vibration and temperature fluctuations. Reusable many times, the P2 card can reduce operating costs and minimize environmental impact.
- Non-Use of Specific Chemical Substances \*  
(\*: Lead, mercury, cadmium, hexavalent chromium, two specific brominated flame retardants, designated by the EU RoHS Directive.)



**Matsushita Electric Industrial Co., Ltd.**  
**Panasonic AVC Networks Company,**

1-15 Matsuo-cho, Kadoma, Osaka 571-8504, Japan  
Tel 81-6-6905-8356 Fax 81-6-6905-4755  
E-mail  
URL <http://panasonic.co.jp/pavc/>

Available in : Japan

Memory Card Portable Recorder P2 System : AJ-HPM100

## Eco-products

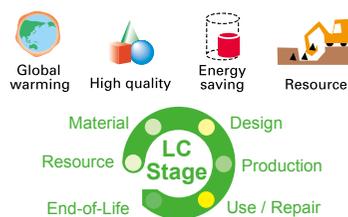
EP-9-020

Others

radio and tv broadcasting equipments

### DVCPROHD P2 Camera Recorder, HPX500

- Supports all HD/SD recording formats at the price of an SD camera-recorder.
- Advanced P2 technology provides fast, rugged performance plus IT connectivity.
- 2/3-inch interchangeable lens system.
- Variable frame rate function.
- Neither tape nor disc, the P2 card is a semiconductor memory device that can hold large amounts of video and audio data. Memory card recorders have no drive mechanism, so maintenance costs are much lower. And with their outstanding resistance to impact, vibration, temperature change, dust and other environmental conditions, they offer the high reliability you need in news acquisition and video recording.
- Non-Use of Specific Chemical Substances \*  
(\*: Lead, mercury, cadmium, hexavalent chromium, two specific brominated flame retardants, designated by the EU RoHS Directive.)



**Matsushita Electric Industrial Co., Ltd.**  
**Panasonic AVC Networks Company**

1-15 Matsuo-cho, Kadoma, Osaka 571-8504, Japan  
Tel 81-6-6905-8356 Fax 81-6-6905-4755  
E-mail  
URL <http://panasonic.co.jp/pavc/>

Available in : Japan

Memory Card Camera Recorder P2 System : AG-HPX500

## Eco-products

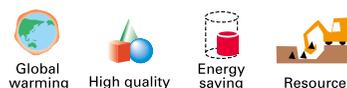
EP-9-021

Others

radio and tv broadcasting equipments

### DVCPROHD P2 Portable Recorder, HPG10

- A single portable unit that provides viewing, backup and file management functions. The P2 Gear recorder gives you even greater P2 mobility.
- Developed for professional use, the P2 card is a compact solid-state memory card that offers superior reliability, large capacity, and high transfer speed. Its outstanding resistance to temperature fluctuation, vibration and impact makes it the superior choice for field recording in harsh conditions. The P2 card has passed insertion/removal tests of more than 30,000 cycles and can be used many times over a long period. P2 recorders have no transport mechanism or rotating parts, so startup is fast, power consumption is low, and maintenance is reduced. This means both lower costs and less environmental impact.
- Non-Use of Specific Chemical Substances \*  
(\*: Lead, mercury, cadmium, hexavalent chromium, two specific brominated flame retardants, designated by the EU RoHS Directive.)



**Matsushita Electric Industrial Co., Ltd.**  
**Panasonic AVC Networks Company**

1-15 Matsuo-cho, Kadoma, Osaka 571-8504, Japan  
Tel 81-6-6905-8356 Fax 81-6-6905-4755  
E-mail  
URL <http://panasonic.co.jp/pavc/>

Available in : Japan

Memory Card Portable Recorder P2 System : AG-HPG10

## Eco-products

EP-9-022

Others

electric audio equipment

### Digital Audio Mixer for Professional

This is a "System-in-One" digital audio mixer which is integrated sound system components into one unit, such as mixer, equalizer, acoustic feedback suppressor, compressor/limiter, delay, reverb, etc.

#### [Resources and Energy Saving]

Reduction in the number of devices and voltages has been carried out through the switching power supply of all circuits and development of next generation digital signal processing architecture.

- Reduction in the number of printed circuits boards. (14 pcs -> 7 pcs)
- Compact size (capacity reduction 28%)
- Light weight (weight reduction 29%)
- Power consumption (reduction 48%) (Compared to our models of FY2000)

#### [Green Materials]

- Use of fastening screws and aluminum die-cast made by hexavalent chromium-free chemical treatment
- Chromium-free processed steel for inner chassis
- Use of lead-free solder



**Matsushita Electric Industrial Co., Ltd.**  
**Panasonic System Solutions Company**

4-3-1 Tsunashima-higashi, Kohoku-ku, Yokohama, Kanagawa  
223-8639, Japan  
Tel 81-45-544-3613 Fax  
E-mail  
URL <http://panasonic.co.jp/pss/en>

Available in : Japan, Europe

Digital Audio Mixer : WR-D40

## Eco-products

EP-9-023

Others

displays

### Electronic Displays "QR-LPD®"

The QR-LPD®(Quick Response Liquid Power Display) technology provides paper like appearance. Such as paper white, wide viewing angles and comfortable reading under all lighting conditions including bright sunlight. We supply ultra-low power display solutions for Electronic Paper markets (ESL, Information board and so on).

The QR-LPD® technology aims to become a new standard display technology for electronic paper applications and is expected to contribute the reduction of paper resources.



Electronic Displays "QR-LPD®"

#### Bridgestone Corporation

10-1, Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
 Tel 81-42-342-6271 Fax 81-42-342-6714  
 E-mail  
 URL <http://www.bridgestone.co.jp/english/index.html>

## Eco-products

EP-9-024

Others

industrial computer

### Environmentally conscious and Long-life design Industrial computer "FA3100S model 9,000"

"FA3100S model 9000" is the latest Industrial computer of our company. The computer was designed for a social infrastructure system which needs 24hour consecutive running, and various industrial systems. The long-term available CPU was selected, and the memory is correspondent to ECC (Error Check and Correct) for higher reliability. Other installed parts were also selected in the aspect of long life and high reliability. The functions of RAS (Reliability, Availability, and Serviceability) were mounted, which supports the diagnosis of a running state of the system and quick recovery from an abnormal state. In addition, we are actively taking on the problems of environmentally hazardous substances as well as resource saving. The environment measure including the use of "Pb-free" parts was started from 2001, and a RoHS-compliance product was released in May, 2006. Maintenance parts are exchangeable from the front of the computer, which makes it easy to exchange the parts. In addition, the maintenance of machine is possible for 15 years at the longest. Reduction of waste is realized by long life of the product and long-term use.



Industrial Computer "FA3100S model 9000"

#### TOSHIBA CORPORATION Industrial Systems Company

1-1, Shibaura 1-Chome, Minato-Ku, Tokyo 105-8001, Japan  
 Tel Fax  
 E-mail  
 URL

## Eco-products

EP-9-025

Others

solar charging station

### REACH Solar Charging Station

REACH is one of Grenzone's unique programs that consists multi-dimensional elements that helps to bring electricity as well as creating potential micro-economy in the rural areas.

Under REACH concept, critical resources will be pooled together to establish a "Solar Charging Station". Grenzone's own product such as EcooPower and EcooRay are used in this Charging Station.

REACH is applicable to places without grid connectivity and where utility power supply is impossible for at least several years.

**The benefits of REACH:**

- Provide instant power supply in off-grid locations
- Creates income generation opportunity for owner
- Contribute to rural development

**The Features:**

- Easy to install (fully integrated system)
- Highly modular and expandable to larger system
- Ease of use with plug and play applications

**GRENZONE PTE LTD**

51 Ayer Rajah Crescent, #06-16/17 139948, Singapore  
 Tel 65-6872-2350 Fax 65-6872-5610  
 E-mail [info@grenzone.com](mailto:info@grenzone.com)  
 URL <http://www.grenzone.com>



Available in : Worldwide

GZC 12025R EcooRay Solar Charging Station

## Eco-products

EP-9-026

Others

boilers

### Industrial hot water supply equipment "Eco-cute" contributing to CO<sub>2</sub> emission reduction

This is the Japan's Largest industrial hot water supply equipment using one of the NWFs, CO<sub>2</sub>. The capacity of hot water supply is 80kW. It enables to supply 20 tons of water a day at 90 degrees Celsius. In comparison with the heavy oil burning boilers, it can reduce the CO<sub>2</sub> emission more than 40%.



**Mayekawa Mfg Co.,Ltd.**

2-13-1, Botan, Koto-ku, Tokyo 135-8482, Japan  
 Tel 81-3-3642-8181 Fax 81-3-3643-7094  
 E-mail [public@mayekawa.co.jp](mailto:public@mayekawa.co.jp)  
 URL <http://www.mayekawa.vo.jp>



Available in : JAPAN&28countries

HWW-2HTC

## Eco-products

EP-9-027

Others

microscopes and magnifying glasses

### Nikon Fieldmicroscope Series "EZ-Micro"

This top-end fieldmicroscope from Nikon's Naturescope series was designed for microscopic observation of insects, vegetables and minerals, and enables simplified digital photography during observation. The prism in the photographic optical path is treated with phase-correction coating for superb photography with a Nikon compact digital camera.

- (1) Use of bioplastic : Four microscope body parts, as well as the packing bag, are made from vegetable-origin plastic to reduce petroleum dependence.
- (2) Reduced hazardous substances : PVC (polyvinyl chloride) has been totally eliminated from the main body, case and strap. All parts in conformance with Nikon's green procurement standards.
- (3) Eco-glass (lead & arsenic free optical glass) usage : 100%

#### NIKON CORPORATION

Fuji Bldg., 2-3, Marunouchi 3-chome, Chiyoda-ku, Tokyo 100-8331, Japan  
 Tel 81-3-3214-5311 Fax  
 E-mail  
 URL <http://www.nikon.co.jp>

Available in : world wide



Nikon Fieldmicroscope Series "EZ-Micro"

## Eco-products

EP-9-028

Others

microscopes and magnifying glasses

### BX51N-DPH Phase Contrast/Dispersion Asbestos-Measuring Microscope

Combining clear, high-contrast images with enhanced ease of use, this microscope is an extremely effective tool for measuring asbestos levels designed for use with the dispersion staining method. It is also an environment-friendly product as it contains no harmful substances.



#### Olympus Corporatin

Shinjuku Monolith, 3-1 Nishi-Shinjuku 2-chome, Shinjuku-ku, Tokyo 163-0914, Japan  
 Tel 81-3-3340-2111 Fax 81-42-642-9017  
 E-mail [environ@ot.olympus.co.jp](mailto:environ@ot.olympus.co.jp)  
 URL <http://www.olympus.co.jp/en/eco-products>

Available in : Global

## Eco-products

EP-9-029

Others

exchange lenses for SLR cameras

### Eco-friendly EF Lenses with High Image Quality

To produce the product that has non-toxic substance, Canon has been working on the development of a variety of technologies.

In case of optical lenses, Canon has introduced an alternative technology, using harmless titanium of which the refractive index is high, to produce lead-free optical lenses.

(Supplementary explanation)

So far, the lead has been contained in optical lenses to heighten refractive index.

Although such the lead is harmless because it does not melt and does not go outside the lens, it is concerned that some sludge (abrasion waste) generated in the abrasion process may pollute environment.

Therefore Canon has been seeking an alternative substance to be used for lenses instead of the lead. And now Canon has started using titanium (titanium oxide) that is no risk on human health and environment and has achieved the same optical performance as the lead.

#### Canon Inc.

30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo 146-8501, Japan  
Tel 81-3-3758-2111 Fax 81-3-3758-1160  
E-mail  
URL <http://www.canon.com>



CANON EF lenses

## Eco-products

EP-9-030

Others

watches

### wn-2 , the globe-shaped wrist watch

The letter "w" in the code "wn-2" is the initial of the word "watch", which has two meanings. One is a tool showing the time and the other is to see something, here the globe. Regarding with the global environment problems including the warming, we considered making a chance to feel it and behave as the matter of ourselves in our daily lives. The time is only one if we watch it from the space. The global watch wn-2 is a world clock by which we can know at a glance the time of all places in the Northern Hemisphere. It is also a sense wear (a tool to feel the world) by which we feel a link with the world, and which brings us fresh surprise and emotion about the place where we are now. An important point on its development is to be used for a long time by customers. And, for example, it is possible to obtain a different face only by changing the bezels. The package is not only made by the regenerated paper of milk pack, but also designed to be usable as a display without being thrown away. In addition, a part of wn-2 sales is used to support the activity of a NPO "Think the Earth Project", and for the social contribution.

#### Think the Earth Project / SPACEPORT INC.

3-1-202 Sarugaku-cho, Shibuya-ku, Tokyo 150-0033, Japan  
Tel 81-3-5459-2181 Fax 81-3-5459-2194  
E-mail [tte-sales@spaceport.co.jp](mailto:tte-sales@spaceport.co.jp)  
URL <http://www.thinktheearth.net>



wn-2 (watch northern hemisphere) silver/blue

Available in : world wide

## Eco-products

EP-9-031

Others

packing crates and pallets

### Environmentally Friendly Pallets and Packing Crates/ Eco-pallets

Waste wood chips derived from the trimming of trees (branches) and waste wood have been innovatively incorporated (developed with the help of the Centre for Applications in Environmental Technology of Singapore Polytechnic) as sustainable materials to produce our Eco-pallets and packing crates.

These sustainable developed Eco-pallets are:

- Structurally designed for static loading, dynamic loading and racking
- Suitable for 4-way forklift entry
- Conforming to the ISPM 15 Standards
- Simple yet elegant in design for non-slip operations
- Competitively priced
- Conform to ISO 14001 and OHSAS 18001 criteria for certification

This environmentally sustainable material can be customised for packing crates.

#### TentTech Pte. Ltd.

246 MacPherson Road, #06-02, Betime Building 348578, Singapore  
 Tel 65-9791-1284 Fax 65-6776-1554  
 E-mail [info@tenttechsg.com](mailto:info@tenttechsg.com)  
 URL <http://www.tenttechsg.com>

Available in : Worldwide

Eco-pallet



## Eco-products

EP-9-032

Others

biodegradable hydraulic oil

### Eco-friendly biodegradable hydraulic oil "Bio Green Grass"

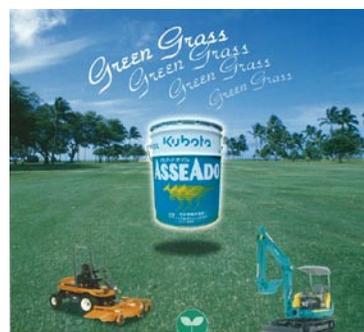
This environmentally-friendly oil is degraded by microorganism and will not cause environmental damage if spilled onto grass, soil or into a river following a construction accident. We developed the technology for the world's first hydraulic oil that does not kill the grass. Eco-label certification criteria as biodegradable.

It is certified as an Eco-label Product by Japan Environment Association.



#### KUBOTA Corporation

1-2-47, Shikisu-higashi, Naniwa-ku, Osaka-shi, Osaka 556-0012, Japan  
 Tel 81-6-6648-2111 Fax  
 E-mail  
 URL <http://www.kubota.co.jp/index.html>



Bio Green Grass

## Eco-products

EP-9-033

Others

gas engine co-generation system

### Residential-use gas engine co-generation system

"Ecowill" is a gas engine co-generation system fueled by city gas. It generate 1.0kW of electricity with gas engine, and effectively use 2.8kW of waste heat for generating hot water and floor heating system as well.

Compared with conventional thermal power plant and hot water boiler, these systems contribute to energy savings by up to 21% and to the reduction of CO<sub>2</sub> emissions by up to 32% with its high efficiency. (power generation efficiency:20%, Heat recovery efficiency:57% in high heat value )

"Ecowill" memorize energy demands of every house by "learning function" and estimate demands, generate power with least energy.

In addition, user can check energy demand and reductions of CO<sub>2</sub> through remote display in the house. Many user said that their attitude towards energy saving has improved.

#### Tokyo Gas Co., Ltd

1-5-20, Kaigan, Minato-ku, Tokyo 105-8527, Japan  
Tel 81-3-5400-7671 Fax 81-3-3432-5509  
E-mail  
URL <http://www.tokyo-gas.co.jp/>



## Eco-products

EP-9-034

Others

noise barrier

### Multiple Edge Noise Barrier "TONAKAI"

Multiple Edge Noise Barrier "TONAKAI" is a new type noise barrier which is more economical and effective on reducing the traffic noise.

- 1) Variation of 3 types; Large typ (Height/Width: 1m/2m), Small type (H/W: 0.5m/1.15m), Mini type (H/W: 0.5m/0.5m)
- 2) "TONAKAI" can reduce the noise by 3-5dB compared with a conventional noise barrier of the same height.
- 3) Better noise reduction without heightening the barrier enable to avoid the problem of sunlight and EMI interference.
- 4) "TONAKAI" can reduce the total cost of noise-control measures.
- 5) The noise reduction mechanisms are "Multi-diffraction" and "Mutual interference of sound wave in the barrier".
- 6) "TONAKAI" meets strength and safety standard.
- 7) "TONAKAI" can also be used for the railway noise.

#### Bridgestone Corporation

10-1, Kyobashi 1-chome Chuo-ku, Tokyo 104-8340, Japan  
Tel 81-3-5202-6871 Fax 81-3-5202-6874  
E-mail  
URL <http://www2.bridgestone-dp.jp/civil/>



TONAKAI (Multiple Edge Noise Barrier)

## Eco-products

EP-9-035

Others

oil boom

### Oil Boom

Oil fence is the oil boom which stops the floating pollutant such as crude oil spilt from stranded tanker or an accident of the oil terminal and minimize the environmental pollution. The portable type has the foam blocks inside and most widely used. The inflatable type is space saving, air injection boom for emergency use. The unique sink-and float type is the fixed type moored around the certain area and floats only when it is necessary.

The bias structure of reinforcing ply enables the flexibility on the wavy water and keep the high performance.



Air/Water/Soil High quality



Oil Boom

#### Bridgestone Corporation

10-1 Kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
Tel 81-3-5202-6871 Fax 81-3-5202-6874  
E-mail  
URL <http://www2.bridgestone-dp.jp/civil/>

## Eco-products

EP-9-036

Others

coffins or caskets

### Environmentally Friendly Caskets/ Eco-ffins

Waste wood chips derived from the trimming of trees (branches) and waste wood have been innovatively incorporated (developed with the help of the Centre for Applications in Environmental Technology of Singapore Polytechnic) as sustainable materials to produce our Eco-ffins.

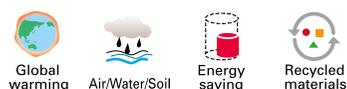
These sustainable developed Eco-ffins are:

- 1) Elegantly designed for aesthetics and dignified send-off for loved ones
- 2) Structurally strong
- 3) Competitively priced
- 4) Highly combustible
- 5) Environmentally friendly (either for burial or cremation)
- 6) We also have D.I.Y. (Do-it-Yourself) Eco-ffins as an enhanced eco-product that can further reduce energy demands via reduction in storage space, transportation and logistics needs

Air pollution tests on our Eco-ffins showed lesser pollutant levels as compared to those made from virgin timber or ply wood. Ash remains are also acceptable.

#### TentTech Pte. Ltd.

246 MacPherson Road, #06-02, Betime Building 348578, Singapore  
Tel 65-9791-1284 Fax 65-6776-1554  
E-mail [info@tenttechsg.com](mailto:info@tenttechsg.com)  
URL <http://www.tenttechsg.com>



Global warming Air/Water/Soil Energy saving Recycled materials



Available in : Worldwide

4-sided, 6-sided, 8-sided, 4-sided curved top

## Eco-products

EP-9-037

Others

charcoal apple art

### Environment-conscious carbon craft product, "Apple original charcoal"

Charcoal has been produced in a traditional charcoal kiln, and the most has been used for the fuel. Here, by firing the resin under the precise environmental control due to the charcoal making technology, we got the carbon material without the crack and the shape distortion which were defects of the charcoal. What we introduce here is the industrial material such made, namely a high-tech porous carbon material "wood ceramics".

The porous carbon material is obtained by firing wood and woody material in the oxygen-free atmosphere, after impregnating them with phenol resin. The product is a carbon composite material, which has the medium property of the advanced carbon material and the charcoal which is a traditional carbon material. The apple original charcoal is the craft product which is made by changing a dropped apple and the apple branch pieces into wood ceramics. By firing the leaf of the apple after soaking it with phenol, it becomes the composite material of the cellulose-origin amorphous carbon of and the phenol-origin glassy carbon. It is not damaged even in the transport, because it is reinforced by the hard glassy carbon.

#### SUMIKOUBOU APPLE STUDIO Co., Ltd.

4-5-15, Jumoku, Hirosaki-shi, Aomori 036-8228, Japan  
Tel 81-172-37-7707 Fax 81-172-37-7707  
E-mail [sumikoubou-apple.studio@amber.plala.or.jp](mailto:sumikoubou-apple.studio@amber.plala.or.jp)  
URL



Recycled materials



## Eco-products

EP-9-038

Others

fertilizer

### Environment-friendly fertilizer made from beer yeast

Our company Asahi Food & Healthcare Co., Ltd. sales the liquid fertilizer "豊作物語 (the good harvest story)" to the agricultural producers. The fertilizer is made from the cell wall of brewer's yeast by enzymatic reaction.

"豊作物語" is based on the hydrolysate of the cell wall of brewer's yeast. It increases the plant's intrinsic immunity power by the activity of the  $\beta$ -glucan exists in cell wall, and it promotes thereby the healthy growth of the plants. Since our raw material is the natural yeast which is safe and secure to both the human and the crops, we have received high evaluation from the users. Our company will continue development of the safe and secure goods by making use of the superior characteristic given by the hydrolysate made from the cell wall of brewer's yeast, such as "the growth acceleration", "the improvement of immunity", etc.

#### Asahi Food & Healthcare Co., Ltd.

1-23-1 Azumabashi, Sumida-ku, Tokyo 130-8602, Japan  
Tel 81-3-5608-2771 Fax 81-3-5608-2773  
E-mail  
URL <http://www.asahi-fh.com>



Recycled materials



High quality



Good Harvest Story

## Eco-products

EP-9-039

Others

plastic containers

### Recycled Containers with Attractive Appearance and Strength

Plastic containers are often used for in-plant handling of parts and products, as well as for their storage and transportation. However, end-of-life containers are usually disposed of in landfills or by incineration. There are two conventional methods of recycling: 1) pelletizing collected containers for use as molding materials; and 2) mixing the recovered pellets with new materials. However, pelletizing is costly and has product quality and color drawbacks. Relying on a proprietary injection molding method that uses recycled container material for the core layer which is sandwiched by new material layers, Sekisui Recycled Containers provide effective solutions for problems associated with recycling of plastic containers. Features of Sekisui Recycled Containers

- Three-layer molding structure in which the recycled container material forms the core layer and is sandwiched by new material layers.
- Color requirements can be met for recycled containers.
- The same quality and strength as 100% new material containers can be maintained.
- Crushed chips of collected containers can be used without pelletizing.
- Recycling can be repeated any number of times.

#### Sekisui Chemical Co., Ltd.

2-3-17, Toranomon, Minato-ku, Tokyo 105-0001, Japan  
 Tel Fax  
 E-mail [kankyo@sekisui.jp](mailto:kankyo@sekisui.jp)  
 URL <http://www.sekisui.co.jp/>



## Eco-products

EP-9-040

Others

recycling products

### Recycling

#### 1. Fiber & textile recycling

As a part of "ecodream", under which Toray promotes the company-wide environmental and recycling activity, we are working to establish a total recycling system for fibers & textiles. Based on this system, Toray will recycle various fiber & textile products using the optimal recycling technologies such as material, chemical and thermal, one of which is selected according to the properties of the material being recycled. The critical point of the total recycling system is that we approach recycling based on the concept of "Less Energy" to promote energy saving and reduce CO<sub>2</sub> emission.

#### 2. Plastics material recycling system

Toray's material recycling system was developed to tie in with customer collection and recycling systems so that molded resin and film products recovered after use could be recycled and reused. Toray offers recycling system design for used plastic molded products in accordance with the customer's needs.

#### Toray Industries, Inc.

2-2-1, Nihonbashi-Muromachi, Chuou-ku, Tokyo 103-8666, Japan  
 Tel 81-3-3245-5115 Fax 81-3-3245-5344  
 E-mail [Product@nts.toray.co.jp](mailto:Product@nts.toray.co.jp)  
 URL <http://www.toray.jp>



Nylon 6 material recycling product

## Eco-products

EP-9-041

Others

biomass plastic pot

### Plantingpot made from polylactic acid , biopot ZFaCH

Our Biopot(biomass plastic pot) made from the starch of corn and other plants excels in ventilation and water conducting and accelerates the growth of plants.

Our pots degrade by hydrolysis before planting, but after planting they decompose gradually into water and carbon dioxide by bacteria in the soil, and returns to earth. The carbon dioxide is again taken in by the plant which in turn becomes the raw material of this product by photosynthesis.

Our biomass pots (environment-friendly circulation type material) need not be removed in transplanting and therefore do not generate waste, thereby saving time and labor. Our carbon-neutral (zero-emission) pots are earth-friendly and prevent global warming.

We have possessed those data on the biodegradability of our product which will enable us to obtain the biodegradability mark and the eco mark in Europe and the USA as well as Japan, according to Mitsui Chemical Analysis & Consulting Service Inc.

Our product has borne the biomass mark, a registered trademark of The Japan Organic Resources Association, Corp.

Our product has received the Eco Products Award 2006 (the chief judge's special prize)

#### Green support Co., Ltd.

688-3 Mitsumatsu Kaizuka-shi Osaka-fu 597-0105, Japan  
 Tel 81-72-447-0112 Fax 81-72-447-0133  
 E-mail [eco@green-support.com](mailto:eco@green-support.com)  
 URL <http://www.green-support.com>



Available in : Japan

biopot ZFaCH

## Eco-products

EP-9-042

Others

biomass plastic pot

### Panting pot made from polylactic acid , biopot ZH

Our Biopot(biomass plastic pot) made from the starch of corn and other plants excels in ventilation and water conducting and accelerates the growth of plants.

Our pots degrade by hydrolysis before planting, but after planting they decompose gradually into water and carbon dioxide by bacteria in the soil, and returns to earth. The carbon dioxide is again taken in by the plant which in turn becomes the raw material of this product by photosynthesis.

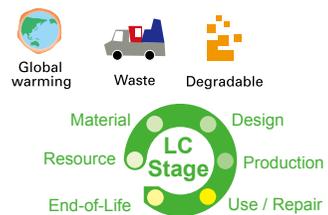
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#### Green support Co., Ltd.

688-3 Mitsumatsu Kaizuka-shi Osaka-fu 597-0105, Japan  
 Tel 81-72-447-0112 Fax 81-72-447-0133  
 E-mail [eco@green-support.com](mailto:eco@green-support.com)  
 URL <http://www.green-support.com>



## Eco-products

EP-9-043

Others

biomass plastic pot

### Planting pot made from polylactic acid , biopot Zach

Our Biopot(biomass plastic pot) made from the starch of corn and other plants excels in ventilation and water conducting and accelerates the growth of plants.

Our pots degrade by hydrolysis before planting, but after planting they decompose gradually into water and carbon dioxide by bacteria in the soil, and returns to earth. The carbon dioxide is again taken in by the plant which in turn becomes the raw material of this product by photosynthesis.

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#### Green support Co., Ltd.

688-3 Mitsumatsu Kaizuka-shi Osaka-fu 597-0105, Japan  
 Tel 81-72-447-0112 Fax 81-72-447-0133  
 E-mail [eco@green-support.com](mailto:eco@green-support.com)  
 URL <http://www.green-support.com>



Available in : Japan

biopot Zach

## Eco-products

EP-9-044

Others

wood products

### Laminated wood of Aomori HIBA for building material use

The development of wood resources has a possibility to destruct the global environment, so it is much interested. In general, it takes 30 years or more for a tree to grow up to the size from which usable wood is cut out, even if the tree is a species that has a large growth rate. As for Aomori HIBA, a long period of 200 to 300 years is necessary to grow. So, the effective use of the limited resource is important, and the most effective method is to use the laminated wood. (HIBA is a kind of Japanese cypress tree and grows in Aomori prefecture in Japan.)

Aomori HIBA contains about 1% Aomori HIBA oil, and the oil contains 2% "Hinokitiol". "Hinokitiol" is isopropyl-tropolone (C<sub>10</sub>H<sub>12</sub>O<sub>2</sub>). It has anti-bacterial and worm-killing powers; therefore, the wood of Aomori HIBA does not easily rot and doesn't allow white ants to come closer to it. We may therefore say that Aomori HIBA is a long life material that can be used without special rot-proof treatment. Because of its long life, Aomori HIBA has been used not only for the foundation and pillars of private house, but also in the structures of shrine and temple.

#### Kodate Lumber Inc.

127-20, Sengari, Aburakawa, Aomori-shi, Aomori, 038-0059, Japan  
 Tel 81-17-788-8125 Fax 81-17-788-8127  
 E-mail [kodate-mokuzai@kodate.co.jp](mailto:kodate-mokuzai@kodate.co.jp)  
 URL <http://kodate.co.jp/>





# Eco-services



- 1 Product-related services**
- 2 Reuse and recycling services**
- 3 Outsourcing services**
- 4 Management-related services**
- 5 Others**

In the *Eco-products Directory 2008*, “eco-services” refer not only to “technological improvements” but also “ways to use products” and “environmental management” as well as “mechanisms that enable environmental impact reduction through financial products.” Typical eco-services include car sharing. Car sharing is a type of eco-service where, for example, 10 people share one car instead of each driving his/her own car. This results in fewer vehicles on the road, thus reducing the environmental impact of travel considerably. As another example of eco-service, regular maintenance and upgrading can be performed on conventional products so that they can be used longer. In this directory, “eco-services” also refer to “eco-funds where investments are made in business firms with excellent performance in caring for the environment.”

The technological development of eco-products normally requires time and money. However, eco-services often only require good ideas to promote environmental impact reduction. Eco-services have not yet been widely recognized by consumers. A system should be developed to publicize the availability and advantages of eco-services so that they permeate society, encouraging further environmental impact reduction.



## Eco-services

ES-1-001

Product - related services

gifts

### Present Tree

Present Tree is present that delivers an owner certificate for the planted tree with a message card. Trees will be planted for the reproduction of tropical forests in the Kalimantan island.

You can have two planted trees. One of the trees is planted for recovering tropical forest.

The other is a Teak, and this afforestation enables the sustainable supply of woods, and creates the employment of locals.

Ten years later, the Teak will be cut down, and sold. The income of the Teak will be paid to the owner. The income will also be able to be used for reforestation, or the environment conservation activity.

As another privilege, CO<sub>2</sub> offset certificate is attached to Present Tree. The planted tree will become forest and that will absorb carbon dioxide. It contributes prevention of global warming.

The owner certificate is described with the owner's name, and the latitude and the longitude of the position where the Teak sapling is afforested, that is measured by the GPS(Global Positioning System).

#### VIVO Corporation Co.,Ltd

3-5-4, Tanashicho, Nishitokyo-shi, Tokyo 188-0011, Japan  
 Tel 81-42-465-7563 Fax 81-42-465-7241  
 E-mail info@vivo.jp  
 URL <http://www.env-r.com/tree>



Available in : Japan

[Present Tree] contents

## Eco-services

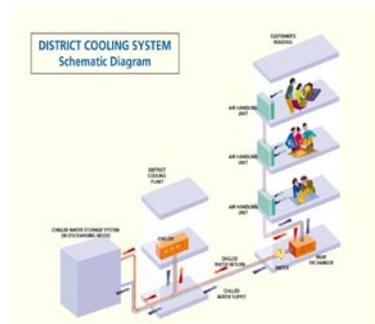
ES-1-002

Product - related services

district cooling system

### District Cooling System

District Cooling System (DCS) is an energy efficient system for a building's air-conditioning needs. The centralized chillers housed in the plant will generate chilled water, which will be sent via a network of underground pipes to individual buildings for their cooling needs. Besides reducing the energy consumption for DCS users, this system also eliminates the risk of legionnaire disease and the noise pollution for the users. Other than the environmental benefits, the use of DCS helps to reduce upfront capital investment cost for building owners.



#### First DCS Pte Ltd

48 Changi Business Park Central 2 486067, Singapore  
 Tel 65-62606700 Fax 65-67882311  
 E-mail marketing@firstdcs.com.sg  
 URL <http://www.firstdcs.com.sg>

Available in : Singapore

## Eco-services

ES-1-003

Product - related services

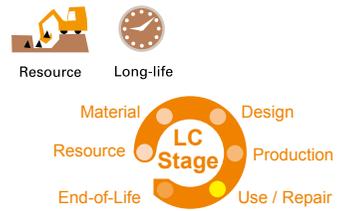
treatment of metal surface

### High-Performance Surface Treatment Technology TRIBEC™ Series

Various surface treatment technologies are applied to molds for extending their lives. However recent growing environmental awareness is resulted to change the type of lubricants and coating methods along with other drastic modifications and has shortened the operating lifetime of molds. In an effort to improve their operating life, Hitachi Metals developed the TRIBEC™ Series. By identifying the necessary performance attributes of each application based on extensive analysis on mold abrasion over many years, Hitachi Metals has achieved high-performance surface treatment of molds that is operating-environment specific. The TRIBEC™ Series provides protection for molds used even in harsh conditions where environmentally conscious lubricating methods are used. In addition, mold abrasion can be suppressed with polishing to remove damaged portions and reuse enabled through the application of TRIBEC™.

#### Hitachi Metals, Ltd.

SEAVANS North Building, 1-2-1, Shibaura, Minato-ku, Tokyo 105-8614, Japan  
Tel 81-3-5765-4410 Fax  
E-mail  
URL [http://www.hitachi-metals.co.jp/e/prod/prod19/p19\\_02.html](http://www.hitachi-metals.co.jp/e/prod/prod19/p19_02.html)



Products with TRIBEC™ applied

## Eco-services

ES-1-004

Product - related services

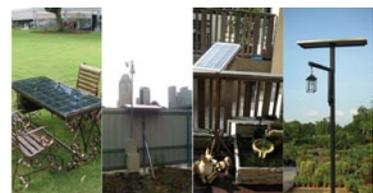
Solar Energy Services

### Solar Energy Services

- Engineer renewable system on building and infrastructure based on customer requirements and budget
- Improve existing infrastructure by re-engineering; providing new supports and incorporate energy efficient products to existing infrastructure
- Design and manufacture Garden/landscape solar furniture such as solar table, solar lamp, solar water feature and solar trellis
- Providing standalone solar CCTV system for no power source environment
- Providing standalone solar water monitoring power for no power source environment.
- Providing standalone lights for residential and construction such as portable and super bright solar light for construction/road repair sites. No need for trenching, generators and cranes anymore

#### Grenergy Pte Ltd

Blk 22 Woodlands Link, #01-44 Woodlands East Industrial Estate 738734, Singapore  
E-mail [info@grenergy.com.sg](mailto:info@grenergy.com.sg)  
URL <http://www.grenergy.com.sg>



Available in : Singapore

## Eco-services

ES-2-001

Reuse and recycling services

retreaded tires

### Retread tires for trucks and buses

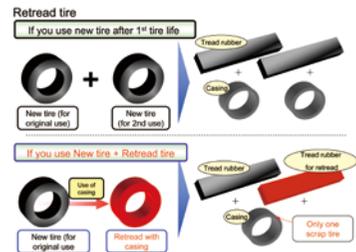
Retread is to assemble new tread rubber on worn-out tire and to revive tire life.

There are 2 ways of retread. One is the way that already cured tread (Pre-Cured Tread=PCT) is assembled on worn-out tire, which is called "COLD" type retread, because temperature on curing is relatively low (100-120°C). The other is the way that non-cured tread is assembled, which is called "HOT" type retread, because temperature on curing is relatively high (140-150°C) and this is similar to new tire production.

Through retreading method, the CO<sub>2</sub> emission and energy consumption during tire manufacturing process can be significantly reduced as well as scrap tire reduction. Bridgestone also provides new tire with properly designed as retread casing in order to maximize the value of casing and reusing efficiency. Bridgestone will make continuous effort for further enlightenment of ECO concept responding to social justice and needs of customers through retread activity.

#### Bridgestone Corporation

10-1, kyobashi 1-chome, Chuo-ku, Tokyo 104-8340, Japan  
 Tel 81-3-3563-6082 Fax 81-3-3563-1165  
 E-mail  
 URL <http://www.bridgestone.co.jp/english/index.html>



Retread tires image

## Eco-services

ES-2-002

Reuse and recycling services

tungsten

### Tungsten Recycle system of Carbide Cutting Tools

Tungsten is a refractory metal in its property, and tungsten carbide has high hardness at high temperature and used for the cemented carbide cutting tools which are indispensable to metalwork a variety of parts and components in automobiles, household electric appliances and other industries. Tungsten is also known as one of the rare metals, and its resource in the world is very limited. MITSUBISHI MATERIALS group, known as one of the major cemented carbide tool companies in Japan, and a supplier of tungsten carbide, began the recycling of tungsten. Tungsten materials processed by the conventional recycling method are used in the limited application areas because of its insufficient quality. MITSUBISHI MATERIALS group has developed a new recycling method to recycle tungsten, while ensuring high quality of recycled tungsten. At present, we are the only manufacturer, who can recycle used cemented carbide by metallurgical refining process. We recycled tungsten from used cemented carbide tools and alloys, collected in the manufacturing process.

#### JAPAN NEW METALS CO.,LTD

1-6-64 Sennari-cho, Toyonaka, Osaka 561-0829, Japan  
 Tel 81-6-6333-1171 Fax 81-6-6331-5358  
 E-mail  
 URL <http://www.jnm.co.jp>



Carbide Cutting Tool

Available in : Japan

## Eco-services

ES-2-003

Reuse and recycling services

FRP recycling system

### FRP Recycling Depolymerize Unsaturated Polyester under Ordinary Pressure

Fiber reinforced plastics (FRPs) - light, high-strength and durable materials - are used for a variety of items, including bathtubs, automotive parts, railway vehicle parts and small vessels. However, FRP raw materials such as thermosetting resins (unsaturated polyester resins, etc.) make FRP difficult to be recycled because they do not degrade after being molded. Hitachi Chemical's FRP recycling technology, which uses tripotassium phosphate as a catalyst and benzyl alcohol as a solvent, involves melting FRP for about 10 hours at 200 degrees centigrade under ordinary pressure. FRPs are readily separated into glass fibers, fillers, resins and other components, which together are reprocessed into FRPs at a low cost. This technology is unique that it requires neither the pretreatment (crushing, etc.), the facilities nor the energy for the pressurization. This technology also helps to reduce processing costs while ensuring health and safety. Moreover, the relatively long glass fibers can be recovered, which can be reproduced in recycled FRPs with about 70% of the tensile strength of virgin FRPs.



#### Hitachi Chemical Co.,Ltd

1500 Ogawa Chikusei-shi, Ibaraki 308-8521, Japan  
 Tel 81-296-20-2304 Fax 81-296-28-4637  
 E-mail  
 URL <http://www.hitachi-chem.co.jp>



FRP dissolving process

## Eco-services

ES-2-004

Reuse and recycling services

material recycling

### Recycling of Electronic Appliances toward Recycling-oriented Society

Tokyo Eco Recycle Co., Ltd. disassembles used electric appliances manually to separate valuable resources thoroughly. The company has established a novel business model in which "wastes" are reproduced as valuable "resources". One step forward from an effort just to "recover resources" for environmental protection to a business "to create resources" leading to profits-Tokyo Eco, as a front runner in the world has been striving to establish a novel approach representing the recycling industry.

Tokyo Eco strives for "zero emission." This is a concept in which waste going to landfill sites be reduced to zero. Our landfill ratio 0.1% is top level in Jpn.

Tokyo Eco is also working to expand and improve the zero emission effort established for the four home appliances and to apply it to other used items, too. On the other hand, from the viewpoint to promote recycling in the information society, regarding disposal information devices such as personal computers, the company enhance the security level further.



#### Tokyo Eco-Recycle, Ltd.

38 Wakasu, Koutou-ku, Tokyo 136-0083, Japan  
 Tel 81-3-3522-6690 Fax 81-3-3522-6688  
 E-mail [webmaster@tokyo-eco.co.jp](mailto:webmaster@tokyo-eco.co.jp)  
 URL <http://www.tokyo-eco.co.jp>



Magnetic Separator, Line for washing machine

## Eco-services

ES-2-005

Reuse and recycling services

biomass cogeneration

### Biomass cogeneration plant

ecoWise owns and operates its own 1MW biomass cogeneration plant using wood/tree waste/woodchips as fuel source. Electricity up to 1000kW and 15 tonnes/hour of steam are generated for internal use, greatly reducing power grid off-take.

ecoWise is also able to provide on-the-job training in boiler operations as well as participation in sustainability and Clean Development Mechanism (CDM) projects. It also manages its own wood and tree waste shredding operations producing wood chips as fuel.

#### ecoWise Holdings Ltd

3 Phillip Street, #14-01 Commerce Point 048693, Singapore  
 Tel 65-6536-2489 Fax 65-6536-7672  
 E-mail enquiries@ecowise.com.sg  
 URL <http://www.ecowise.com.sg>

Available in : ASIA



## Eco-services

ES-2-006

Reuse and recycling services

recycling system for polyester

### World's first totally closed-loop recycling system for polyester

ECOCIRCLE™ is an advanced technology that turns PET bottles and polyester products back into highly pure polyester raw material(99.99%). By separating additives and coloring agents, equivalent purity to raw material produced from petroleum can be achieved.

So, ECOCIRCLE™;

- does not produce waste
- suppresses petroleum consumption
- significantly reduces CO<sub>2</sub> emissions and energy consumption

ECOCIRCLE is Teijin Fiber's trademark.

#### Teijin Fibers Limited

2-1, Kasumigaseki 3-chome, Chiyoda-ku, Tokyo 100-8585, Japan  
 Tel 0088-22-0175 Fax  
 E-mail [tfj0604@teijin.co.jp](mailto:tfj0604@teijin.co.jp)  
 URL [http://www.ecocircle.jp/index\\_e.html](http://www.ecocircle.jp/index_e.html)



Closed-loop recycling system

Eco-services

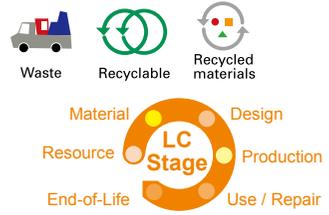
ES-2-007

Reuse and recycling services

recycled copper slag

Provide Service for Recycling of Used Copper Slag and Supply of Recycled Copper Slag

As a government approved Treatment Centre for the collection of Used Copper Slag, JPL Industries recycle and grade them to be reuse for blast cleaning process. Our wholly owned subsidiary, JPL Concrete Products converts recycled copper slag into one of the raw materials used for the production of concrete paving blocks and car park slabs.



JPL Industries Pte Ltd

29 Tanjong Kling Road, 628054 Singapore  
Tel 65-6266-2210 Fax 65-6266-3002  
E-mail admin@jplind.com.sg  
URL



Available in : Singapore

Treatment & Recycling Facilities

## Eco-services

ES-3-001

Outsourcing services

landfill gas collection volume evaluation method

### Landfill Gas Collection Volume Evaluation Method

For successful landfill gas (LFG) collection and/or power generation projects or CDM projects, accurate evaluation of the LFG emission and collection volume is crucial. Through a number of actual project experiences in the Southeast Asia, Kajima developed a step-wise evaluation methodology comprising preliminary study (Surface Methane Flux/Concentration Study), diagnosis study (Passive Gas-Well Test) and detailed study (Pumping Gas-Well Test). The preliminary study that measures methane concentration and methane flux on the landfill surface provides economical and quick perception on further studies, the diagnosis study that measures the volume and composition of the LFG emitting through a few small observation wells and conducts chemical analysis on waste samples provides approximate estimation, and the detailed study that pumps LFG from a few actual production wells and studies the relation between pumping power and methane concentration provides accurate LFG collection volume data and operational data.

#### Kajima Corporation

6-5-11 Akasaka, Minato-ku, Tokyo 107-8348, Japan  
 Tel 81-3-5544-0734 Fax 81-3-5544-1733  
 E-mail [env-act@ml.kajima.com](mailto:env-act@ml.kajima.com)  
 URL [http://www.kajima.co.jp/tech/g\\_warming/index.html](http://www.kajima.co.jp/tech/g_warming/index.html)



Global warming



Pumping Gas-Well Test

## Eco-services

ES-3-002

Outsourcing services

ecowise ceramic membrane system

### Solid liquid separation. Oily wastewater treatment. Ceramic membrane system

ecoWise Ceramic membrane system is able to carry out solid-liquid separation or liquid-liquid separation effectively. The inorganic material makes it durable under conditions of high temperature, extreme pH conditions, oily wastewater and solvent rich liquid. ecoWise have Microfiltration and Ultrafiltration ceramic membrane systems with pore size ranges up to 20nm.

ecoWise ceramic membrane system can be applied in biotech and pharmaceutical, food and beverage, cosmetic and petrochemical industries for product enrichment and separation. It can also be applied in environmental industry for effective oily wastewater treatment, solvent or coolant recovery and acid/alkaline recovery.

#### ecoWise Holdings Ltd

3 Phillip Street, #14-01 Commerce Point 048693, Singapore  
 Tel 65-6536-2489 Fax 65-6536-7672  
 E-mail [enquiries@ecowise.com.sg](mailto:enquiries@ecowise.com.sg)  
 URL <http://www.ecowise.com.sg>



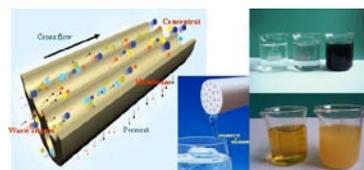
Waste



Recyclable



Purification



ecoWise Ceramic Membrane working principle and effect

Available in : ASEAN

## Eco-services

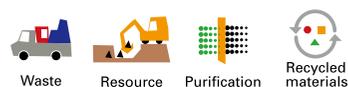
ES-3-003

Outsourcing services

hydrox electrochemical unit

### Electrochemical waste water treatment.

The Hydrox technology (electrochemical reaction) generates ions that targets wastewaters and effluents. The multi-compartment electrolytic cells allow large volumes of polluted water to be treated quickly and quietly at high efficiency. Pollution removal using proprietary electrolytic materials/processes and design covers a wide range of industrial waste streams. It can achieve high removal efficiency of suspended solid, COD and color. It has a much smaller foot print comparing to conventional treatment method. Hydraulic retention is typically 1 to 2 minutes.



#### ecoWise Holdings Ltd

3 Phillip Street, #14-01 Commerce Point 048693, Singapore  
 Tel 65-6536-2489 Fax 65-6536-7672  
 E-mail enquiries@ecowise.com.sg  
 URL <http://www.ecowise.com.sg>

Available in : Asia

## Eco-services

ES-3-004

Outsourcing services

energy management / energy audit services

### Energy Management Service

UGL Premas is a leading total asset management company in Asia headquartered in Singapore. With staff strength of 2000, we provide facilities management and engineering services for various types of facilities across Asia and Middle East regions. Our Energy Centre, the first accredited ESCO, specialises in energy management solutions and procurement services. It has helped building owners identified savings of more than S\$10 million annually in total.



#### United Premas Limited

Block 750 Oasis, Chai Chee Road, Technopark @ Chai Chee #01-01  
 469000, Singapore  
 Tel 65-6876-0088 Fax 65-6538-8146  
 E-mail corporatemarketing@unitedpremas.com  
 URL <http://www.uglpremas.com>

Available in : Asia, Middle East

## Eco-services

ES-4-001

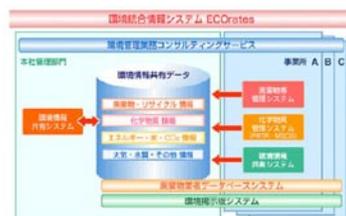
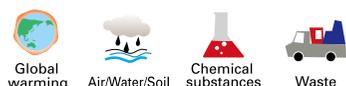
Management - related services

environmental management

### Information collecting and analysing tool supporting Environmental Management

"Eco rates" supports, as a real managing system, the information management that is the base of the environment management. Main features are as follows.

- The system is a WEB-base scheme that is yielded from actual business needs and has an enough record about being used.
- In one platform (server), installed are three sub-systems for collecting and analyzing the information, for controlling the waste with the administration of agents, and for monitoring the chemical substances.
- "ECO rates" is a total package in which each sub-system is connected each other. Of course, the customers can use a sub-system only.
- We offer "version up" service every year to conform to the latest law and acts. We help the customer's compliance.
- "Add on" operation and customization of the function can be arranged so as to meet the customer's business uses. In addition, we support the customers on the whole from the introduction of system to the practical use policy and operative rules.



#### Mitsubishi Electric Information Network Corporation

1-4-4 Koujimachi, Chiyoda-ku, Tokyo 102-8483, Japan  
Tel 81-3-5276-6811 Fax 81-3-5276-6850  
E-mail  
URL

Available in : Japan

ECOrates Integrated Environmental Information system

## Eco-services

ES-4-002

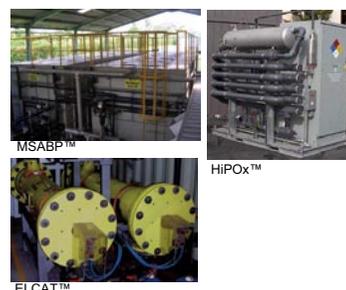
Management - related services

Wastewater Management

### Wastewater Treatment Technology-MSABP™, HiPOx™ and ELCAT™

Teijin provide total water treatment solution & system provision with following technologies.

- 1) No-sludge biological treatment system 'MSABP™'  
The attached growth process for treatment of municipal and industrial wastewater based on microorganism food chains. This design minimizes the "exceed sludge", cut the cost and reduce the foot print.
- 2) Advanced treatment systems 'HiPOx™' and 'ELCAT™';  
For wastewater purification after biological treatment and/or including toxic, persistent components.
  - HiPOx™ is an advanced oxidation process using H<sub>2</sub>O<sub>2</sub> with ozone to achieve oxidation of organic materials such as VOCs, 1,4-dioxane etc. Multiple ozone injection points maximize efficiency and minimize byproduct formation.
  - ELCAT™ is two stage electro-catalytic wastewater treatment process for oxidative-purification such as phenols, detergents etc. This combine system is high efficiency and low cost.
- 3) High performance purification materials 'carbon fiber'  
  - Carbon fiber is rapidly fixed microorganisms, SS etc. and accelerates water purification only set up. So, using carbon fiber save energy and manpower.



#### Teijin Limited

2-1, Kasumigaseki 3-chome, Chiyoda-ku, Tokyo 100-8585, Japan  
Tel 81-3-3506-4593 FAX  
E-mail  
URL <http://www.teijin.co.jp/english/index.html>

## Eco-services

ES-4-003

Management - related services

document management system

### Document Solution "LIBINITY"

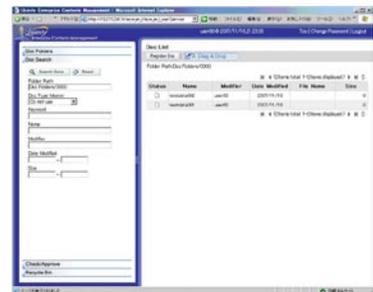
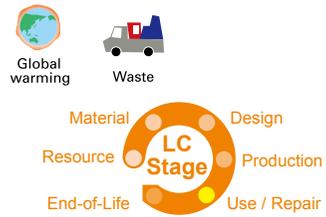
LIBINITY is a new unified brand of the document solution of Hitachi Systems & Services, Ltd. We release product line such as image document filing system "LIBINITY Millemasse" and enterprise document management system "LIBINITY ECM".

"LIBINITY ECM" is featured by "scalability" which can adjust the system scale by step-by-step expansion depending on the number of the documents. The users can easily establish a full document system covering all works in an entire company to realize "compliance", "security", and "reliability". "LIBINITY Millemasse" is a high-performance filing system to store and integrate a large quantity of documents and images. It easily realizes high document management with low cost.

The reduction of CO<sub>2</sub> equivalent emission 42.3 % has been achieved through reducing the amount of papers used, and decreasing the amount of transported/distributed papers with information sharing on the WWW.

#### Hitachi Systems & Services, Ltd.

JR Shinagawa East Building, 2-18-1 Konan, Minato-ku, Tokyo 108-8250, Japan  
 Tel 81-3-6718-5853 Fax 81-3-6718-5859  
 E-mail kaz-hashimoto@hitachi-system.co.jp  
 URL <http://www.hitachi-system.co.jp/libinity/>



Screen image of "LIBINITY ECM"

## Eco-services

ES-4-004

Management - related services

library management system

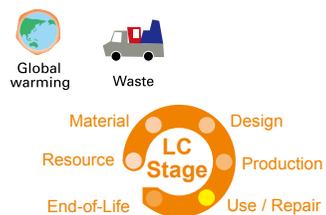
### A library system "Livre"

"Livre" is library system which Hitachi Systems & Services, Ltd. offers. The features of "Livre" are as follows.

- Easy borrowing and return of books
- Easy search for the book.
- Automated generation of various statistics concerning the books in the library "Livre" can reduce 66.6% of CO<sub>2</sub> equivalent emission.

#### Hitachi Systems & Services, Ltd.

Nagoya Lucent Tower, 6-1 Ushijimacho Nishi-ku, Nagoya 451-6028, Japan  
 Tel 81-52-569-2128 Fax 81-52-569-2132  
 E-mail h-miyazaki@hitachi-system.co.jp  
 URL <http://www.hitachi-system.co.jp/livr/>



Main Menu of 'Livre'

## Eco-services

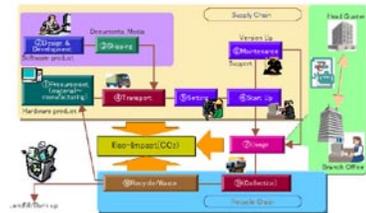
ES-4-005

Management - related services

LCA software

### System Integration Life Cycle Assessment SI-LCA

SI-LCA is a software integrated with quantitative evaluation methodology on the environmental load of IT-system & service products. The environmental load for application of an IT-system & service product is estimated on the basis of the equivalent amount of CO<sub>2</sub> emission for quantitative evaluation. The life cycle of the IT-system & service product is evaluated at multiple steps of stages; e.g. equipment manufacture, use, collection, recycle, waste, and software design and development. This methodology also calculates employment costs and environmental load cost accompanying the system development and implementation.



Assessment Stage for SI-LCA

#### Hitachi, Ltd.

Hitachi Omori 2nd Bldg., 27-18, Minami Oi 6-chome, Shinagawa-ku, Tokyo 140-0013, Japan  
Tel 81-3-5471-2745 Fax 81-3-5471-2746  
E-mail  
URL

## Eco-services

ES-4-006

Management - related services

LCA software

### Life Cycle Assessment Software "Easy-LCA"

Easy-LCA is a supporting tool to practice the life cycle assessment (LCA) effectively.

It evaluates quantitatively the influence of the product on the environment at the stage of design, and combines scientifically the results with the analysis and improvement of the product.

#### Main features

- The latest database based on the economical statistics table of the 2000 fiscal year (publicized in 2004) has been mounted.
- Assessment of the discharge of environmental loading is possible according to the distinction of units and parts.
- Comparison of an old product and the new one is possible
- Impact evaluation
- Inventory evaluation of 30 kinds including CO<sub>2</sub> / NO<sub>x</sub> / SO<sub>x</sub> is possible.

#### TOSHIBA PLANT SYSTEMS & SERVICES CORPORATION

Muza Kawasaki Central Tower, 1310, Omiya-cho, Saiwai-ku, Kawasaki-shi 212-8551, Japan  
Tel 81-44-548-7711 Fax 81-44-548-7884  
E-mail [eco.master@toshiba-tpsc.co.jp](mailto:eco.master@toshiba-tpsc.co.jp)  
URL <http://www.toshiba-tpsc.co.jp/eco/>



"Easy-LCA" screens

## Eco-services

ES-4-007

Management - related services

IT solution

### SLIMOFFICE/SLIMOFFICE-EX, solution for the strategic environment management

The product is the solution that supports the strategic management of environment issues. It carries out effectively a series of work that includes the collection of the data, the management of them, and the analysis of the environmental performance.

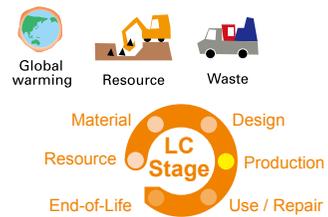
In order to clarify the issues and connect with the business activity, it is important to grasp the environment-related information such as the energy consumption, the amount of waste and the chemical substances that were used.

The product will collect information from each site, analyze them, and visualize the environment performance. It can provide the timely information and index that is needed to raise the corporate's value by means of the environmental management.

#### Fujitsu Limited

1-1 Kamikodanaka 4-chome, Nakahara-ku, Kawasaki, Kanagawa  
211-8588, Japan  
Tel 81-44-754-3413 Fax 81-44-754-3326  
E-mail <http://jp.fujitsu.com/about/csr/eco/contact/>  
URL <http://jp.fujitsu.com/about/csr/eco/>

Available in : Japan



- To improve environmental performance
- To provide this information to stakeholders



SLIMOFFICE/SLIMOFFICE-EX

## Eco-services

ES-4-008

Management - related services

IT solution

### PLEMIA/ECODUCE for the management of hazardous substances

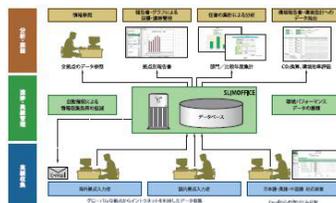
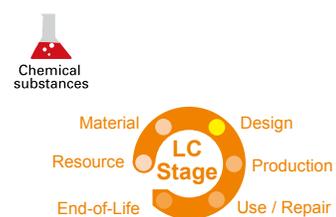
This product is a solution which supports "things making" not using hazardous substances from the design stage. The product searches the hazardous substances speedily. The product makes it possible to save energy for the enormous works which relate to the business: designing, supplying, information collecting and offering. The main feature is as follows.

- (1) "Design for Environment (DFE)" is realized. Constituent chemical substances are summarized every product, every unit, on the basis of the parts data table". Compliance with the acts of RoHS, ELV, etc and with the regulation of company is possible.
- (2) The efficiency of the inquiry-answer business has been enhanced. The process from the inquiry request to the answer has been unified. It has become possible to carry out the survey business for clients step by step, while confirming the progress. Input-output by JPG data files and output by IDMS (XMS) data file is possible.
- (3) The user can easily survey the parts, the units and the products that were made from any substances and materials. The real-time specification of products and suppliers is also possible by means of the reverse retrieval.

#### Fujitsu Limited

1-1 Kamikodanaka 4-chome, Nakahara-ku, Kawasaki, Kanagawa  
211-8588, Japan  
Tel 81-44-754-3413 Fax 81-44-754-3326  
E-mail <http://jp.fujitsu.com/about/csr/eco/contact/>  
URL <http://jp.fujitsu.com/about/csr/eco/>

Available in : Japan



PLEMIA/ECODUCE

## Eco-services

ES-4-009

Management - related services

IT solution

### Environmental integration database visibility solution

This product is a visibility solution, which visualizes the environmental information which has dispersed in the company. It realizes the unified management of the environmental information by "add-on" software.

In general, the necessary data for environmental information analysis is scattered in plural systems. When the environmental staffs of factory, office, and branch judge the validity of the environmental load in such situation, the following demands are increasing. One is to retrieve the dispersed environmental information, put the necessities together, and sum up, and the other is to want to extract the issue in the diversified viewpoint.

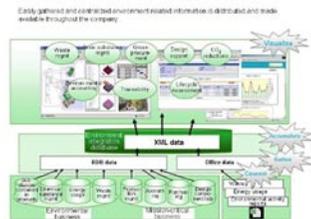
The visibility solution integrates the existing environmental related data dispersing in plural systems into the XML-DB, retrieves by combining various information from various viewpoints, and displays the result by table and graph. The thing that you wanted to do but couldn't do until now or the thing didn't even try to do it will be able.

#### Fujitsu Limited

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E-mail <http://jp.fujitsu.com/about/csr/eco/contact/>  
URL <http://jp.fujitsu.com/about/csr/eco/>

Available in : Japan

Environmental integration database visibility solution



## Eco-services

ES-4-010

Management - related services

IT solution

### Logistics Solution for business logistics

This solution supports the reduction of the environmental load in the distribution field. The support includes planning of a transverse measure for the CO<sub>2</sub> reduction in the range from the warehouse to the transport domain, grasp of the actual situation by means of IT such as GPS and in-vehicle station, and improvement of the business by selecting an optimum delivery route. For example, the improvement of mileage by 7% and a decrease of car by 5-15% have been achieved. The results suggest a large contribution to the restraint of CO<sub>2</sub> discharge. Furthermore, a synergistic effect due to both services is expected.

As for the calculation system of CO<sub>2</sub> emission, realized was the enhancement of business efficiency was realized by the automation of the preparation of the report submitted to the related government office. This contributes to the environmental management.

The solution checks the customer's distribution system structurally. Moreover, it realizes optimization of the whole of the customer's supply chain. The solution contributes to cost reduction, service improvement and environment load reduction.

#### Fujitsu Limited

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E-mail <http://jp.fujitsu.com/about/csr/eco/contact/>  
URL <http://jp.fujitsu.com/about/csr/eco/>

Available in : Japan

Logistics Solution



## Eco-services

ES-4-011

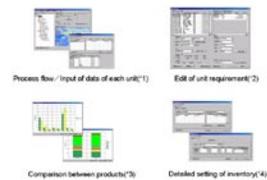
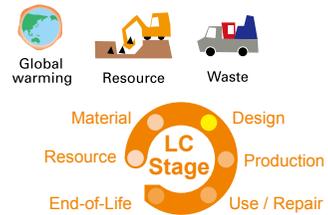
Management - related services

IT solution

### LCASLIM, a support system of Life Cycle Assessment

It is a software to estimate and analysis the environment load, for example the CO<sub>2</sub> emission in the material's life cycle ranging from its supply to its disposal, about the product which the user's company treats with now or the product which the company will develop in future.

Though it is indispensable to grasp the environmental effect of the product for the environment management, many labor is required to collect and arrange the necessary data. This software offers various functions that include the editing of the primary unit data, the comparison of the products and the inventory analysis, and thereby it supports the company's LCA.



#### Fujitsu Limited

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LCASLIM

## Eco-services

ES-4-012

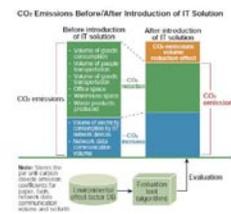
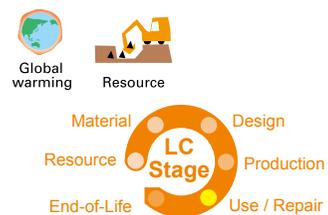
Management - related services

IT solution

### Method to quantitatively evaluate the benefits of adopting IT solutions

This is the method to teach us "how much environmental load (CO<sub>2</sub>) is reduced by the introduction of IT solutions?"

- The method shows the environment contribution effect caused by the introduction of IT solution. The effect includes the potential effect of IT solution on energy saving and resources saving and the effect due to an increase of the efficiency of duties.
- On the basis of the evaluation from the both sides (increase factor and decrease factor) of environmental load, the method demonstrates the effect of the integrated contribution to the environment.
- The method evaluates the environmental load by converting it to the amount of the discharged carbon dioxide. The method is based on the environment impact assessment technology developed by FUJITSU LABORATORIES LTD.



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CO<sub>2</sub> emissions Before/After Introductions of IT solutions

## Eco-services

ES-4-013

Management - related services

IT solution

### The "glovia.com", a solution for the assembling and manufacturing industry

This product is a solution of production control. It is applicable at any kind of assembling/ manufacturing industry. This product integrates the information of the whole of company from that of a factory, and unifies the system and the factory. It gets correctly the moving of person, thing and money, and enhances the permeability and the transmission speed of information. On the basis of the production control in the factory and the management of the materials to be purchased, CO<sub>2</sub> reduction is 30.5%. In addition, the rotation period of stock is shortened, and the indirect personnel are reduced.

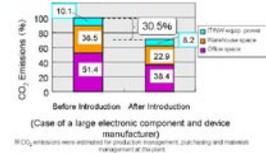
(The trial calculation is due to the method of the environment impact assessment of FUJITSU LABORATORIES LTD.)

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Global warming



Environmental Contribution Effect

## Eco-services

ES-4-014

Management - related services

IT solution

### Internet Navigware, e-learning system offering 93.1% CO<sub>2</sub> reduction

"Internet Navigware" (Internet navigation wear) is a real LMS(Learning Management System) which supports generally the steps of textbook making, learning, and grade management.

The clients can study anywhere and anytime from the Web browser screen in Internet or in Intranet environments of office and school.

The adoption of "Internet Navigware" brings the CO<sub>2</sub> reduction of 93.1%, in addition to the effective skill up of the employee, the effective use of time and distance, and the cost reduction.

(The trial calculation is due to the method of the environment impact assessment of FUJITSU LABORATORIES LTD.)

#### Fujitsu Limited

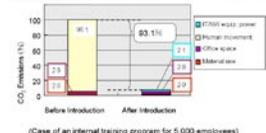
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Global warming



Resource



Environmental Contribution Effect

## Eco-services

ES-4-015

Management - related services

IT solution

### Certificate automatic grant system, "Conbrio-J".

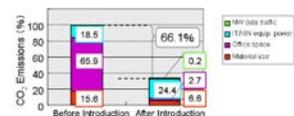
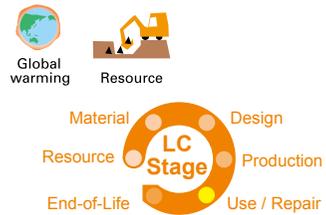
This product is an information service station that supports a variety of administrative services; the automatic grant of the certificates (the residential card, the personal-seal registration-proof), the reservation of the facilities, the guidance, etc.

Information service station for the certificate issuance yields a CO<sub>2</sub> reduction of 66.1%, as well as the promotion of the convenience of inhabitants and that of the office work efficiency of the staff.

(The trial calculation is due to the method of the environment impact assessment of FUJITSU LABORATORIES LTD.)

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(Case of a municipality with a population of 800,000)

Environmental Contribution Effect

## Eco-services

ES-4-016

Management - related services

IT solution

### Document filing software, "RAKU-2 library" offering 38.8% CO<sub>2</sub> reduction.

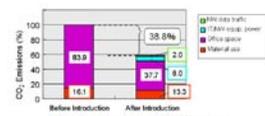
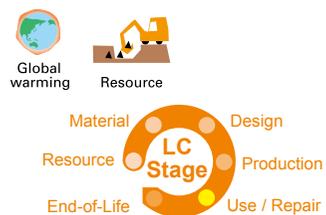
The "RAKU-2 library" is software of the document management beyond the common sense of the conventional personal computer. With the same feeling as that when using a binder every day, the user is able to storage and manage the paper documents and the electronic data.

Using of the software yields the comfortable office environment, the improvement of efficiency of the duties, and the efficient use of space due to paper-less environment. The "one touch" management of electronic documents is realized by converting paper documents to data files with scanner. The reduction of CO<sub>2</sub> is 38.8% by use of the "RAKU-2 library", in addition to the reduction of the keeping space of paper documents and the improvement of the search efficiency of documents.

(The trial calculation is due to the method of the environment impact assessment of FUJITSU LABORATORIES LTD.)

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(Case of a manufacturing company with 300 employees)

Environmental Contribution Effect

**Poynting, three-dimensional electromagnetic wave analysis software**

This software is a simulator having various functions for high frequency analysis. It supports the research and development by means of the solver based on FDTD method<sup>1)</sup> and also by means of the GUI (graphical user interface) excellent in operability.

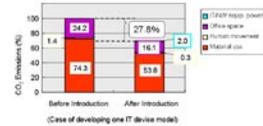
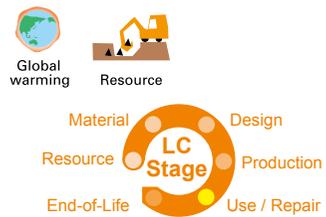
The reduction of CO<sub>2</sub> is 27.8% by use of "Poynting", in addition to the promotion of efficiency of the design and reduction of cost by the enforcement of the prior simulation.

(The trial calculation is due to the method of the environment impact assessment of FUJITSU LABORATORIES LTD.)

\*1) FDTD method is a kind of technique to calculate the behavior of electromagnetic wave by the computer, and FDTD is abbreviation of Finite-Difference Time-Domain Method. It can dissolve the Maxwell equation by finite difference method about time and space.

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Environmental Contribution Effect

**WebEDI solution, "ChainFlow", for the half-cost slip processing.**

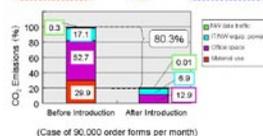
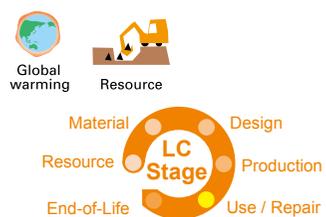
By the construction of an easy EDI system, the slip processing cost is reduced to half.

"ChainFlow" supportst the cost reduction of the whole of accepting and ordering duties by realizing "slipless" and no inspection. By the EDI system, "ChainFlow" realizes electronic slip and ASP of the slip. The reduction of CO<sub>2</sub> is 80.3% by the introduction of "ChainFlow", in addition to business efficiency improvement and reduction of the cost.

(The trial calculation is due to the method of the environment impact assessment of FUJITSU LABORATORIES LTD.)

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Environmental Contribution Effect

## Eco-services

ES-4-019

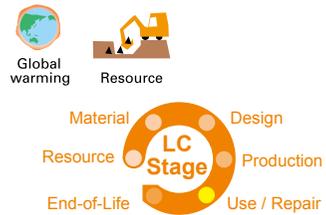
Management - related services

IT solution

### Multi-document management system "PLEMIA/eD-Binder"

This system constructs the document management system in the short term without requesting a burden of the skill to users. Furthermore, its high-speed search function realizes that the datum of the purpose is drawn from a large quantity of data in a moment.

The reduction of CO<sub>2</sub> is 89.4% by the introduction of "PLEMIA/eD-Binder", in addition to the efficient use of the space and the improvement of business efficiency due to the unification of the contents (document, drawing, etc) in the company. (The trial calculation is due to the method of the environment impact assessment of FUJITSU LABORATORIES LTD.)



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Environmental Contribution Effect

## Eco-services

ES-4-020

Management - related services

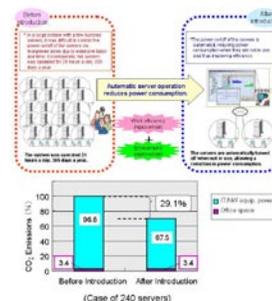
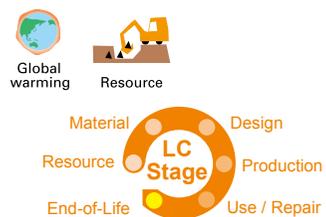
IT solution

### Systemwalker Operation Manager

This product realize the automatic driving of duties form power supply injection to power supply cutting through start / stop of the service. Moreover, Furthermore, it realizes the automatic business operations for scheduling of job, operation, monitoring and others, and realizes stable work and low-cost operation.

By the utilization of this product, 29.1% of CO<sub>2</sub> is reduced. The efficiency of server operation is improved and the power consumption is reduced by the power ON/OFF automation of the server.

(The trial calculation is due to the method of the environment impact assessment of FUJITSU LABORATORIES LTD.)



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Environmental Contribution Effect



## Eco-services

ES-4-023

Management - related services

IT solution

### "Ub! Point", a knowledge shared learning system

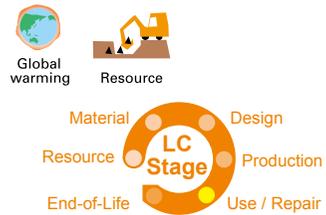
This product is a knowledge shared learning system of the on-demand type. The system delivers the streaming picture and sound, and the document made by PowerPoint and HTML, after synchronizing them. By utilizing this product (the preparation of moving picture by capturing of the screen, and the delivery of information), it is able to make up knowledge information simply and swiftly and to transmit knowledge information.

The introduction effect of "Ub! Point" is a reduction of 82.6% of CO<sub>2</sub> in addition to the enhancement of business efficiency and the reduction of moving cost due to the switching from the cluster education to the imaging education.

(The trial calculation is due to the method of the environment impact assessment of FUJITSU LABORATORIES LTD.)

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Environmental Contribution Effect

## Eco-services

ES-4-024

Management - related services

IT solution

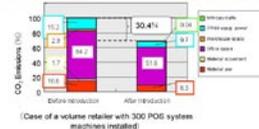
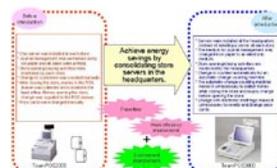
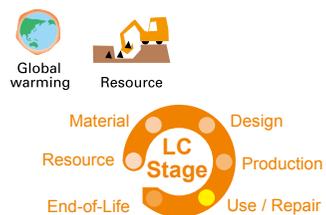
### "GlobalSTOREIII", a POS system for mass sale shops.

This POS system is for mass sale shops and realizes "the headquarters concentrated server system" which put together the store server function of plural store. The system does the business judgement speedy by using real-time information. It promotes the efficiency of system use, so the manpower can be concentrated on original sale duties. It is an advanced POS system realizing the strategic store management by headquarters concentration type server system.

The effect of "GlobalSTORE" is a CO<sub>2</sub> reduction of 30.4% in addition to "paper-less" and the improvement of business efficiency. (The trial calculation is due to the method of the environment impact assessment of FUJITSU LABORATORIES LTD.)

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Environmental Contribution Effect

## Eco-services

ES-4-025

Management - related services

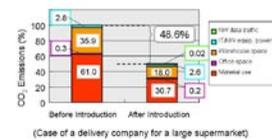
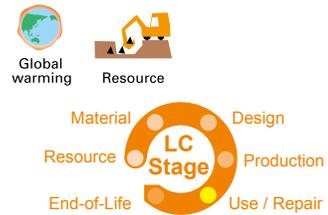
IT solution

### "Interstage List Works" for electronic sales-slip management

This product is a electronic sales-slip system which put together the sales-slips output from various platforms and does the unified management by the use of electronic sales slip. The system provides the base of sales slips management in the internet environment, which covers the assortment of the electronic sales slips, the save, the management, the circulation, and the utilization. The system is equipped with anti-security measures and information sharing environment. It realizes the enhancement of business efficiency and the reduction of running cost. The effect of "Interstage List Works" is a CO<sub>2</sub> reduction of 48.6%, in addition to the improvement of business efficiency and cost reduction due to the realization of effective management of electronic sales slips. (The trial calculation is due to the method of the environment impact assessment of FUJITSU LABORATORIES LTD.)

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Environmental Contribution Effect

## Eco-services

ES-4-026

Management - related services

IT solution

### "Interstage List Creator", for the design and formation of various sales slips

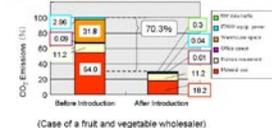
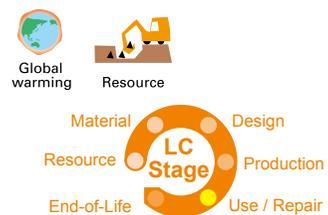
This software makes and output various clear sales slips simply and safely, supports internal control, and promote the improvement of business efficiency and reduction in cost. It is easily applicable to the sales slip which has the complexity and fineness peculiar to Japan, and its practical use.

It realizes the change from the reporting by the output of paper-made sales slip to by electronic data, by use of high-speed formation by the PDF format. The effect of "Interstage List Creator" is a CO<sub>2</sub> reduction of 70.3%, in addition to the cost reduction due to the electronic report.

(The trial calculation is due to the method of the environment impact assessment of FUJITSU LABORATORIES LTD.)

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Environmental Contribution Effect

## Eco-services

ES-4-027

Management - related services

Consulting service

### Consulting service for geothermal and hydraulic power generation

Mitsubishi Materials have long been actively involved in the development and utilization of renewable energy sources, such as geothermal and hydraulic energy, taking advantage of the technology we have acquired in the underground resources business.

We have six hydroelectric power plants (approx.17MW total) and two geothermal power plants: the Ohnuma Geothermal Power Plant (9.5MW:since1974) and the Sumikawa Geothermal Power Plant (50MW:since1994), operating at Akita Prefecture in Japan. These power plants generate clean electric power of around 530,000MWh per year(2004). Geothermal power generation utilizes steam energy extracted from underground by drilling wells as deep as 2,000 meters.

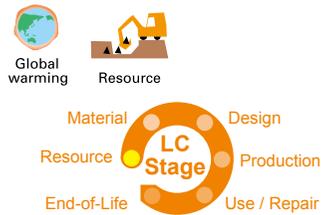
It requires specialized techniques and technology to utilize effectively this kind of high temperature-underground resources in all stages of site survey, drilling, and maintenance of output power.

We have acquired the necessary techniques and technology through our direct involvement in developing and operating our two geothermal power plants. With this experience, we are actively participating in geothermal area surveys and technological development projects at home and abroad.

#### Mitsubishi Materials Corporation (Geothermal & Electric Power Center)

1-297, Kitabukuro-cho, Omiya-ku, Saitama-shi, Saitama 330-8508, Japan  
Tel 81-48-641-5624 Fax 81-48-641-5632  
E-mail  
URL <http://www.mmc.co.jp/english/corporate/business/energy.html>

Available in : Global



Ohnuma Geothermal Power Plant (9.5MW)

## Eco-services

ES-4-028

Management - related services

electrical machinery, equipment and supplies

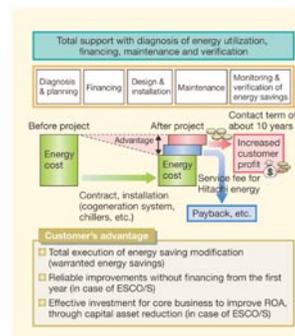
### ESCO(Energy Service Company)

The ESCO business forms a new business scheme that offers the comprehensive services for energy savings to customers, and covers cost required for repairing energy saving equipments with fee saved by energy saving.

The service includes energy saving diagnosis, energy saving proposal, equipment installation, finance, and maintenance. The project aims to substantially reduce energy consumption and CO<sub>2</sub> emissions. Taking advantage of the Group's collective strengths, Hitachi has already achieved remarkable success in a wide variety of sites, including factories, hospitals, office buildings, and research facilities. In projects undertaken between 2000 and 2007, it has achieved an aggregate reduction of approximately 220,000 tons per year of CO<sub>2</sub> emission reductions

#### Hitachi, Ltd., Urban Planning and Development Systems

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URL <http://www.hitachi.co.jp/products/urban/energy/index.html>



Concept of shared savings ESCO business

ESCO(Energy Service Company)

## Eco-services

ES-4-029

Management - related services

energy-saving service

### Energy-Saving Service Solution [HDRIVE]

HDRIVE, is a service that helps industrial customers conserve energy without paying any initial costs. Hitachi offers to install inverters and high-voltage motors for equipments in which energy-saving can be expected, e.g. for fans, blowers and pumps, at customer facilities free of charge.

Under a ten-year contract, a fixed percentage of the cost savings generated from monthly energy savings is applied as a service charge.

The amount of energy saved is calculated from the equipments operating data, measured by monitoring devices.

HDRIVE also offers a new financing approach that prioritizes the customer's cash-flow and reduces investment risks when the customer changes their operations.

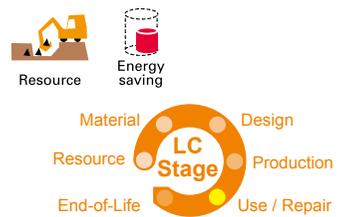
#### Hitachi, Ltd.

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Tel Fax

E-mail [project\\_hdrive@pis.hitachi.co.jp](mailto:project_hdrive@pis.hitachi.co.jp)

URL <http://www.hitachi.co.jp/Div/hitachi/inv/hdrive/> (Japanese Only)



Outline of Energy-Saving Service Solution

## Eco-services

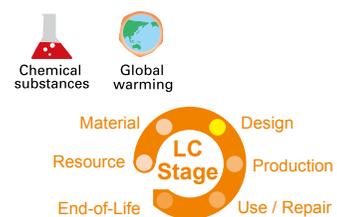
ES-4-030

Management - related services

system integrator

### Green Procurement and Chemical Substance Management system

- 1) Accelerated data collection from suppliers through this web based database system
- 2) Costs and labor saving through enhancing efficiency of tasks needed to comply with RoHS directive
- 3) Functions to evaluate conformity with chemical substance composition requirement specific to each legal and customer requirements at the level of components of a product.
- 4) Automated request generation to suppliers who have not yet registered relevant data files concerning their products through checking data records.



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E-mail

URL



## Eco-services

ES-4-031

Management - related services

system integrator

### Professional Design & System Integrator for Clean Energy

**GRENZONE** provides clean energy and energy efficient solutions for sustainable development in support of global effort to improve the environment. Our services include:

1. System Consultancy and Design
2. Engineering, Procurement, Installation & Commissioning
3. Maintenance Service
4. Training on Renewable Energy Technology

Apart from the above, our company engages heavily in product development. We are continuously improving our products and developing new solutions to meet the increasing need for renewable energy and higher energy efficiency.

Please write to us for our list of reference projects.

#### GRENZONE PTE LTD

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 Tel 65-6872-2350 Fax 65-6872-5610  
 E-mail [info@grenzone.com](mailto:info@grenzone.com)  
 URL <http://www.grenzone.com>



Available in : Worldwide

System Integration

## Eco-services

ES-4-032

Management - related services

LCA software

### LCA software "JEMAI-LCA Pro"

JEMAI-LCA Pro is LCA software developed by the Research Center for Life Cycle Assessment, National Institute of Advanced Industrial Science and Technology (AIST) and Japan Environmental Management Association for Industry (JEMAI). JEMAI-LCA series have been released since 2000, and over 1000 copies have been sold, occupying the largest share in Japan's LCA software market. Now, English version is available. The software is equipped following functions:

- The modifiable inventory database containing a wide range of processes where the resource consumption and emissions.
- New data adding through process sheet or visual input output sheet.
- Process tree management.
- Estimation of environmental impact in overseas countries using electricity data and import model of 200 countries/regions.
- Inventory analysis and impact assessment including Japanese and European methods.
- Report writing support based on the format outlined in the ISO 14040s specifications.

#### Japan Environmental Management Association for Industry (JEMAI)

2-1 Kajicho 2-chome, Chiyoda-ku, Tokyo 101-0044, Japan  
 Tel 81-3-5209-7708 Fax 81-3-5209-7716  
 E-mail [jemai-lca@jemai.or.jp](mailto:jemai-lca@jemai.or.jp)  
 URL <http://www.jemai.or.jp/>



Available in : Worldwide

JEMAI-LCA Pro

## Eco-services

ES-5-001

Others

transportation service by rail

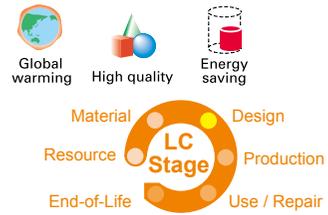
### The series N700 with enhanced energy efficiency

The Tokaido and Sanyo Shinkansen, playing an important role in the main intercity transportation in Japan, can be regarded as a transportation mode with more energy-efficient performance (e.g. lower CO<sub>2</sub> emissions per unit carriage of passengers) compared with other transportation modes such as airplanes. The Series N700, newly developed and commercially launched in the summer 2007 with the three concepts of "The fastest cutting edge rolling stock", "Superior comfort", and "Superior environmental performance", realized further energy efficiency, for example, by reducing air resistance as a result of the thorough pursuit of smooth body surface by developing a new nose shape and cover-all hood, and by introducing the body inclining system.

**Central Japan Railway Company,  
West Japan Railway Company**

JR Central Towers, 1-1-4, Meieki, Nakamura-ku, Nagoya, Aichi 450-6101, Japan  
4-24, Shibata 2-chome, Kita-ku, Osaka, 530-8341, Japan  
Tel Fax  
E-mail  
URL <http://jr-central.co.jp>, <http://www.westjr.co.jp>

Available in : Tokaido and Sanyo Shinkansen



series N700

## Eco-services

ES-5-002

Others

transportaiton service by rail

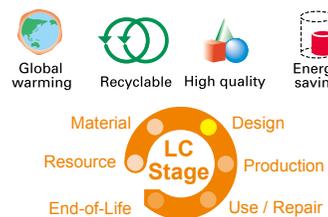
### Environmentally Friendly E231 Series

The E231 series reduces operational energy consumption by 50% compared to that of the 103 series, and in terms of weight, 90% of the E231 series railcar can be recycled. Servicing the Yamanote, Takasaki, Utsunomiya, and other metropolitan lines, the E231 series currently realized the most environmentally friendly design.

**East Japan Railway Company**

2-2, Yoyogi 2-chome, Shibuya-ku, Tokyo 151-8578, Japan  
Tel 81-3-5334-1122 Fax  
E-mail [eco@jreast.co.jp](mailto:eco@jreast.co.jp)  
URL <https://www.jreast.co.jp/eco/>

Available in : Metropolitan Area



E231 series run on the Utsunomiya line

## Eco-services

ES-5-003

Others

transportation service by rail

### E2-Series of Railcars Conserved Energy

As for energy consumption, by making improvements such as reduction in the weight of railcar bodies, the Shinkansen's energy consumption was reduced by about 30% compared to 20 years ago. Regenerative brakes utilize energy generated during the braking, and return this electricity to the overhead wires.



#### East Japan Railway Company

2-2, Yoyogi 2-chome, Shibuya-ku, Tokyo 151-8578, Japan  
 Tel 81-3-5334-1122 Fax  
 E-mail [eco@jreast.co.jp](mailto:eco@jreast.co.jp)  
 URL <http://www.jreast.co.jp/eco/>



Available in : Touhoku, Jouetsu, Nagano Shinkansen

E2-series for Asama and Hayate Shinkansen trains

## Eco-services

ES-5-004

Others

transportation service by rail

### Operation of the world's first diesel hybrid railcar

In July 2007, the world's first diesel hybrid railcars, the Kiha E200 Type, entered service on the Koumi Line. Diesel hybrid railcars operate efficiently by using electricity generated by a diesel engine to charge a battery which reduces emissions and by regenerative brakes, which charge the battery when braking.

Efficiency in tests was approximately 20% better than a standard diesel railcar\*. The diesel hybrid railcar is quiet when idling at a station (approx. 30dB). Hazardous substances in the exhaust, such as NOx and graphite, are reduced approximately 60%.

\* Results are based on test runs on level ground. On the Koumi Line, which has steep grades, efficiency improved by approximately 10%.



#### East Japan Railway Company

2-2, Yoyogi 2-chome, Shibuya-ku, Tokyo 151-8578, Japan  
 Tel 81-3-5334-1122 Fax  
 E-mail  
 URL <http://www.jreast.co.jp/eco/>



Available in : Koumi Line

The world's first diesel hybrid railcars kiha E200 Type

## Eco-services

ES-5-005

Others

insurance

### Eco-friendly Automobile Insurance of a Customer Participation Type through the Website

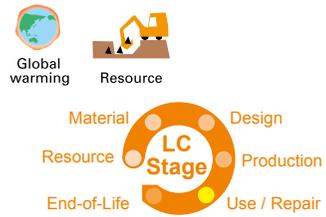
We will introduce a new system of automobile insurance under which the clauses are shown on the homepage of our company ("the web clauses"), and under which the understanding of the clauses is made much easier by means of the incorporated link and terminology search functions. (Scheduled to be provided in May, 2008)

In the case that customers say that "insurance clauses in paper are no longer necessary" because of the easiness to understand and convenience they will really feel toward the web clauses, we can expect a large-scale reduction in the use of paper and also make contributions to the mangrove reforestation project, etc. We contribute two mangrove trees per one contract. According to our company's research, the total volume of CO<sub>2</sub> which two trees absorb in their lifetime is almost equal to the volume of CO<sub>2</sub> an ordinary automobile discharges in covering 1,000 km.

This attempt, the first in the Japanese non-life insurance industry, tackles the problem of global warming by the joint efforts of customers, agents and our company in the area of automobile insurance which is the most familiar to our customers.

#### Tokio Marine & Nichido Fire Insurance Co., Ltd.

1-2-1 Marunouchi, Chiyoda-ku, Tokyo 100-8050, Japan  
 Tel Fax  
 E-mail [mailgw04@tmnf.jp](mailto:mailgw04@tmnf.jp)  
 URL <http://www.tokiomarine-nichido.co.jp/>



Available in : Japan

Mangrove

## Eco-services

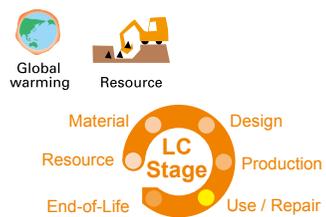
ES-5-006

Others

derivative products

### Contribution to the Environmental Field by Providing Derivative Products

Tokio Marine Nichido provides derivative products to commercial clients who face risks of property damage and loss of profits due to natural disasters such as climate change, typhoons and earthquakes. Conventional insurance products which indemnify losses caused by wind and earthquake conditioned the indemnification to an actual loss occurring, however, for derivative products the decision of a settlement and the amount is decided by climate indexes and target indexes such as seismic intensity, so it is possible to apply the product to a wide variety of risks such as the increase in expense or decrease in profit due to the increased number of typhoons approaching land.



#### Tokio Marine & Nichido Fire Insurance Co., Ltd.

1-2-1 Marunouchi, Chiyoda-ku, Tokyo 100-8050, Japan  
 Tel Fax  
 E-mail [mailgw04@tmnf.jp](mailto:mailgw04@tmnf.jp)  
 URL <http://www.tokiomarine-nichido.co.jp/>

Image of Natural Disaster

Eco-services

ES-5-007

Others  
books

A. Miyazaki & M. Miyazaki, *Love, Peace & Green, Missing Peace 2*, Shogakukan, Tokyo

This book is a photographic travel sketch of Greenland, which was planned and produced by the 2025PROJECT which offers the vision that the earth will be in sustainable state in 2025. To make the vision a reality, it works actively to find "missing peace". Here, the "peace" has two meanings; one is the literal meaning and "serenity"; the other is the homonymy and a "piece" of key to solve the puzzle of finding out peace. A feature of this book is carbon offset. Until we put the book on sale, CO<sub>2</sub> is discharged by boarding airplane to report and take a photograph, by producing and printing, and by carrying to bookstores, etc. Total CO<sub>2</sub> is evaluated to be 33.1 tons. To offset this CO<sub>2</sub>, a royalty of 75 yen per 1 copy is donated by A. & M. Miyazaki to the Greenhouse-gas Reduction Project through the Carbon Offset Japan. The money is equivalent to 37.5kg of CO<sub>2</sub>, and so 33.1 tons /37.5 kg = 883. The carbon offset of this book is therefore completed at 883 copies, and the money of extra copies is used in further CO<sub>2</sub> reduction.



Global warming



2025PROJECT

Setagaya, Tokyo 154-0011, Japan  
Tel Fax  
E-mail  
URL [http://www.2025.jp/pc/english/index\\_e.htm](http://www.2025.jp/pc/english/index_e.htm)

Eco-services

ES-5-008

Others

energy saving solution for the comfort air conditioning

Air conditioning control system for building, of comfort and energy saving type

"Neuro-PMV®" is a comfort control system of the air conditioning, and it can perform energy saving without marring the user's amenity. As the index of the control, PMV (Predicted Mean Vote: ISO7730) is used. It can change the setting temperature in real time so as to do uniform PMV control. The radiation temperature in the calculation of PMV is determined by IT, so a special sensor is unnecessary. The system is applicable to old building as well as new one. In addition, we promote the "ESCO" business to realize the energy saving on the whole of building. We offer the total service including planning, construction and maintenance about the facilities of air conditioning, heat source, lighting, and sanitation.



Global warming



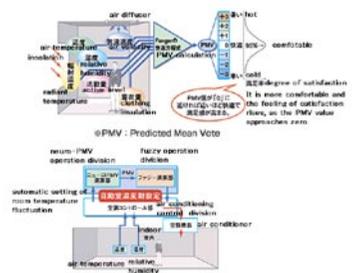
Energy saving



- **Energy Saving:** The energy saving is tried by improving the control and operation of air conditioning equipment. It is possible to realize the energy saving, while keeping the initial cost lower than the replacement of facility.

TOSHIBA CORPORATION Social Infrastructure Systems Company

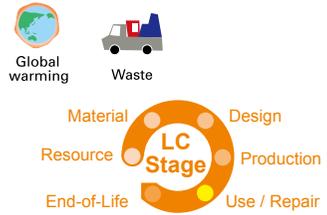
1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan  
Tel 81-3-3457-4368 Fax 81-3-5444-9280  
E-mail  
URL [http://www3.toshiba.co.jp/snls/bldg/index\\_j.htm](http://www3.toshiba.co.jp/snls/bldg/index_j.htm)



Predicted Mean Vote(up side) ,  
Energy saving solution for the comfort air conditioning(down side)

**Environment Education Contents Series "Environmental Communication Club"**

Environmental communications club is an environmental educational contents to understand global environmental problems and the negative environmental impact , and to consider the environment. Contents include Animation and Games. User can enjoy and learn the environmental issues. These contents are used to study by school child's class trip in the garbage incinerator and the recycling plaza of the municipality.



**TOSHIBA PLANT SYSTEMS & SERVICES CORPORATION**

Muza Kawasaki Central Tower, 1310, Omiya-cho, Saiwai-ku, Kawasaki-shi 212-8551, Japan  
 Tel 81-44-548-7711 Fax 81-44-548-7884  
 E-mail [eco.master@toshiba-tpsc.co.jp](mailto:eco.master@toshiba-tpsc.co.jp)  
 URL <http://www.toshiba-tpsc.co.jp/eco/>



Various Contents



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SANSHIN KAKO CO., LTD. .... EP-6-024, EP-6-025, EP-6-028, EP-6-029  
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# **Members list**



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(as of 1 February 2008)

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# APO Green Productivity Advisory Committee for Establishment of Eco Products Database

(as of 1 February 2008)

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Institute of Industrial Science & International Research Center for  
Sustainable Materials  
University of Tokyo

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# Eco-products Database 2008 Working Group

(as of 1 February 2008)

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Mr. Hiromi Mori                      International Green Purchasing Network (IGPN)

Mr. Katsuyuki Nakano                      Japan Environmental Management Association for Industry (JEMAI)

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Dr. Katsutoshi Yamada                      National Institute for Materials Science (NIMS)

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Ms. Shoko Tsuda                      Society of Non-Traditional Technology (SNTT)

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## ● Acknowledgements

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Ms. Chie Nakaniwa                      Japan Environmental Management Association for Industry (JEMAI)

Prof. Tetsuya Nagasaka                      Tohoku University

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(as of 1 February 2008)

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E-mail: [ecomat@sntt.or.jp](mailto:ecomat@sntt.or.jp)

<http://www.sntt.or.jp/Eng.html>

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E-mail: [ilcaj@sntt.or.jp](mailto:ilcaj@sntt.or.jp)





# PR space for environmental programs



Hitachi, Ltd.  
TOSHIBA CORPORATION  
MU COMPANY LTD.



Nano-ionics materials group, fuel cell materials group, NIMS

INAX Corporation  
JIPM-Solutions co.,Ltd.



NIKKEN SEKKEI LTD

SARAYA CO.,LTD.

SEIKO EPSON CORPORATION



Tokio Marine & Nichido Fire Insurance Co., Ltd.

Housing & Development Board / United Premas Limited

NIKON CORPORATION

Mitsubishi Electric Corporation



# Let's take a look at Hitachi Group's Forests



## Sanctuary of wild birds

Kyushu Works of Hitachi Metals, Ltd. has expanded its woods by planting trees over the years. Today, various wild birds visit our plant throughout the year. It has also been designated by Fukuoka Prefecture as an outstanding afforested plant.



## Encounters with "Yezo-sika deer"

Look at cute Yezo-sika deer!  
Yezo-sika deer inhabit Hokkaido, a northern island of Japan. You can see a herd of Yezo-sika deer at the Urahoro Test Field of Hitachi Construction Machinery. They eat leaves, grass, and buds there!



## Natural springs and swans!

The Hitachi Central Research Laboratory is located in the undisturbed natural landscape of Kokubunji, Tokyo. Water from the natural springs on site forms a pond, a home to swans and a source of the No River which flows into the Tama River.



**"Do not disturb good trees, but build around them"**

This is the policy of Mr. Namihei ODAIRA the founder of Hitachi, Ltd.,  
Today we have inherited his intention, and plan construction of facilities with minimal disturbance to the natural environment.



Hitachi Group will suppress 100 million tons of annual CO<sub>2</sub> emissions induced by Hitachi products and services worldwide by fiscal 2025 through our "Environmental Vision 2025".

**Where do you imagine factories and research laboratories are located?  
Hitachi Group factories and research laboratories  
have rich nature in their sites.  
Through trying to maintain this natural environment,  
we contribute to conservation of ecosystems.**



### Home of a family of pheasants

The open grounds of Hitachi Koki Co., Ltd. Sawa Plant in Ibaraki Prefecture have been inhabited by wild pheasants for more than ten years. As a natural environment preservation area, the company has left the place in its natural state without cutting the grass.



### A garden with more than 10,000 trees

The Hitachi Institute of Management Development in Abiko, Chiba Prefecture is surrounded by 10,000 trees of more than 50 species, including a 300-year-old Chinese black pine. The extensive garden is open to the public twice a year, in spring and in fall, so be sure to come visit us.

 **Hitachi Group systems are working hard every day to preserve nature**



### “Wood Recycler”

The wood recycler is a machine used to grind waste wood and logs. The ground wood is used to make compost, animal beds, fuel, etc.

Related page 289

### “Air Diffusion Simulation System”

This computer system forecasts how pollutants spread in the air. It's widely used in environmental management of factories.

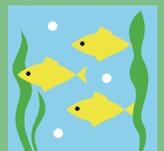


### “Ballast Water Purification Systems”

This is useful for conservation of ecosystems in the sea by removing organisms in ballast water (seawater loaded into ships to keep their balance) using coagulation and magnetic separation methods.

This environmentally conscious system does not use any sterilizer.

Related page 326

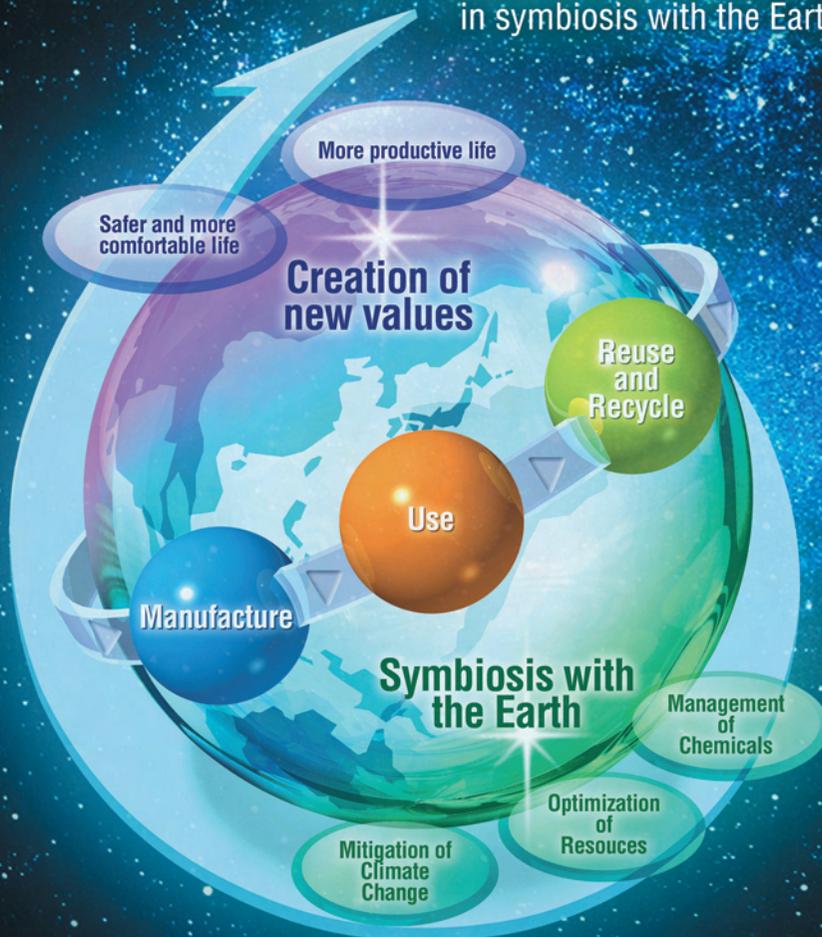


# For Energy and For the Environment of Planet Earth. Toshiba.

Toshiba Group has launched Environmental Vision 2050, an initiative to raise the Group's overall eco-efficiency by a factor of 10 by fiscal 2050 compared with fiscal 2000.

## Environmental Vision 2050.

Toshiba Group promotes environmental management towards "People lead fruitful life in symbiosis with the Earth"





Highly efficient turbine for thermal power generation

## A flourishing society in harmony with planet Earth

### [ Power generation ]

A 25%<sup>(\*1)</sup> reduction in CO<sub>2</sub> emissions has been achieved as a result of a dramatic improvement in thermal power generation efficiency.

( \*1 ) In the case of 1,500°C-class combined power generation compared with LNG-fired power generation with the same output



Super Flex Modular Chiller

## Curbing the overheating of planet Earth

### [ Energy use in cities ]

Improved heat exchanger aeration performance of Toshiba's unique X Frame, introduction of a modular configuration and adoption of high-efficiency refrigerant have cut CO<sub>2</sub> emissions by 60%<sup>(\*2)</sup>.

( \*2 ) Compared with a gas absorption chiller/heater system (equivalent to 300USRT) (Source: Toshiba)



LCD TVs REGZA 37C3500

## Keeping the beauty of planet Earth fresh

### [ Energy use in the home ]

REGZA LCD TVs deploy Toshiba's unique New Meta Brain Pro image processing circuitry to stunning effect, achieving superb picture quality while slashing power consumption. CO<sub>2</sub> emissions are cut by 55%<sup>(\*3)</sup>.

( \*3 ) Compared with the 37L4000, a Toshiba TV model introduced in 2003



NEOBALL-Z Real

## Bringing a smile to the face of planet Earth

### [ Energy use in the home ]

Power consumption of the NEOBALL-Z Real, Toshiba's latest self-ballasted compact fluorescent lamp, is one fifth<sup>(\*4)</sup> of that of an incandescent lamp. Light emission throughout the lamp, as same as an incandescent lamp, was achieved. And availability for its luminaire was improved, due to similar shape of an incandescent lamp.

( \*4 ) Compared with Toshiba's 60W-type white lamp (LW100V54W55)

---

**Shouldering our responsibilities as a corporate citizen of planet Earth,  
we are taking the lead in working for a better global environment.**

**Toshiba pursues eco-performance in every phase of power generation, distribution and use.**

Contributing to preservation of Environment of the Earth, also to  
Saving of Manufacturing costs of various factories on the Earth

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**MU MIXING ELEMENT**

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- Mass velocity of liquid:  $2 \sim 9 \times 10^5 \text{ kg/m}^2 \cdot \text{hr}$
- Max. possible diameter of MU Mixing Element: 3,000 mm.  
( In case applied to gas absorption, exhaust gas of  $2.4 \sim 3 \times 10^5 \text{ m}^3/\text{hr}$  will be cleaned on one column)



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18-8, Uenokoen, Taito-ku, Tokyo,  
110-0007 JAPAN

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## Introduction of Nano-ionics Materials Group, Fuel Cell Materials Center (NIMS)

Nano-ionics materials group develops quite high quality fuel cell materials using a combined approach between ultimate analysis (HR-TEM, Analytical TEM, SPring8) and processing route design. So far, nano scale structural modification in the fuel cell materials (electrodes and electrolytes) has not been analyzed yet. Also nobody believes that we have a chance to maximize the physical properties by a design of nano-scale structure in fuel cell materials. We already published more than 25 papers in international journals within two years. Please visit our home page if you are interested in our research activity.

<http://fuelcellmaterials.jp/en/>

### Research Activity of Nano-ionics Materials Group, Fuel Cell Materials Center, NIMS

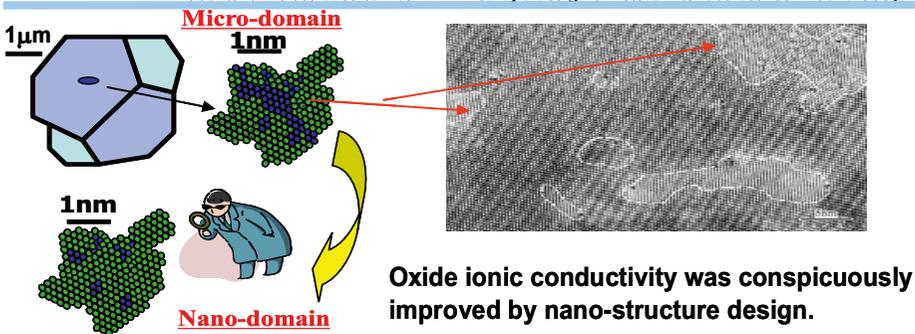


Toshiyuki MORI, Je-Deok KIM, Fei YE

## - From Nano-scale to Macro-scale design -

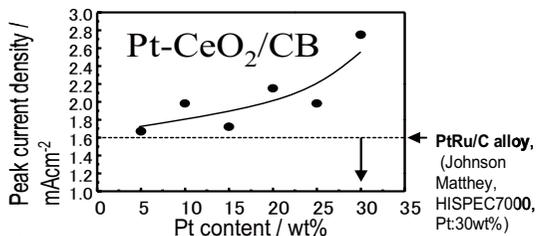
### Research impacts

- Oxide ionic conducting properties and oxide ionic domain were drastically improved by a design of nano scale structure and composition which was under detectable level of standard X-ray analysis.
- Performance of Polymer type fuel cell can be improved by a design of interface between organic and inorganic in hybrid compound.
- Pt content in electrodes can be minimized by a design of hetero-interface between Pt and CeO<sub>2</sub>.

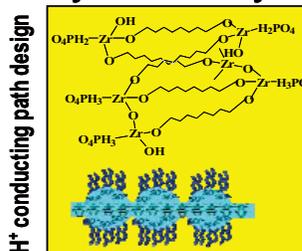


### Nano-bulk structure design

#### Composite Electrode Material



#### Hybrid Electrolytes



H<sup>+</sup> conducting path design

### Interfacial nano-structure design

Contact details: Toshiyuki Mori ([mori.toshiyuki@nims.go.jp](mailto:mori.toshiyuki@nims.go.jp))





**Protecting our water and giving life to the soil.  
INAX's efforts toward the environment**

Our planet is vibrant with life. The source of its vitality is water and soil. To hand down the beauty and bounty of the Earth to future generations, INAX is protecting the water and giving life to the soil through our advanced technologies. We are developing products for ecological living, providing happiness and wellbeing for all.

**INAX Corporation**

URL <http://www.inax.co.jp/> E-mail [inaxpr@i2.inax.co.jp](mailto:inaxpr@i2.inax.co.jp)



For Precious Life

# **We Love the Earth**

**JIPMS/TPM contributes to the realization of  
Earth-Friendly Manufacturing Environment**



<http://tpm.jipms.jp/>

**JIPM-Solutions co.,Ltd.**

# GREEN



Our aim is to ensure user comfort and achieve net-zero energy consumption for a sustainable future.

# ICONIC



We create iconic designs that in the course of time become scenic landmarks. It's a timeless architecture.

# HIGH-TECH



We pursue the creation of attractive architectural spaces through innovative technologies.

# INTEGRATIVE



In our exploration of design potential, we create new values through the active integration of diverse concepts.

NIKKEN  
SEKKEI

Nikken Sekkei is a Japan-based comprehensive consulting firm providing city and urban planning, architectural design, structural engineering, mechanical & electrical engineering and landscape design as well as peer review services.

- One stop services
- Approximately 2,300 specialist staff
- Established in 1900
- 108 years in business
- Accomplishment of over 20,000 projects
- Global activities in more than 40 countries

<http://www.nikken.co.jp>

Japan

Borneo

# Making a healthy environment our primary concern.

Precious rainforest is being lost to the expansion palm oil plantations across the island of Borneo. Saraya Co., Ltd. and patrons of Yashinomi Detergent are working to protect Borneo's fragile ecosystem.

Plantation expansion



## Preserving the Green Corridor of the Borneo rainforest.



### The Borneo Asian Elephant

The Borneo asian elephant is a docile species of elephant inhabiting the island of Borneo. These elephants face extinction through the requisition of land for palm oil production. Less than 2000 of these gentle creatures remain in their treated habitat.

**SARAYA**  
<http://www.saraya.com/>

**In Japan, Saraya donates 1% of Yashinomi Detergent sales to the Borneo Conservation Trust.**

Saraya is working to protect this threatened rainforest with the help of Yashinomi Detergent customers.



The Borneo Conservation Trust is the official trust authorized by the state of Sabah, Malaysia which focuses on recovering plantation lands along the rivers, known as the Green Corridor, so that wild animals, including the Borneo asian elephant, can migrate freely to areas untouched by plantation owners. <http://www.zeri-bct.jp/>



Trust Epson to make the world more beautiful



## Micro Piezo technology: generating beauty, regenerating the environment.

Epson's unique Micro Piezo technology is an inkjet technology that allows users to precisely control the flow of ink, enabling gorgeous, vivid, colorful printing. By being adaptable to a diverse range of media and production processes, our technology has taken printing beyond the realm of colorful printing. What's more, it is coming to be recognized as pioneering green technology as well.

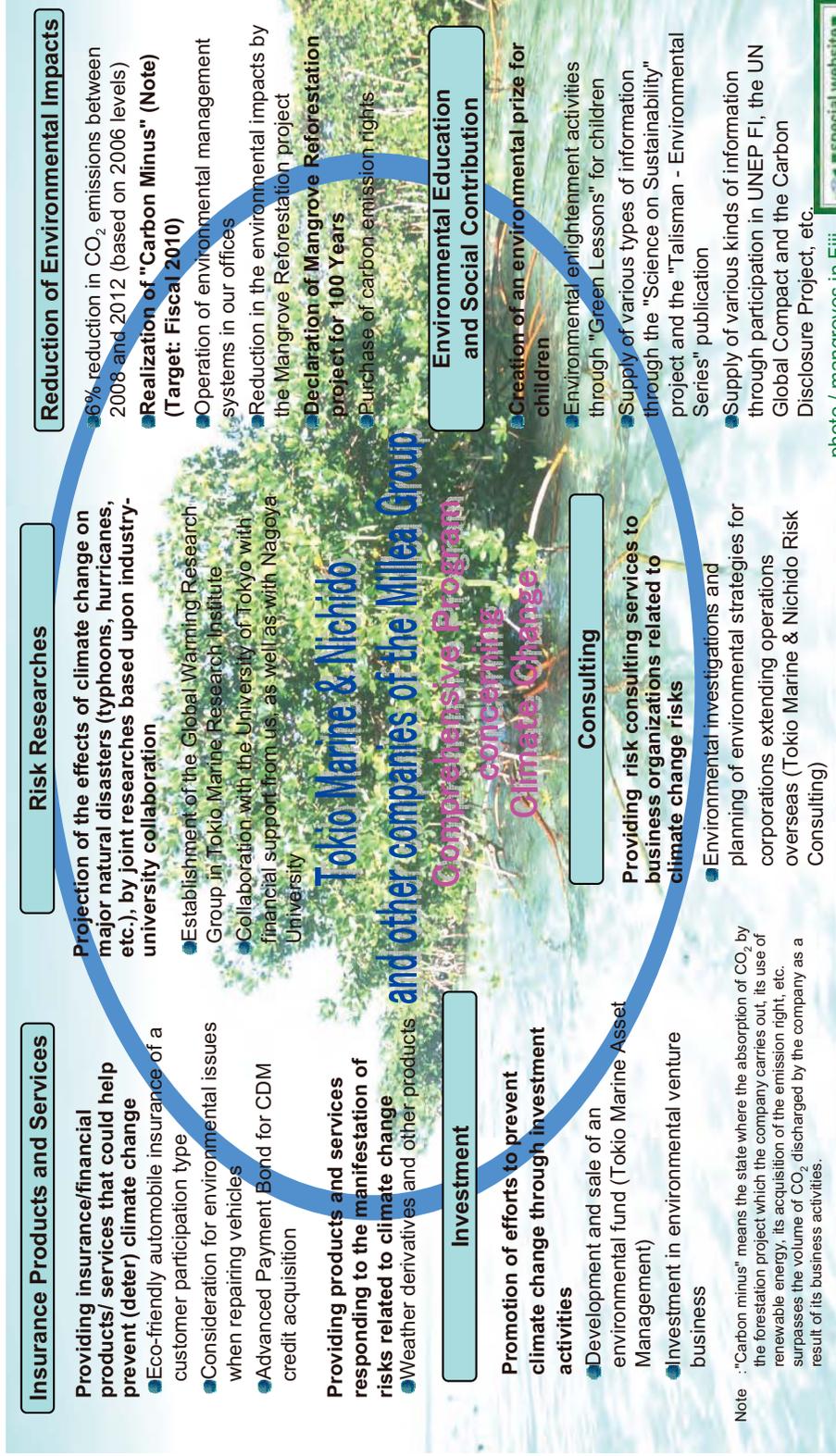
Because our Micro Piezo Technology has made precision printing possible, it has also helped to shorten processing time, reduce the amount of materials and space required, and lessen energy consumption. In short, it's helping to reduce the burden manufacturing places on our environment. Epson is dedicated to continued research and development into responsible technologies that can work in harmony with our natural environment.

For details about Micro Piezo Technology, see <http://www.epson.co.jp/e/technology/micropiezo>

# Tokio Marine & Nichido Fire Insurance Co., Ltd.

<http://www.tokiomarine-nichido.co.jp/english/index.html>

Tokio Marine & Nichido Fire Ins., Co., Ltd. of the Millea Group and other companies of the group consider climate change to be one of the greatest risks faced by humanity as a whole. In order to proceed more aggressively with our initiatives against climate change, we have formulated "a comprehensive program concerning climate change". Under this program, we are going to make more extensive efforts through the activities of the insurance business itself, enlightenment and social contribution, in addition to the continuous efforts toward the reduction of the environmental impacts resulting from our own business activities.



Note : "Carbon minus" means the state where the absorption of CO<sub>2</sub> by the forestation project which the company carries out, its use of renewable energy, its acquisition of the emission right, etc. surpasses the volume of CO<sub>2</sub> discharged by the company as a result of its business activities.

About Tokio Marine & Nichido Fire Insurance Co., Ltd. ("the Company")  
The Tokio Marine & Fire Insurance Co., Ltd. ("Tokio Marine"), the predecessor of the Company in 2004 which is the leading insurer having the largest share of the market. It was incorporated with the Nichido Fire & Marine Insurance Co., Ltd. into the Company in 2004 which is the leading insurer having the largest share of the market.  
About Millea Holdings, Inc.,  
Founded in 2002, Millea Holdings, Inc., the first insurance holding company in Japan, fully owns Tokio Marine & Nichido Fire Insurance Co., Ltd., and other financial services companies.



PREFABRICATED EXTENSIVE GREEN TRAY SYSTEM



# OUR GREEN ROOF DREAM

- providing instant green to our roof

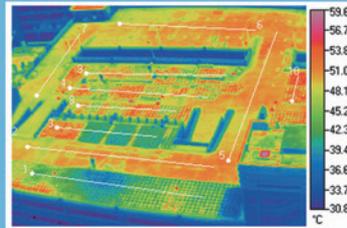


- High performance
- Low maintenance and easy to replace
- Light weight and portable
- Improve thermal comfort

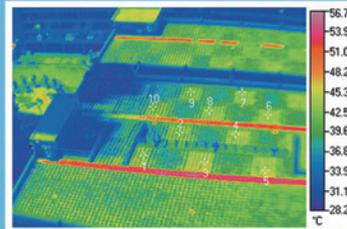


## Before & after installation of PEG system

### Thermal Graph



**Before**  
Rooftop temperatures of 48-55 degree Celsius



**After**  
Significant reduction of rooftop temperatures of about 8 degree Celsius

### Carpark Rooftop



**Before**



**After**

For enquiries, please contact us at [corporatemarketing@unitedpremas.com](mailto:corporatemarketing@unitedpremas.com)



*Green Living In Our Heartland*



Premised on our philosophy  
"Trustworthiness and Creativity",  
to realize our Aspirations,  
"Meeting Needs. Exceeding Expectations."  
We develop our environmental activities.

<http://www.nikon.co.jp/main/eng/portfolio/csr/index.htm>

### Reduction activities of Greenhouse Gases

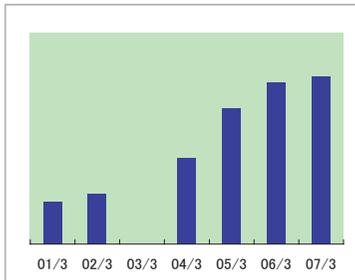
Improvements in energy efficiency of products, Introduction of high-efficiency facilities/equipment, Renewal of aged facilities/equipment, Application of cogeneration system and renewable energy, Improvements in logistic efficiency and quality goods rate, Etc.



Cogeneration system at Sendai Nikon Corporation

### Eco Friendly Product Development

Resource saving, Energy saving, Facilitation of the dismantling, Environmentally sound optical glass (Eco-glass; lead & arsenic free), Reduction in use of hazardous chemical substances, Etc.



Increasing of \*ArF Scanner's energy efficiency  
\*Argon fluoride eximer laser IC Scanner

### Promotion of Reduction and Recycling of Waste

Zero-emission Activity, Sales of refurbished Steppers for Reuse, Reduction in product's package volume, Battery recycle, Etc.

### Other Activities

Green procurement & purchasing, Control of chemical substances, Prevention of atmospheric pollution, Conservation of water resources, Supporting environmental activities of Local Communities, Etc.

### Eco-products 2007



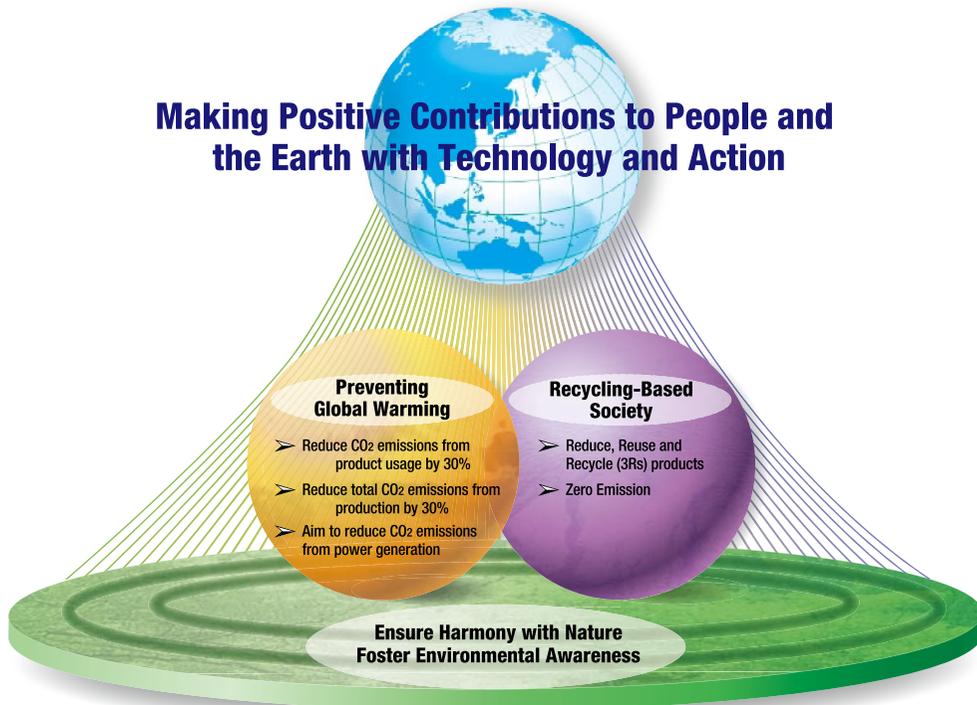
Nikon exhibited our Eco-products & activities under the theme of "The earth-friendly manufacturing based on optics" on December 13-15, last year in Tokyo. Our booth attracted serious attention and crowded with a great many visitors.

# Mitsubishi Electric Group Environmental Vision 2021

Mitsubishi Electric established the long-term environmental initiative, Environmental Vision 2021, to coincide with the Mitsubishi Group's 100th year anniversary in 2021. Adopting the policy slogan "contributing to people and the planet through technology and action," we aim to contribute to the establishment of a sustainable society by advancing our broad range of high-level "technology" and the proactive and continuous "actions" of our members—a distinguishing feature of Mitsubishi Electric.



## Making Positive Contributions to People and the Earth with Technology and Action



### Initiatives to Prevent Global Warming

- Undertake the technological innovation and dissemination of energy-saving products with the aim of cutting CO<sub>2</sub> emissions from product use by 30% (compared to 2000 levels)
- On the presumption of sustainable growth, aim to cut CO<sub>2</sub> emissions from product manufacturing by 30% (520,000 tons) throughout the Mitsubishi Electric Group
- Contribute to the prevention of global warming by providing products and systems to non-CO<sub>2</sub>-producing power-generating operations, such as solar and nuclear energy production, to reduce CO<sub>2</sub> emissions from power generation

### Initiatives to Achieve a Recycling-Based Society

- Achieve sustainable resource recycling by promoting the 3 Rs—Reduce waste production, Reuse materials, and Recycle used materials
- Aim for zero waste emission from the production process

### Ensuring Harmony with Nature and Fostering Environmental Awareness in Employees

- Foster people who study the significance of harmony with nature and initiatively act through the actual practices of nature conservation and observation
- Promote environmental conservation activities for restoration of lost woodlands



## ASIAN PRODUCTIVITY ORGANIZATION

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