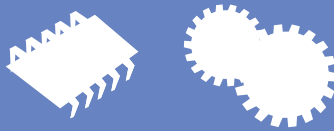


Eco-components



- 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

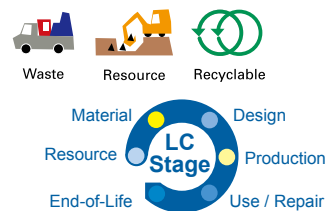
EC-1-001

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

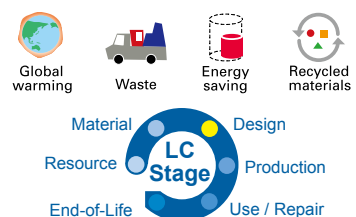
EC-1-002

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 flammable) 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/ceramiliteeco/index.html>



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

Appearance of Ceramilite-Eco sprayed on wall

Eco-components

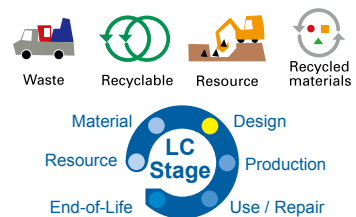
EC-1-003

Construction components

interior and exterior building materials

Interior/exterior materials from reproduced AI /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.



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/>



ALCELITE G type

Eco-components

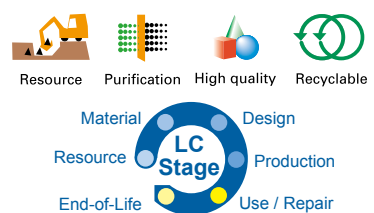
EC-1-004

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

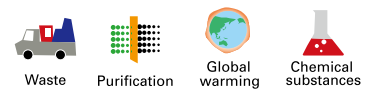
fiber wall materials

“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

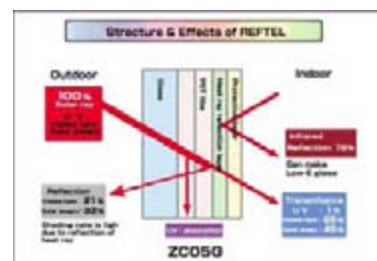
Reftel® is the highly transparent and heat reflective insulating film developed by Teijin firstly in the world.

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
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
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
 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

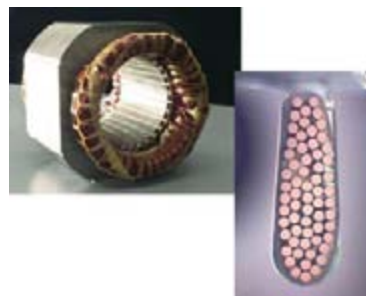
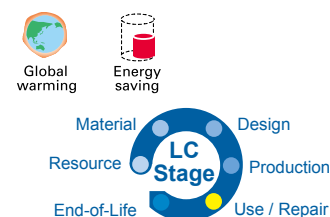
- (1) It uses it for the winding for various motors and generators.
- (2) It widely uses it for the car and the consumer electronic, etc.

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
 URL <http://www.hitachi-cable.co.jp/>



Self-lubrication electric wire(KOMAKI)

Eco-components

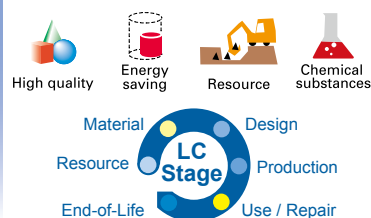
EC-2-003

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

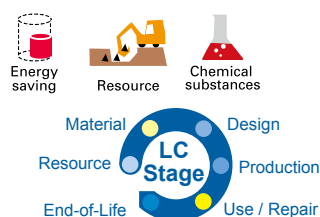
EC-2-004

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.

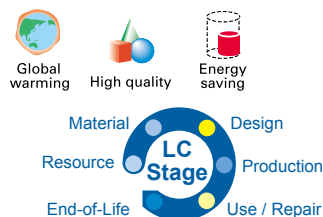
The equipment development makes easy to compose at the conventional induction motor and in the identical shape, to replace a motor only and to become energy saving.

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

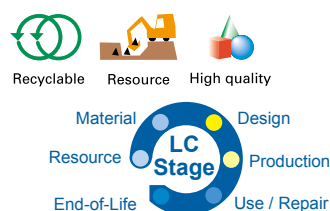
Electrical and electronic components

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

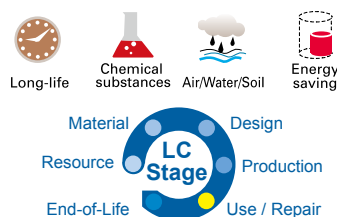
DCT Co., Ltd.

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

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.

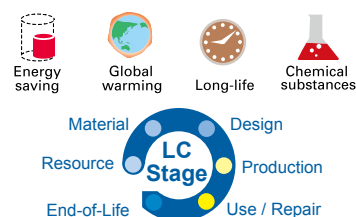
DCT Co., Ltd.

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

URL <http://www.dct-web.co.jp>



Available in : Japan, EU countries and China

FDS-PM series

Eco-components

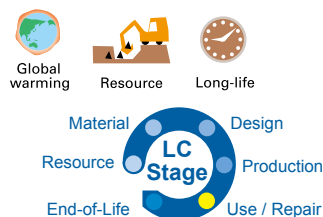
EC-2-009

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
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

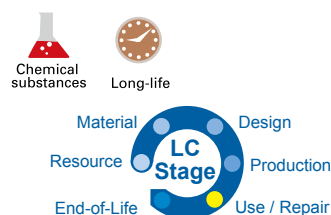
< Features >

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



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 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.

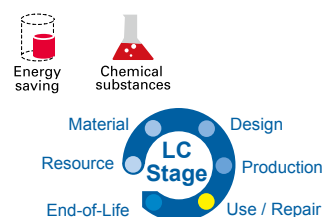
Hitachi, Ltd.

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

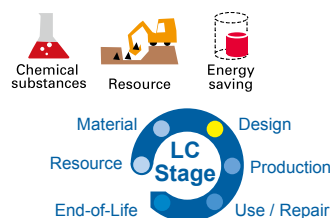
Electrical and electronic components

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.



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



3.2inch WQVGA organic light emitting diode for mobile phones

Eco-components

EC-2-014

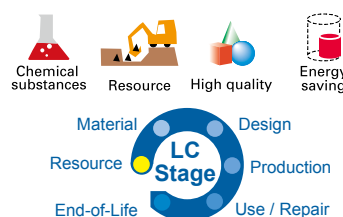
Electrical and electronic components

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.



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
URL http://www.tmdisplay.com/tm_dsp/jp/index.html



2.0inch QVGA LCD module

Eco-components

EC-2-015

Electrical and electronic components

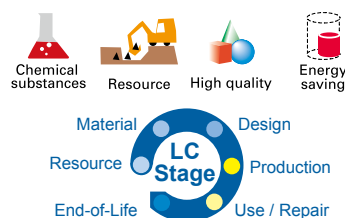
hard disk drive

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*¹ of 2.5-inch hard disk drive in the world.

*¹ 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
 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.

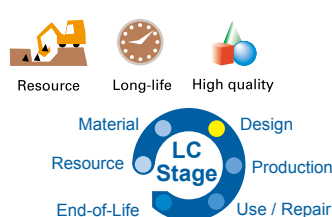
Phocos is strongly committed in developing and producing products that meet the company strict specifications in terms of quality, innovation and technology in our products.

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
 URL <http://www.phocos.com>



Solar Charge Controllers

Available in : Worldwide

Eco-components

EC-3-001

Semiconductor manufacturing devices

communications cables

Modifaid II tin plating FFC(Flexible Flat Cable)

Usage

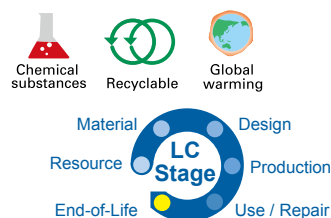
- (1) FFC(Flexible Flat Cable) is a flat multi wick cable, and it is used for the internal wiring material.
- (2) It is used for the office suppliesthe and consumer electronic such as the digital camera, audio and LCD TVs.

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
URL <http://www.hitachi-cable.co.jp/>



Modifaid II tin plating FFC(Flexible Flat Cable)

Eco-components

EC-3-002

Semiconductor manufacturing devices

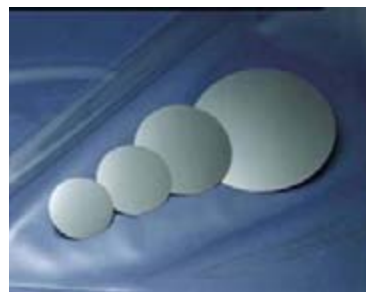
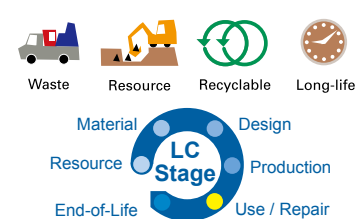
parts of semiconductor manufacturing equipments

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
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.

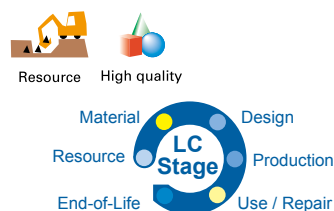
<Environmental Features>

- 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.)

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



RS Relay : ARS104H

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.

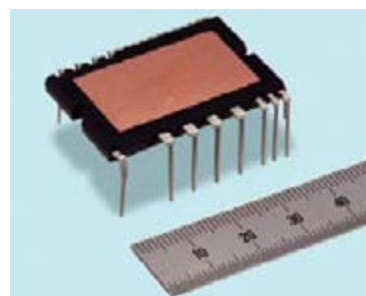
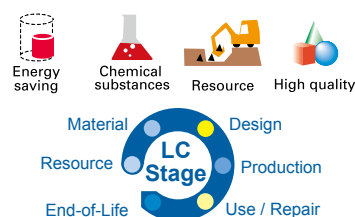
-----<< T : Toxicity >>-----

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

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
URL <http://www.MitsubishiElectric.co.jp/corporate/eco>

Available in : worldwide



Dual-in-line Package Intelligent Power Module

Eco-components

EC-3-005

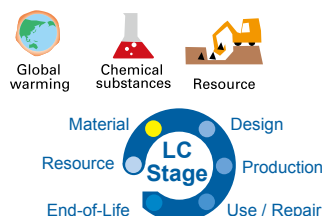
Semiconductor manufacturing devices

radio applied equipments

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

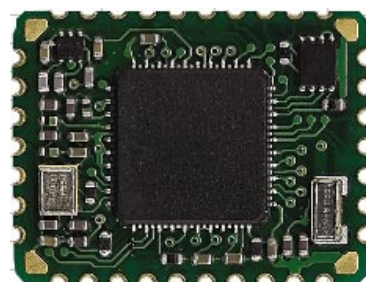
This bi-directional wireless module achieves ultra small size and ultra low-power.

- 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

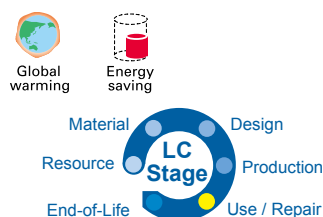
Semiconductor manufacturing devices

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 Ω \rightarrow 28 m Ω



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>

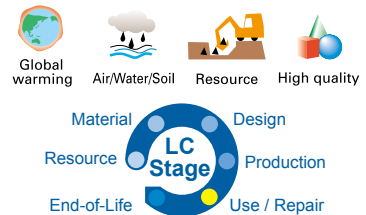
Low power consumption is achieved by the high-speed processing and low noise with the low voltage drive of 5.0V. As a result, taking a movie for a long time is possible without consuming so much energy.

<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.

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

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

Eco-components

EC-3-008

Semiconductor manufacturing devices

connectors for printed boards

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

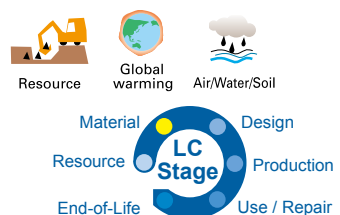
To satisfy the trend toward mobile phones that are getting more compact and sophisticated, mounting components including connectors are required to be downsized. To meet such growing needs, P35S reduces the terminal pitch from 0.4mm to 0.35mm with maintaining the high contact reliability of P4S already 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.)

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

Narrow-pitch connectors : P35S

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
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E-mail
URL <http://www.mew.co.jp/ac/>

Available in : Global



microSD Card Socket

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.

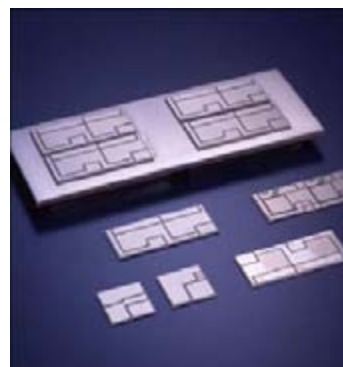
As the parts for the automobile field, it is required that peeling-off and cracking at the junction portion do not occur by the thermal cycling test (-40 ~ 125 °C, more than 3000 cycles). The conventional substrates have not cleared this severe condition. Our company's product satisfied this severe request, 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 Suganuma, Oyamacho, Suntogun, Shizuoka 410-1312, Japan
Tel 81-550-76-3106 Fax 81-550-76-3107
E-mail suzukiss@mmc.co.jp
URL <http://www.mmc.co.jp>

Available in : Japan, USA and Europe



DBA(Direct Brazed Aluminum)Substrates

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

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

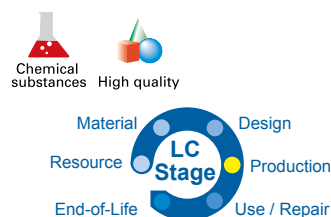
High-capacity memory products developed by Toshiba to save energy

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

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.

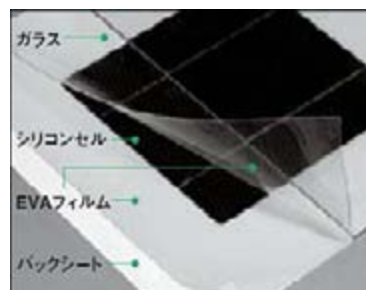
Bridgestone product "EVA-film (brand name: EVASKY)" is a vital component for the photovoltaic (solar) modules using silicon or other media.

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.

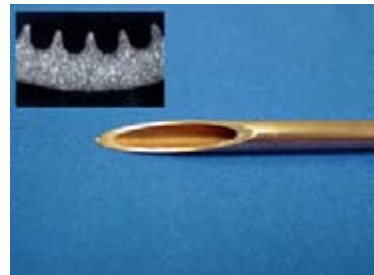
Hitaka Works, 5-1-1 Hitaka-cho, Hitachi-shi, Ibaraki-ken 319-1414, Japan
Tel 81-294-25-3835 Fax 81-294-43-3852
E-mail taketani.noriaki@hitachi-cable.co.jp
URL <http://www.hitachi-cable.co.jp/>



Global warming



Recyclable



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/>



Global warming



Resource



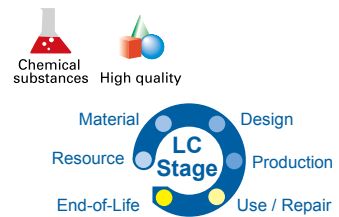
Energy saving



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



Eco-components

EC-5-001

Automobile parts

wire cables

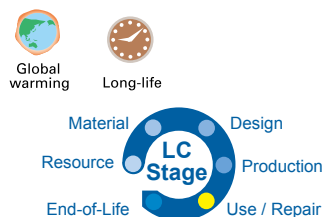
Power cable Harness for hybrid vehicles

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
 URL <http://www.hitachi-cable.co.jp/>



Power cable Harness for hybrid vehicles

Eco-components

EC-5-002

Automobile parts

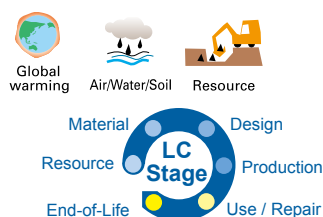
tires for trucks and buses

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.



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>



GREATEC 495/45R225 for Truck

Eco-components

EC-5-003

Automobile parts

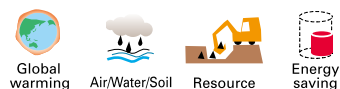
tires for trucks and buses

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
11R225 14PR 106/11

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
185/80R15 100/105T

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

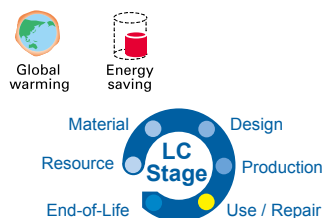
EC-5-005

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%.



LSR ECOPIA M812
205/65R16 117/115L 150/82R

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

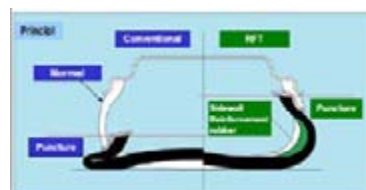
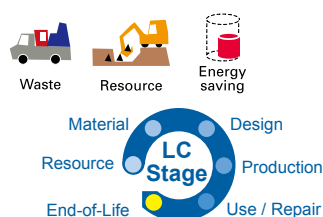
Automobile parts

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.)



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

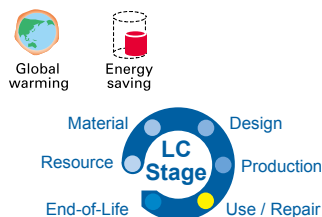
tires for passenger car

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 CO₂ emissions when running.



PSR B'STyle EX(BSTEX2)
215/60R17 91V XL

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

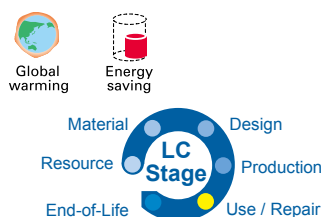
Automobile parts

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 CO₂ emissions when running.



PSR SNEAKER SNK2(SNK2X2)
215/60R17 91V XL

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

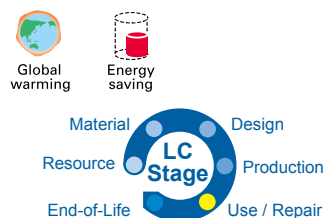
Automobile parts

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 CO₂ emissions when running.



PSR PLAYZ PZ-1 (P201FZ)
215/45R17 87W 104GB SI

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

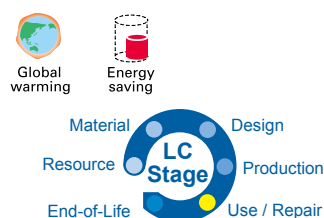
tires for passenger car

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 CO₂ emissions when running



PSR REGNO GRV (GRV2)

PSR REGNO GR-9000

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

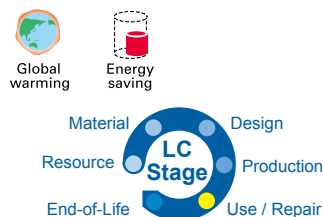
tires for passenger car

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 CO₂ emissions when running.

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



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 :

ECOPIA EP100

Eco-components

EC-5-012

Automobile parts

rubber hoses

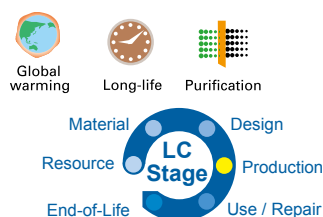
Brake hoses

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
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



Eco-components

EC-5-015

Automobile parts

parts of internal combustion engines for motor vehicles

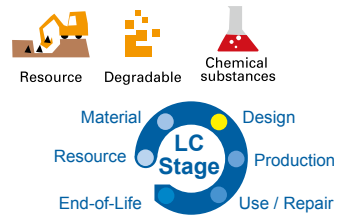
Automobile Electronic Controller

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.



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>



WaterProof type Engine Control Unit

Eco-components

EC-5-016

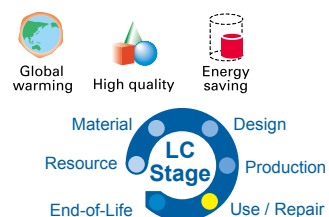
Automobile parts

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)



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>



LR945-901B

Eco-components

EC-5-017

Automobile parts

parts of internal combustion engines for motor vehicles

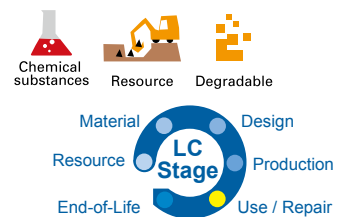
Pulley Assy-VTC

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.



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>



Vane type VTC

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
URL <http://www.Global.MitsubishiElectric.com>



Motor for Electrical Power Steering

Available in : Worldwide

Eco-components

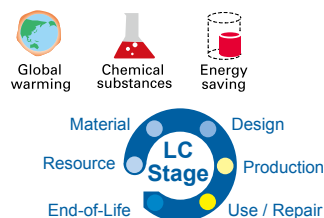
EC-5-019

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
URL <http://www.sumitomometals.co.jp/>

Available in : Worldwide

Retarder

Eco-components

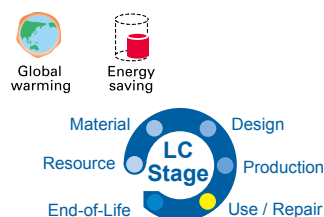
EC-5-020

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

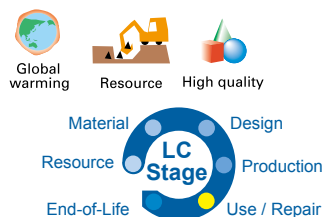
parts of driving, transmission and operating units

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

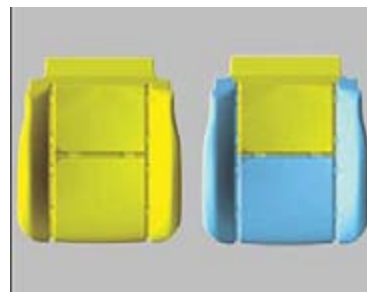
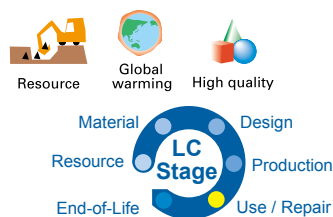
parts of motor vehicles, parts of motorcycles

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

rolled non-ferrous metal and alloy materials

Titanium muffler

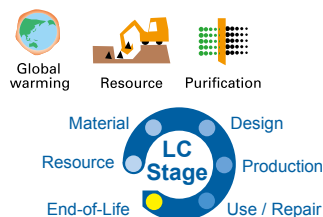
Nippon Steel's titanium materials have high corrosion resistance and are used in a lot of applications: industrial use in the field of electricity and chemicals, marine structures, civil applications including sports goods and office appliances, and the field of construction materials such as roofing 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
URL <http://www0.nec.co.jp/kankyou/index.html>



Eco-components

EC-6-001

Packaging

aluminum beverage cans

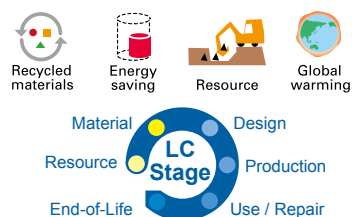
Aluminium Beverage Cans made from Used Beverage Cans

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

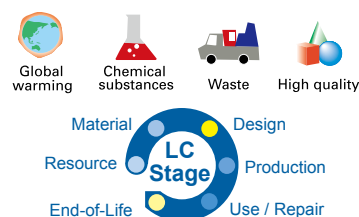
EC-6-002

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
URL <http://www.toppan.co.jp/>

Toppan GL-film

Eco-components

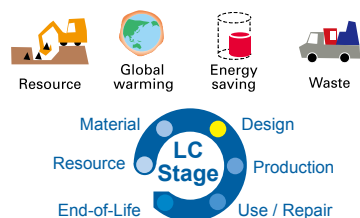
EC-6-003

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 Super Dry 350ml, 500ml

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>

Eco-components

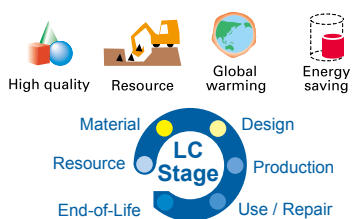
EC-6-004

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.
- PET bottle with an eco-grip cap
The thermal adhesion label can be thermally stuck at only one spot after it was wound 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.



1.Juroku-Cha PET 2.Collagen Water PET

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>

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.



NIKKA Taketsuru 12 Years Old Pure Malt

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>

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 CO₂ 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.

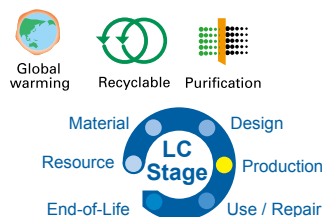
2-14-3 Kanda tsukasa-machi, Chiyoda-ku, Tokyo 101-0048, Japan
Tel 81-3-5296-6815 Fax 81-3-5296-6808
E-mail
URL <http://www.wakodo.co.jp>



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 CO₂. 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
 URL <http://www.morikami.com>

Eco-components

EC-7-001

Others

industrial plastic products

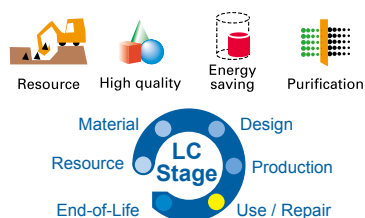
Reverse osmosis membrane element for high quality

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
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URL <http://www.nitto.com> or, <http://www.membranes>.



Products/Model: ESPA4 from Hydranautics

Eco-components

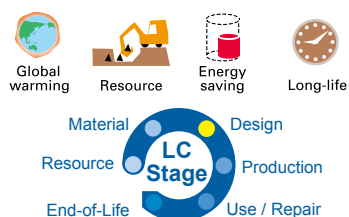
EC-7-002

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.



Thin Film Photovoltaic Module NA-901WQ

SHARP CORPORATION

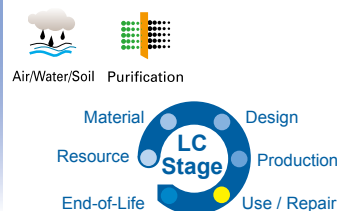
22-22, Nagaike-cho, Abeno-ku, Osaka 545-8522, Japan
Tel 81-6-6625-0438 Fax 81-6-6625-0153
E-mail eco-info@sharp.co.jp
URL <http://www.sharp.co.jp/>

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.

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Reverse Osmosis Membrane