



## Caring for “the Earth” and “People”





Surface protection film for automobiles



Reinforcing and vibration-damping material



LCD optical film

**Emphasizing safety while supplying peace of mind**



Taping Tape



Cellular phone products

**Considering resource-saving and energy-saving products and practices**



Transparent epoxy encapsulating resin



Semiconductor wafer-protection tapes

We produce **11,200** types of products all born of necessity.

Developing only what is "necessary" when it becomes "necessary"

**Realizing the desalination seawater**

Adhesive bandages



Transdermal therapeutic patch for asthma



Plant tissue culture products



Ultra-low-pressure reverse osmosis membrane

**For human well-being**

# Editorial Policy

- This report is published by the Nitto Denko Group with the aim of informing the world about our environmental conservation efforts and social activities. For the detailed information not included in this report about the activities at our Japan domestic plants, as well as its additional information, please check our homepage as this information is to be uploaded in September.
- In last year's "Environmental Report 2003", we focused solely on our environmental activities; however, we have expanded our coverage to include some of our social activities since this year. Moreover, we have changed the title of this report to the "Environmental and Social Activity Report" and aim to enhance its content in a calculated manner by fiscal 2008.
- As in keeping with our "Environmental Report 2003", we have continued the special feature on group companies outside Japan. In this report, we introduce the efforts of Nitto Europe (please see page 11).
- In compiling and selecting contents for this report, we have chosen items in accordance with and referenced Environmental Reporting Guidelines (fiscal 2000 and fiscal 2003 editions) from the Ministry of the Environment and Sustainability Reporting Guidelines 2002 from the Global Reporting Initiative.

# Report Scope

Ideally, this report should be a report with all items relevant to the Nitto Denko Group; however, due to information gathering and an editorial structure which did not fall completely into place, we have arranged the scope of this report in the following manner.

## ● Data Coverage

Financial Data:

Nitto Denko Group (consolidated)

Environmental Data:

Nitto Denko Corporation (non-consolidated\*)

Environmental Accounting Data:

Nitto Denko Corporation (non-consolidated\*)

Five Japan domestic manufacturing companies

Seven overseas manufacturing companies

Labor Accident Data:

Nitto Denko Corporation (non-consolidated\*)

\*Non-consolidated refers to the following six bases; Tohoku Plant, Kanto Plant, Toyohashi Plant, Kameyama Plant, Shiga Plant, Onomichi Plant

## ● Term

From April 2003 to March 2004

## ● Next issue

June 2005 (Planned)

# Contents

Corporate Profile .....	2
Editorial Policy/Report Scope/Contents .....	4
<b>Our responsibilities</b> -----	
<b>Managers comments instead of an introduction</b> ....	5
<b>Close Up I</b>	
<b>Products and Technology</b> .....	7
<b>Close Up II</b>	
<b>Environmental Efforts Abroad</b> .....	11
<b>Close Up III</b>	
<b>Our Efforts</b> .....	13

## Environmental Report from Nitto Denko

Corporate Environmental Policy .....	15
Environmental Management .....	16
Overall View of Environmental Impacts .....	18
Environmental Accounting .....	19
Results of Environmental Voluntary Plan.....	21
Environmental Voluntary Plan <b>1</b>	
<b>Reduce industrial wastes</b> .....	22
Environmental Voluntary Plan <b>2</b>	
<b>Prevent global warming</b> .....	23
Environmental Voluntary Plan <b>3</b>	
<b>Prevent air pollution</b> .....	24
Other Environmental Performance Data .....	25
Controlling Chemical Substances .....	26
Environmentally Conscious Products .....	27
Material Procurement .....	28
Environmental Communication Activities in Fiscal 2003 .....	29

## Nitto Denko's Efforts for Social Responsibility

Compliance Policy .....	30
Making the Workplace Safe and Comfortable .....	32
(Occupational Health and Safety)	
To Be a Fair Company to People and Society .....	34
(Human Rights and Employment)	
To Fulfill our Responsibility to Customers	
as a Manufacturer .....	36
(Consumer Protection and Product Safety)	
Relationship with the Local Community .....	37
Comparative Table with MOE Environmental	
Reporting Guidelines (Fiscal 2003) .....	38

## ● Prospection, anticipation, and plans for the future

This report includes the prospection, anticipation, and plans for the future as well as the facts of present and past about the Nitto Denko Corporation and its affiliates companies (the Nitto Denko Group). These are the results of assumptions or judgments based on the information that could be obtained when this report was prepared and thus may contain uncertainties. Therefore, they may be different from the results of future business activities or phenomena that may occur in the future. Certain sections in this report contain predictions about the future. Please note, however, that future predictions are based solely on our prospectations, and we do not guarantee their reliability or accuracy, nor are we liable for any damages that could arise from this information.



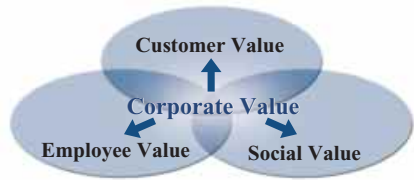
# Europe

NITTO EUROPE N.V.  
 NISSHO HUNGARY PRECISION CO., LTD.  
 KYOSHIN EUROPE LTD.  
 NITTO SCANDINAVIA AB  
 NITTO DEUTSCHLAND GMBH  
 Plus 7 companies, Total 12 companies



# NITTO DENKO GROUP

## Philosophy



[Creating New Value]

**Operations**  
 Creating functional products that satisfy customers.

**Employees**  
 Respecting the individuality of all employees and enabling them to achieve personal fulfillment through their work.

**Social**  
 Respecting the environment and contributing to the global community.

---

**Corporate Vision**  
 Management philosophy and a sense of mission

**Employee Guideline**  
 Action guidelines employees are expected to follow on a day-to-day basis

**Founder's instructions**  
 Nitto Denko's traditional and unchanged spirit

1. Remember that our customers deserve exceptional product quality and out standing service.
2. Always put safety first.
3. Approach every task with motivation and diligence.
4. Use ethics and the law as your guides.
5. Strive to protect the environment and conserve natural resources.

Company credo: Nitto Denko exerts every effort in producing only one product or one roll of tape and consistently serves customers.

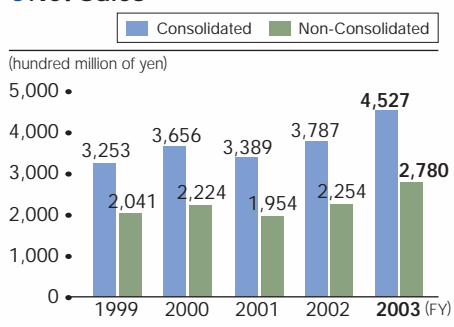
Guiding precept: Our happiness lies in the prosperity of society.  
 Nitto spirit: "Frontier spirit" based on enterprise  
 "Cooperation and consensus" based on harmony among people.

(All Group Employees)

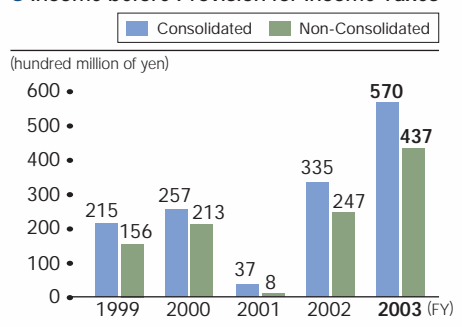
# 18,000

people in the world are

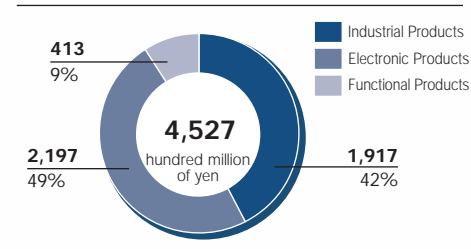
### Net Sales



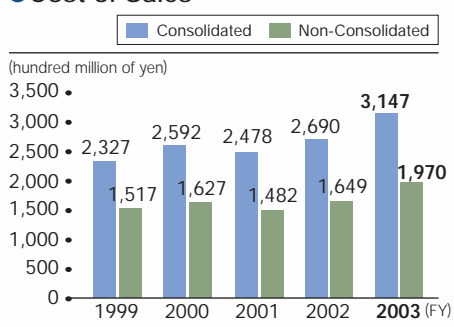
### Income before Provision for Income Taxes



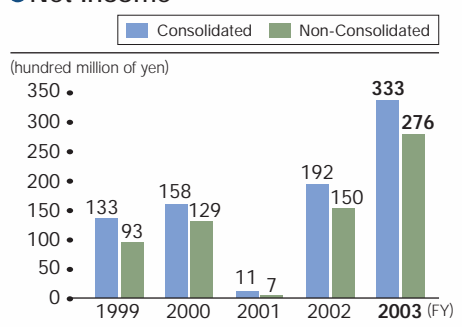
### Consolidated Net Sales by Business Segments (Fiscal 2003)



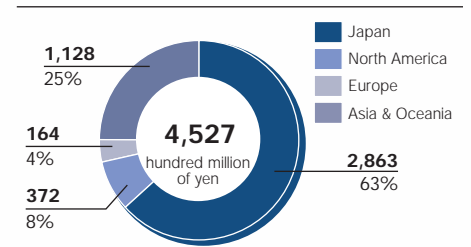
### Cost of Sales



### Net Income



### Consolidated Net Sales by Geographical Areas (Fiscal 2003)






## South Asia

NITTO DENKO (SINGAPORE) PTE. LTD.  
 NITTO DENKO ELECTRONICS (MALAYSIA) SDN. BHD.  
 NITTO DENKO MATERIAL (THAILAND) CO., LTD.  
 NITTO DENKO MATERIALS MALAYSIA SDN. BHD.  
 Plus 17 companies, Total 21 companies



## East Asia

NITTO DENKO (CHINA) INVESTMENT CO., LTD.  
 NITTO DENKO (SUZHOU) CO., LTD.  
 NITTO DENKO (SHANGHAI SONG JIANG) CO., LTD.  
 NITTO DENKO (SHANGHAI PU DONG NEW AREA) CO., LTD.  
 NITTO DENKO (HK) CO., LTD.  
 Plus 27 companies, Total 32 companies




## Japan

NITTO DENKO CORPORATION  
 NITTO SHINKO CO., LTD.  
 NITTO DENKO PACKAGING SYSTEM CORPORATION  
 NITOMS INC.  
 NISSHO CORPORATION  
 KYOSHIN CO., LTD.  
 NITTO DENKO MATEX CO., LTD.  
 NITTO LIFE-TECH CO., LTD.  
 AICHI NITTO DENKO CORPORATION  
 NITTO ELECTRONICS KYUSYU CO., LTD  
 NITTO SEIKI CO., LTD.  
 MIE NITTO DENKO CORPORATION  
 NITTO MEDICAL CO., LTD.  
 Plus 17 companies, Total 30 companies





## America

NITTO AMERICAS, INC.  
 HYDRANAUTICS  
 PERMACEL  
 PERMACEL AUTOMOTIVE INC.  
 AVEVA DRUG DELIVERY SYSTEMS INC.  
 NITTO DENKO AMERICA, INC.  
 GRAPHIC TECHNOLOGY INC.  
 Plus 8 companies, Total 15 companies



# challenging to increase corporate value

## ● Corporate Profile (As of March 31, 2004)

Company Name	Nitto Denko Corporation
Established	October 25, 1918
Head Office	1-1-2 Shimozumui, Ibaraki, Osaka 567-8680 Japan
President	Masamichi Takemoto
Capital	US\$ 253,538 thousand
Major Business	<b>Industrial Product:</b> Bonding and joining products, surface protection products, anticorrosion and waterproof products, sealing products, and packaging materials and systems <b>Electronic Products:</b> semiconductor-related products, LCD-related products, flexible printed circuit products, and electronic processing products <b>Functional Products:</b> medical-related products, polymer separation membranes, and fluoroplastic products

## ● Number of Employees (As of March 31, 2004)

Non-consolidated	2,892
Consolidate	11,618
Nitto Denko Group	18,736 (including affiliates)

## Mid-term Management Plan One-NITTO Dream Plan

### Global Niche Top product development in five core areas of the world

Conventionally, new products were mostly developed in Japan, but Nitto Denko has globalized its product development. The business execution system has been enhanced, and research development resources have been intensively introduced in each area of the world. In the five core areas, America, Europe, East Asia, South Asia, and Japan, the Global Niche Top products are currently developed based on the industrial characteristics of each area.

### Focused development strategy aiming at increased production capability and share

Resources are intensively poured into the current and future growing market. We focus on increases in production capabilities for LCD-related materials, outside Japan production of drug-delivery patches for asthma, and the polymer separation membrane business, which enables purification and the reuse of water resources. We will enhance our corporate values as well as increasing our profits.

**“Our responsibilities”**  
Managers comments  
instead of  
an introduction



**Yukio Nagira**

Director  
Nitto Denko Corporation



**Masamichi Takemoto**

President  
Nitto Denko Corporation



**Tetsuo Horiuchi**

Corporate Vice President and  
Sector General Manager,  
Specialty Technology Sector  
Nitto Denko Corporation

Under the motto “One-NITTO”, we are striving to expand the positive elements of Nitto Denko’s corporate culture to more than 100 companies in our corporate group around the world.

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**“Open, Fair and Best” is the approach that we bring into environmental and social activities**



are carrying out our Environmental Voluntary Plan (please see page 21) that outlines topics as well as numerical targets while at the same time publicizing to the group as a whole achievements and the means used to reach them. In this way, the information is gathered from and shared around the globe so that branches and corporate affiliates outside Japan can take the best ideas for their own use.

**Nagira** Corporate culture brings to mind the “mutual trust,” “partnership” and “coexistence and co-prosperity” that our company has used as the foundation in building a solid relationship with our employee union over the years. These three components are universal and by no means limited to the relationship between management and unions, but they extend to and are necessary in relations between employees, with customers, with suppliers, with stockholders, and even our relationship with society.



## To fulfill the responsibility for all stakeholders, we should fulfill the responsibility for our employees at first

**Horiuchi** The importance of building a solid relationship with society is clearly laid out in the “creating new value” text of our corporate vision. This value refers to the value for the consumer, the value for the employee and the value for the stockholder while also indicating the social value inherent in contributing to the environment in a positive way. Further heightening this value in these four respects is required.

**Takemoto** To achieve that, I think that the first thing my job requires of me is to create an environment in which it is easy for employees to work. That in turn will lead to the elevated performance and have a positive impact on our suppliers so that we can supply good products and services to our customers. Therefore, we will show positive corporate results, and we can return profits to stockholders. Another positive business performance is that it spurs employment and local economies, thus contributing to society in a variety of ways. This gives employees a sense of reward and meaning to their work. So, in order to really take care of relations with all stakeholders, it is important that the employee’s satisfaction is realized because I think this is at the hub of this virtuous cycle.

**Nagira** In order to satisfy our employees, the

president is currently calling for the active recruitment of female employees and increasing the scope of activities for local hires at our foreign (outside Japan) offices. Actually, the number of female leaders among our overseas branches is steadily increasing.

**Takemoto** That is true. Still, the recruitment of women is still sorely lagging in Japan. I recognize that the bulk of the leaders at our overseas offices are still Japanese. I think that to increase the recruitment of skilled individuals abroad, the overseas offices should be able to be managed by locally hired employees in the future.

## Toward making “One-NITTO” as our collective word

**Nagira** Currently, our group has the total of nearly 20,000 employees. To create a collective corporate culture, those 20,000 minds have to be in sync and share the awareness.

**Takemoto** For that reason, I think it is the key that both executives and employees are open, not only about the results of their own jobs, but also about the process used to achieve results. Of course, this holds the true for failure as well. If all information is open and freely available, I believe that there is a self-cleansing process that goes on.

I want the motto “One-NITTO” to encapsulate the mindset that employees should have from this point forward. As in our mid-term management plan, One-NITTO Dream Plan, which uses this phrase and is premised on the common awareness among our corporate group, this phrase should be the concentrated version of the concepts and the spirit embodied in the concepts of “mutual trust,” “coexistence and co-prosperity” as well as “Open, Fair and Best.” I want a “good corporate culture” that transcends cultural, linguistic and racial differences to flourish and expand throughout our company group.



竹本正道  
柳 栄 幸 雄  
堀内 哲 夫

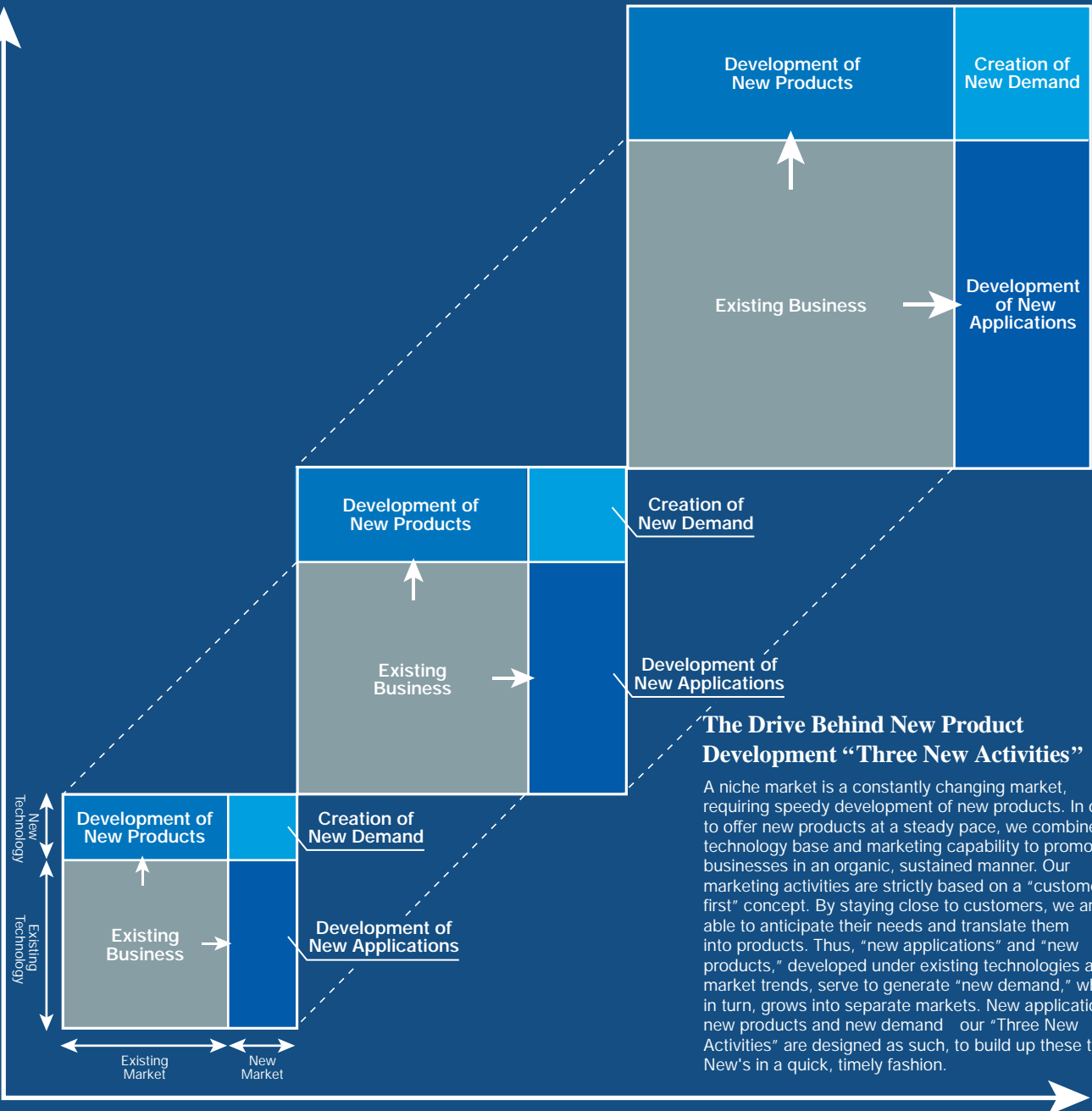
# Products and Technology

Necessity is the mother of invention

## A look inside the minds of our developers

The Nitto Denko is supplying the world with many “Global Niche Top” products developed with unique in-house technologies. Of course, while these products are superior in the terms of function, quality and cost, they are also designed to minimize their environmental impact, from the process of procurement through manufacture and delivery. Next, we would like to present the thoughts and opinions from some of our developers who labor to meet these demanding conditions and striving to realize more environmentally friendly products.

Technology



### The Drive Behind New Product Development “Three New Activities”

A niche market is a constantly changing market, requiring speedy development of new products. In order to offer new products at a steady pace, we combine our technology base and marketing capability to promote businesses in an organic, sustained manner. Our marketing activities are strictly based on a “customer-first” concept. By staying close to customers, we are able to anticipate their needs and translate them into products. Thus, “new applications” and “new products,” developed under existing technologies and market trends, serve to generate “new demand,” which, in turn, grows into separate markets. New applications, new products and new demand – our “Three New Activities” are designed as such, to build up these three New’s in a quick, timely fashion.



# Products and Technology 1

## Contributing to securing water resources for the world by using the reverse osmosis membrane technology, creating freshwater by filtering seawater



**Satoru Ishihara**

Research & Development Dept.,  
Membrane Div.

**Atsushi Hiro**

Quality Assurance Section,  
Membrane Div.

### ● Main installation results

Location	Freshwater production capacity	
America (Tampa)	100,000m <sup>3</sup> /d	
Spain (Carboneras)	120,000m <sup>3</sup> /d	The largest facility in Europe (As of March 2004)
Cyprus (Larnaca)	54,000m <sup>3</sup> /d	
United Arab Emirates (Fujairah)	170,000m <sup>3</sup> /d	The largest facility in the world (As of March 2004)
Japan (Fukuoka)	50,000m <sup>3</sup> /d	The largest facility in Japan (As of March 2004) (Post-treatment deboration+ partial supply)
Japan (Okinawa)	40,000m <sup>3</sup> /d	(15,000m <sup>3</sup> /d+ partial supply)



All products undergo a desalination check prior to shipping

The seawater desalination plants that are exploiting “Reverse Osmosis Membranes” have gained attention globally because their ability to make pure water from seawater has the potential to rescue the world from the burgeoning demand for water. The reverse osmosis membrane technology is the fuel fanning the expectations that these “environmental plants” will turn the inexhaustible supply of seawater into the source of freshwater suitable for consumption, agriculture and industry.

The reverse osmosis membrane that we invented produces freshwater by using pressure to filter seawater through a semipermeable membrane which is difficult for salt content to pass through and is the key device in the seawater purification technology today. Our seawater desalting membrane was first commercialized in 1987, and we have subsequently struggled to improve its functionality. Since establishing the plant which is capable of processing 10,000 m<sup>3</sup> of water per day in 1997 in Chatan Town, Okinawa Prefecture, our seawater desalination plants have been adopted around the world. As of March 2004, we have achieved a level totaling some 1 million m<sup>3</sup> of freshwater generation per day.

When establishing seawater desalination plants, we have to do things in the environmentally-friendly way. For instance, if we discharge the untreated post-filtration water, concentrated seawater (with a salinity level of 6%), into the sea, it could cause the negative impacts on marine ecosystems. Therefore, in Okinawa, we have made sure to return the salinity of water to its typical of seawater (roughly 3.5%) before discharging it.

In the future, we aim to contribute to the environmental conservation through a new proposal that will boost the energy saving of plants by improving the function of reverse osmosis membranes as well as devising a method to avoid the use of condensing agents to remove microorganisms found in seawater at any phase in the process.



The Nitto Denko Group seawater desalting membranes are producing about 1 million m<sup>3</sup> of desalinated freshwater each day

(right) **Masato Shirai**  
Development Dept.  
Industrial Products Div.

(center) **Akiko Miyano**  
Development Dept.  
Bonding and Joining Products Div.

(left) **Takeshi Yamanaka**  
Development Dept.  
Surface Protective Products Div.



## Products and Technology 2

### “Putting the environment first”, our firm commitment to making a non-organic solvent adhesive

Toluene and other organic solvents are used in industrial processes, but in recent years, it has been pointed out that these are harmful both to humans and ecosystems, and there has been a call for curbs on their use. At Nitto Denko, we have embarked on an initiative to stop using organic solvents in manufacturing processes and began work on a non-organic solvent since the early 1970s. Today, we are still aggressively pursuing this organic-solvent-free project.

At Nitto Denko, we have put “the environment first” and made a firm commitment to pushing ahead with our project to develop non-organic solvent products. Currently, we offer the lineup of non-organic solvent style products, such as the surface protection film used to preserve the surface of metal plates and the tape for binding wiring in automobiles (wire housing) as well as the double-coated tape used for construction. In the construction sector in particular, our double-coated organic-solvent-free tape has been thrust into the industry spotlight due to efforts to tackle “sick house” syndrome and the attendant need to cut the use of volatile organic compounds (VOC). However, simply making the product of organic-solvent-free will not win the world’s acceptance. The product has to pack enough value to please customers. For this reason, we have designed our non-organic solvent adhesives in the way that suppresses the occurrence of static electricity and adheres solidly to myriad materials.

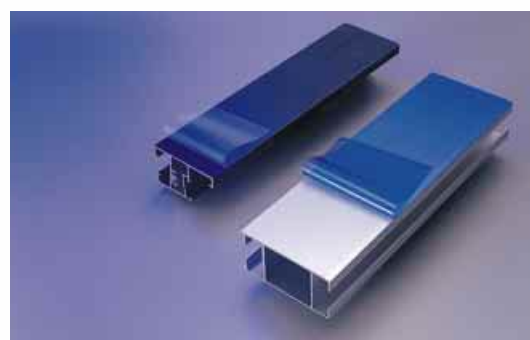
In addition, we are committed to taking a multifaceted approach in developing products that are environmentally benign through considerations such as manufacturing technologies that trim CO<sub>2</sub> emissions and producing goods that are easy to recycle or reuse.



Low-level VOC emitting double-coated tapes



Non-halogen non-organic solvent wire harness tape



Surface protection tape incorporating water dispersion adhesive

# Products and Technology 3

## Development of medical products, easy on people and the environment

A drug patch that allows medicine to be absorbed via the skin, known as a transdermal drug delivery product, offers merits not found in conventional oral medicines or injectable solutions and as a result is being focused on as a promising new method of administering medication.

Here, we would like to introduce some of our efforts in the sector of medical products development.

At Nitto Denko, based on adhesive tape technologies, we moved ahead of the rest of the world in the late 1970s by pushing the development efforts of a systemic tape and, in 1984, succeeded in producing the so-called "stick-on heart medication" – The first transdermal patch for ischemic heart disease in Japan.

Subsequently, we have released a transdermal patch for local anesthesia and a transdermal therapeutic patch for asthma and today own the largest share of the systemic patch market.

Our products have applied technologies developed in-house – such as the controlled release system of medicament and the keratin protection system using oil-based gel adhesives – to realize the sustained effect, low skin irritation and patches that can be reapplied. Stick-on patches avoid the pain of injections, minimize the risks of accidentally ingesting the wrong medicine or overdosing and are highly convenient pharmaceutical products for everyone, but notably for children and the elderly. For these reasons, the public expects much of these patches, and the market is expanding.

Also, at Nitto Denko, we have developed pheromone tapes and agrochemicals using entomogeneous fungi into products which apply our controlled release technique of medicament. These have been the focus of attention as promising products with the potential of preventing environmental degradation from pesticides. (Please see page 27)

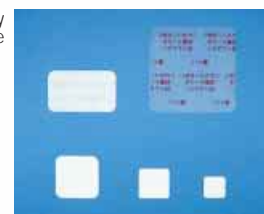
Once the health of the global environment or people is compromised, it takes the immense amount of effort to return it to its original state. For this reason, in the future, we want to strengthen our ability of the product development that is based on the preventive medical care approach and the environmental conservation.



Technology to evaluate how gentle something is on the skin is also important



A transdermal drug delivery product that is easy on people



**Yoshihisa Nakano**  
Product Development Center  
Medical Related Products Div.



# Introduction to the environmental efforts of Nitto Europe

The Nitto Denko Group makes concerted efforts together to tackle environmental issues. Let us introduce the efforts of Nitto Europe, which are highly evaluated as one of the most advanced environment-friendly companies in Europe as a result of reduction in the density of organic solvent emissions and achieving a 93% recycling rate for industrial wastes.

 Belgium

● Nitto Europe N.V.

## Corporate Profile

Company name: NITTO EUROPE N.V.

Established: 1974

Location: Genk, Belgium

Capital: 6,195,000 Euro

Number of employees: 521

<Major products>

Electrical insulating tapes/surface protection tapes/double coated adhesive tapes/sealing materials

## Controlling organic solvent emissions into the air within 20% of the regulatory standard

Nitto Europe was founded in Hasselt, Belgium in 1974, as Nitto Denko's marketing and sales headquarters in Europe. Concurrently, a factory started its operation in Genk as a European production base. It currently produces high-quality electrical insulating tapes, surface protection tapes, double-coated adhesive tapes, and sealing materials, etc.

Since its foundation, the Genk Factory has always endeavored to implement environmental measures with cutting-edge technologies. The restraint of organic solvent emissions is one example. In 1987, the factory introduced the first deodorizing furnace equipped with a heat recovery system in Europe, prior to the implementation of effluent control. In 2003, it was replaced with a new deodorizing furnace enhanced by cutting-edge technologies.

The density of the organic solvent emitted from the original furnace marked 70 mg/Nm<sup>3</sup>, while the new equipment reduced it to less than 10 mg/Nm<sup>3</sup>. The current regulatory standard for the density is 50 mg/Nm<sup>3</sup>, and that means we successfully control the density within 20% of the standard. In addition, the generated thermal energy is fully and effectively utilized in multiple processes. The introduction of cutting-edge technologies realized two effects for environmental conservation: the prevention of air pollution and reduction of energy consumption.

Nitto Europe is committed to introduce positively and continuously new technologies that reduce the environmental impact.

(left) **John Miny**  
Environment & Safety Dept.

(center) **Tilkin Louis**  
Environment & Safety Dept.

(right) **Stals Theo**  
Environment & Safety Dept.



## Receiving the commendation for its 93% recycling rate by the Belgian government

Nitto Europe applies its environmental policy to every aspect of business activities. We have been identifying the items that have huge effects on reducing the environmental impact (can be resulting in huge profit) in all activities that is ranging from materials procurement to production and distribution and taking the best possible measures for them. Also, we put the efforts to recycle industrial wastes. We reviewed the whole production process and decided to introduce an equipment to distill toluene used for washing (with a capacity of 60,000 liters/month). We have also promoted recycling of paper, cardboard, lumber, metal, surface protection tape, and polyethylene. As a result of these efforts, the Genk Factory achieved a 93% recycling rate. In 1999, we were

awarded the Excellence in Consideration for Environment by the Belgian government. This is the proof that the government regarded our efforts and steady activities as an innovative approach toward the reduction of environmental impact and consumption of natural resources and energy. We were able to establish our position as one of the most advanced environment-friendly companies not only in Belgium but also in the whole Europe.



In 2003, Nitto Europe acquired the certification of ISO 14001 that is an international standard environmental management system. Preparing for the application, the company had set up a special management and action team in the Environment and Safety Division of the Genk Factory. Consisting of specialists in the fields of environment, quality and safety, the team conducted thorough inspections of all equipment in the factory. Acquiring the ISO certification does not mean the end of these activities. Nitto Europe, a leader in the corporate environmental conservation activities in Europe, will continue the consistent activities to investigate in detail and improve all processes involved in production.

The new deodorizing furnace is a regenerative furnace, which does not require energy supply from outside during its operation. The collected thermal energy is used not only to operate the equipment itself but also to supply steam and coolant to the production process and heat to the building.



### Examples of the efforts to reduce environmental impact

<b>Reduction of raw materials</b>	Reducing film waste by the introduction of new tape cutting technology (Economic effect of 28,000 euro/year)
<b>Reduction of energy consumption</b>	Reducing electricity consumption by the adoption of inverter fluorescent lamps (Economic effect of 3,000 euro/year)
<b>Pollutant removal</b>	Replacing an automatic halogen fire extinguisher with an environment-friendly automatic fire extinguisher (2 million euro invested)
<b>Reduction of organic solvent emission</b>	Sealing the space where the solvent is used

### Nitto Europe's standards for environmental actions

Nitto Europe implements its environmental policy according to the following guidelines:

- Observe all applicable environmental laws, regulations, and guidelines.
- Reduce industrial wastes and promote efficiency in resource and energy consumption through the continuous improvement in the production process.
- Give the first priority to the reduction of environmental impact in the production and technology development processes.
- Provide information and offer educational opportunities to have all permanent and contracted employees understand, execute, and maintain the environmental policy.
- Set environmental objectives and targets, which are internally appropriate in terms of technology and economy and promote the continuous improvement through organizational efforts.
- Perform the open direct communication with customers, suppliers, regulatory authorities, and local residents.



Viewpoint for improvement

## Our Efforts in 2003

In fiscal 2003, Nitto Denko challenged a variety of environment and safety activities, including the reduction of organic solvent emissions, comprehensive energy-saving strategies, measures against static electricity that may cause fires, and activities to raise the awareness of its danger. The following are only a part of such activities.



ESCO business, Onomichi Plant



Deodorizing furnace of factory No.9, Kameyama Plant



Seminar at Taiwan Adhesive Tape Industrial Organization



Nitto Group International Meeting

### Promoting energy saving by introducing the ESCO<sup>\*1</sup> business of Hitachi at the Onomichi Plant

Aiming for the achievement of the energy-saving target (environmental voluntary plan for fiscal 2003-2005), Nitto Denko introduced the ESCO business of Hitachi into the Onomichi Plant. Cooperatively with Hitachi, Ltd., we conducted a number of investigations and reviews and started to introduce the equipment in fiscal 2003, subsidized by NEDO<sup>\*2</sup>. In the first phase of the engineering work, we will 1) improve effectiveness in the deodorizing furnace, 2) introduce a highly efficient turbo freezing machine, and 3) add pre-cooling coils for air conditioners, aiming at approximately a 9% reduction of annual energy consumption in the Onomichi Plant.

For the second phase (fiscal 2004), we plan 1) to further improve the effectiveness in the deodorizing furnace and 2) to introduce a co-generation system. When introducing all these measures are completed, approximately a 12% energy reduction is estimated.

We are all filled with a sense of mission to complete these energy-saving activities. Furthermore, this is the largest-ever energy-saving practice subsidized by NEDO, and we find it most challenging.

<sup>\*1</sup> ESCO: It stands for Energy Service Company and means a business to improve energy efficiency. Each company offers a comprehensive services including its technology, equipments, human resources, and the funds required for energy saving and receives a part of the benefit obtained through the energy savings from the customer in compensation for the service.

<sup>\*2</sup> NEDO: New Energy and Industrial Technology Development Organization (Independent administrative institution)



In front of Deodorizing furnace under construction

**Takao Yoshikawa**  
Production Engineering Section  
Optical Related Products Div.  
Optical Related Products Sector

**Toshiyuki Koshimizu**  
Production Engineering Section  
Optical Related Products Div.  
Optical Related Products Sector

## ▶ Reducing CO<sub>2</sub> emissions by introducing a regenerative deodorizing furnace at the Kameyama Plant

At the site of the Kameyama Plant, a new liquid crystal-related factory started its operations in the latter half of fiscal 2003. The plant has been regarded as the major production base of Nitto Denko's electronics products and mostly produces electrical circuit materials and semiconductor-encapsulating materials. The new factory added liquid crystal-related products to its lineup.

The new factory produces polarizing films used mostly for liquid-crystal display televisions and PCs and retardation films. A new deodorizing furnace was built simultaneously with the completion of the new factory to reduce the direct emission of organic solvent used in this process to the air.

We chose a regenerative furnace consuming less energy, as well as LNG, a representative clean energy, for fuel, thus contributing to the reduction of CO<sub>2</sub> and SO<sub>x</sub> emissions. The deodorizing furnace is only an example. It would be our pleasure if you would realize that such small

efforts in every production base accumulated to reduce a substantial amount of environmental impact.



The new deodorizing furnace

<b>Harumori Mizuguchi</b> Onomichi Plant CS Center Nitto Business Support Co., Ltd.	<b>Kazuo Fujimoto</b> Environment & Safety Section Electronic Materials Business Sector	<b>Nobuyuki Takami</b> Production Engineering Section Optical Related Products Sector
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## ▶ Receiving the commendation for Nitto's anti-static electricity seminars by Taiwan Adhesive Tape Industrial Organization

Electrostatic discharge is one of the most critical issues at the production sites handling organic solvent. Volatile gas may catch fire from static electricity, and it is resulting in an accidental fire. The Nitto Denko Group focuses our efforts on providing measures for the static protection. To be specific, we install static eliminators to remove static electricity, and operate the safety patrol whether each section has established a ground for its equipment.

These activities were recognized by the Taiwan Adhesive Tape Industrial Organization, and we were invited to deliver a lecture on the "Mechanism of fire caused by static electricity and measures against it" in both 2002 and 2003. In April of this year, we were commended for our contribution to the organization. We feel highly honored by the commendation.

It would be our utmost pleasure that our effort could communicate the importance of static protection to as

many people as possible and contribute to the reduction of fire and explosion tragedies caused by static electricity in this industry.



**Akihiro Nagura**  
Manufacturing Section  
Optical Related Products Div.  
Optical Related Products Sector



## ▶ Holding the Nitto Group International Meeting to respond to rapid globalization

In November and December 2003, all responsible staff from the environment and safety divisions and quality assurance divisions in the group companies outside Japan got together at the headquarters in the Osaka and Toyohashi plants. The environment and safety global meeting and the quality assurance global meeting were organized to share information and to improve the quality of activities at each base to respond to the rapid globalization required in our business.

Staff from seven companies in six nations attended the global meeting and eight companies in six nations attended the quality meeting to report the current status of activities and issues at each base and to discuss the future activities with earnestness. These two global meetings will be held annually.



### [The Environment and Safety Global Meeting]

**Date: From Nov. 19 to Nov. 21, 2003**

Participants: Japan domestic plants, Major Japan domestic group companies, Major overseas group companies

The overseas group companies participated in the conference were the following:

NITTO DENKO (SHANGHAI SONG JIANG) CO., LTD. / TAIWAN  
NITTO DENKO CO., LTD. / NITTO DENKO ELECTRONICS  
(MALAYSIA) SDN. BHD. / NITTO DENKO MATERIAL  
(THAILAND) CO., LTD. / PERMACEL / NITTO EUROPE N.V. /  
TAIWAN NITTO OPTICAL CO., LTD.

### [The Quality Assurance Global Meeting] Date: Dec. 10, 2003

Participants: Japan domestic plants, Major Japan domestic group companies, Major overseas group companies

The overseas group companies participated in the conference were the following:

NITTO DENKO (SHANGHAI SONG JIANG) CO., LTD. / TAIWAN  
NITTO DENKO CO., LTD. / NITTO DENKO ELECTRONICS  
(MALAYSIA) SDN. BHD. / NITTO DENKO MATERIAL  
(THAILAND) CO., LTD. / PERMACEL / HYDRANAUTICS /  
NITTO EUROPE N.V. / TAIWAN NITTO OPTICAL CO., LTD.



## We aim at harmonizing corporate activities and nature

### Corporate Environmental Policy

Nitto Denko established the Corporate Environmental Policy in 1996. Based on this, we plan to achieve environmental management that realizes both resource productivity and corporate growth.

#### Basic Philosophy

At Nitto Denko Group, we recognize that maintaining the health of the earth for coming generations requires that humanity seriously address the issue of global environmental conservation. Consequently, the Nitto Group, through its adoptions of the corporate vision “creating new value,” is committed to respecting and acting in the best interests of the environment, both locally and globally, in all its operations.

#### Environmental Policies

1. We will develop an internal environmental management system that promotes effective environmental preservation.
2. With a proper understanding of the environmental impact of our operations, we will develop internal environmental objectives and targets as far as is technically and economically practicable; moreover, we will pursue these objectives and targets in an organized manner to ensure the continual improvement of our environmental preservation efforts.
3. Our technical and product development will focus on the reduction of environmental load.
4. We will continue our efforts to conserve resources and energy, reduce industrial waste, and promote recycling in all aspects of our operations.
5. As part of our dedication to reducing the load on the environment, we will develop alternative technologies intended to reduce consumption of the sources of environmental pollution as well as to control emissions of environmental pollutants to the greatest extent feasible.
6. We will comply fully with environmental laws, regulations and agreements, and will impose our own environmental criteria as required in the interests of environmental preservation.
7. We will make sure that our employees receive environmental training and information so that all understand the significance of our Corporate Environmental Policy, have increased awareness of the importance of environmental preservation, and act on our Corporate Environmental Policy.
8. We will conduct periodic environmental audits in order to monitor the effectiveness of our environmental management strategy and identify areas requiring improvement.
9. As part of our social contribution, we will publicize proprietary technologies and information that are likely to benefit the environment.



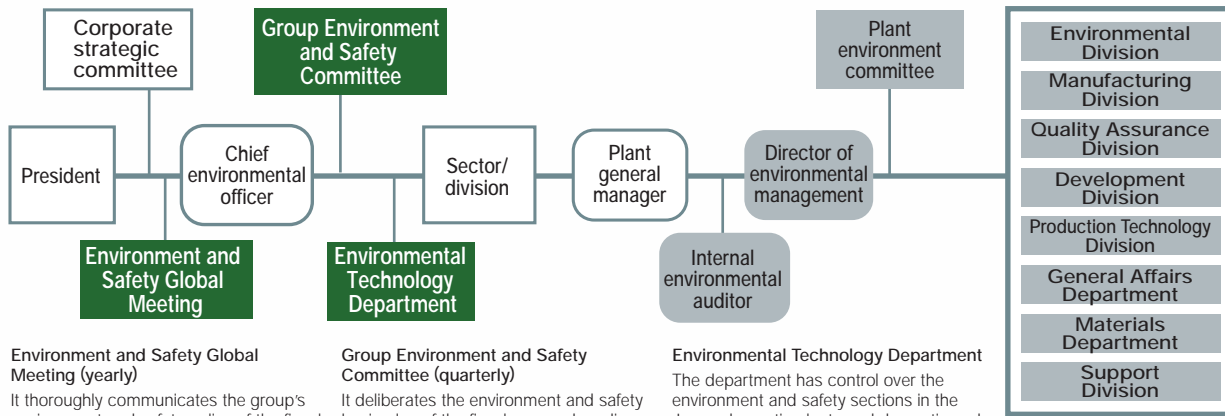
# Environmental Management

## Establishing the system that practices the environmental management promptly

The management holds the group and global meeting in March every year, where the year's policy and approach to the environment are thoroughly shared.

The working level holds the group environment and safety committee and the environment and safety global meeting to share information (please see page 14).

### Environmental Management Promotion System



**Environment and Safety Global Meeting (yearly)**  
It thoroughly communicates the group's environment and safety policy of the fiscal year, basic plan of the fiscal year, and medium-term basic plan to the plants and each company and gives the direction to reflect them in the individual plan.

**Group Environment and Safety Committee (quarterly)**  
It deliberates the environment and safety basic plan of the fiscal year and medium-term basic plan, as well as sharing practical issues and exchanging opinions to work out a solution. Among the deliberations and decisions made by the committee, the most important ones that require a managerial decision will be discussed at the corporate strategic committee and implemented only after its approval.

**Environmental Technology Department**  
The department has control over the environment and safety sections in the Japan domestic plants and domestic and overseas group companies. The roles are to collect information about the environment and to manage and offer technical support to the group's environmental activities. Directly reporting to the director executive who is supervising the environment and safety, the department promptly responds to and practices the decisions of top management.

## All domestic plants have acquired the ISO 14001 certification. The next step is the acquisition by overseas group companies.

We realize that the establishment of an environment management system helps the effective implementation of environmental efforts. Based on this philosophy, the group has promoted to acquire the ISO 14001 certification.

Nitto Denko Electronics Kyushu (former the Kyushu

Plant of Nitto Denko) acquired the group's first certification in 1997. Following that, all plants in Japan and major group companies in Japan acquired the certification by March 2001. Seven of the overseas group companies have obtained the certification. We will further promote the acquisition as planned.

### State of ISO14001 Acquisition

#### Nitto Denko

Plant name	Date
Shiga Plant	January,1998
Kameyama Plant	April,1998
Onomichi Plant	July,1998
Kanto Plant	September,1998
Tohoku Plant	October,1998
Toyohashi Plant	March,1999
Plants at headoffice area	July, 2000

#### Group Companies

Company name	Date
Nitto Electronics Kyushu Co., Ltd.	December,1997
Nitto Shinko Co., Ltd. Head Office	September,1998
PERMACEL	May,1999
Nitto Denko Electronics (Malaysia) Sdn. Bhd.	September,1999
Nitto Denko Materials Malaysia Sdn. Bhd.	September,1999
Kyoshin Corp.	May, 2000
Nitto Denko Matex Corp.	June, 2000
Matex Processing Corp.	June, 2000
Nitoms Inc. Toyohashi Plant	February, 2001
Nitto Life-tec Corp.	March, 2001
Nissho Corp. Head Office/Sales Office	March, 2001
Nitto Denko Australia, Inc.	March, 2003
Nitto Europe N.V.	June, 2003
Nitto Material (Thailand) Co., Ltd.	November, 2003
Nitto Denko Thailand Co., Ltd.	November, 2003

## Environmental Management

### ▶ **Strict and fair environmental audits for domestic and overseas group companies**

Nitto Denko defines the purpose and method of the environmental audit in detail in the Nitto Denko Regulations for Total Safety and practices the strict audit. By the end of fiscal 2003, the audit covered Nitto Denko itself and three major group companies in Japan only. From fiscal 2004, however, the coverage of the audit implementation expands and covers domestic and overseas group companies.

The results of the audit shall be classified into major nonconformity, minor nonconformity, and requires improvement and managed as they are. To respond to the adverse findings, a remedial action plan shall be designed and carried out. The items requiring improvement shall be confirmed the improvement at the next audit.

### ▶ **Double-checking the Environment-related laws and regulations to ensure the observance**

We thoroughly ensure the observance of all environment-related laws and agreements in our business activities. Each plant shall reflect the requirements from the laws and agreements into the plant operation standards and manage whether these laws are observed or not as well as double-checking the observance in the environmental audit.

To set standard values, we define self-imposed standard values, which are severer than the official regulations, and each plant immediately takes measures if the actual values exceed the standard values.

Moreover, the environmental technology division, a corporate-level managerial division, will provide information to plants inside/outside the country when a new important law is enforced.

### ▶ **Observing strictly rigorous environmental laws of California and the EU countries**

All Nitto Denko's products distributed within the U.S.A. bear the warning defined in Proposition 65 of California, which is said to be the most severe environmental regulations in the world.

About the products for EU countries, we identified all products using the prohibited materials based on the Restrictions on Hazardous Substances (RoHS) and are replacing the prohibited materials with alternative ones.

In addition, even for the products distributed outside the EU countries, we try to replace the prohibited materials with alternative ones wherever possible.

### ▶ **All employees and staff involved in Nitto Denko's business operations have to go through environmental education**

To thoroughly ensure the activities related to environment and safety. It is essential that each individual employee increase her/his awareness and acquiring skills and knowledge.

Nitto Denko defines the Education and Training Regulations for the Environment within the Company Regulations on Comprehensive Security and has the environmental education, from general introductory lessons to special education including expertise, for employees.

Not only to our employees but also to the external staff implementing the outsourced processes, the necessary educational and training opportunities are provided.

When we outsource operations that may have a conspicuous impact on the environment (operation of special facilities based on the Water Pollution Control Law, water treatment facilities and incineration facilities), we request the outsourcing contractor to submit a document that guarantees the completion of the necessary training.

### ▶ **Minimizing environmental risks by preparing for unexpected problems**

To minimize environmental risks, we exert utmost efforts for the reduction and management of hazardous substances. To prevent water pollution, we have installed oil spill detectors and pH measurers on each drainage route to be prepared for the accidental spillage of organic solvents, heavy oil, alkali, and acid, and we constantly monitor them. If any unusual status is detected, the responsible section will emergently block the drainage to prevent the leakage of the substances into public water and eliminate the substance. The drainage is resumed only after confirming the safety through the inspection.

For the solvent collection machines and deodorizing furnaces that prevent the emission of organic solvent to the air, if any unusual condition is detected, an alarm is activated and the responsible section will take appropriate measures.

For the prevention of soil contamination, we assumed all possible emergent situations. Based on them, we have prepared operational manuals to handle each different type of pollutants and established a responsive system in preparation for emergency.

### ▶ **Report of accidents**

No environmental accident occurred in fiscal 2003.

# Overall View of Environmental Impacts

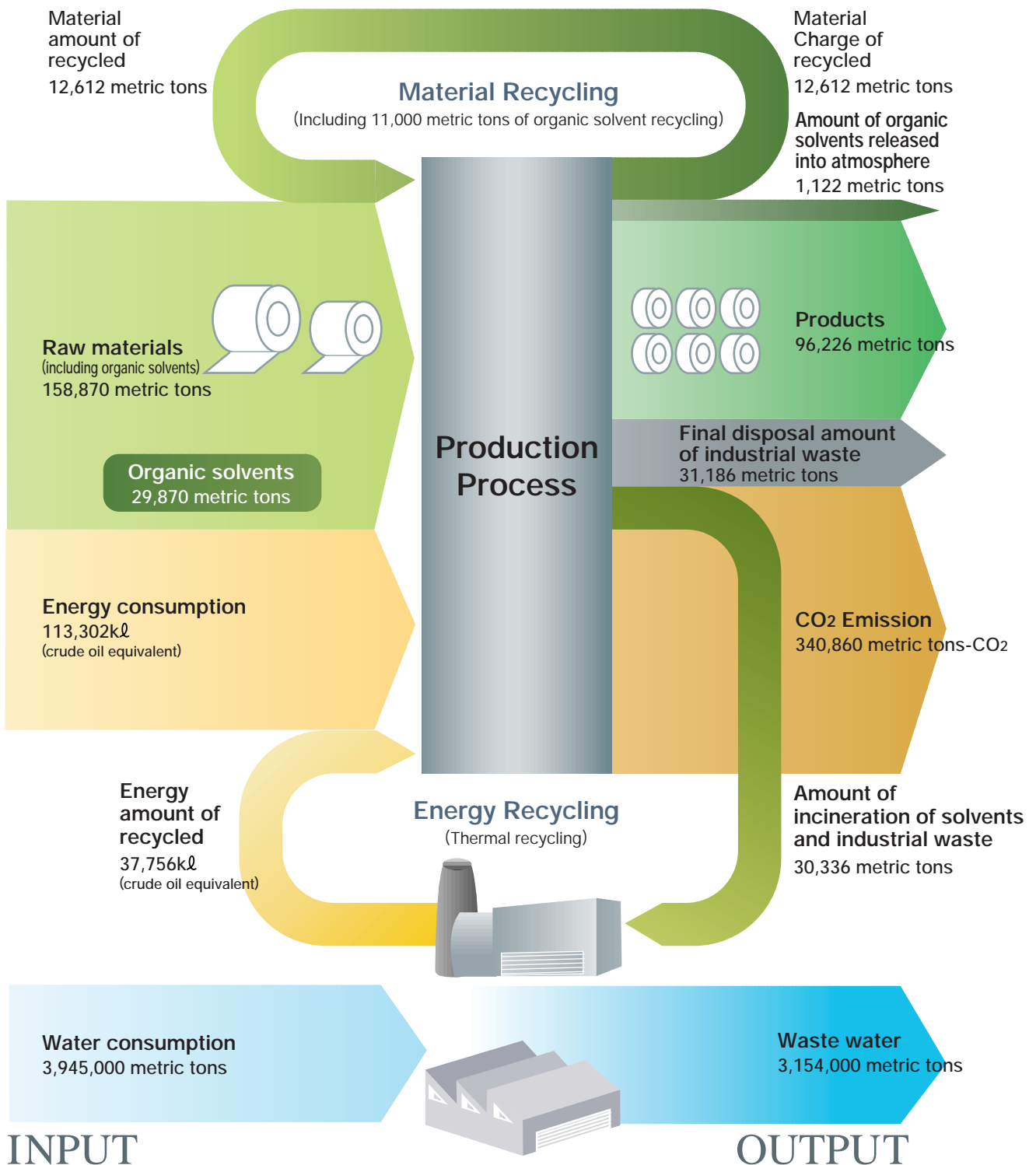
In fiscal 2003, the total purchase of raw materials (synthetic resin, paper, rubber, etc.) amounted to 158,870 metric tons (including organic solvent of 29,870 metric tons), and the total energy consumption was 113,202 kℓ (crude oil equivalent). We manufacture products using these materials and energy, recycles wastes as raw material (material recycle), and collects thermal energy as fuel (thermal recycle).

Moreover, organic solvents are collected by collection machines, and incinerated and decomposed

by deodorizing furnaces. The thermal energy generated by incineration is collected and reused. Rinse water is also collected and reused.

As a result of these efforts, in fiscal 2003, the product shipments amounted to 96,226 metric tons. We had 31,186 metric tons of waste disposal, 1,112 metric tons of solvent emission to the air, 340,860 metric tons of CO<sub>2</sub> emissions, and 3,154,000 metric tons of wastewater. The recycled energy amounted to 37,756 kℓ (crude oil equivalent).

## ● Fiscal 2003 Material Flow



# Environmental Accounting

We are working on the applications and research of environmental accounting with the goal of making business and the environment compatible

Nitto Denko Group has introduced its environmental accounting practices since fiscal 2000.

We have compiled statistics in our own way while referencing guidelines from the Ministry of the Environment and the Ministry of Economy, Trade and Industry principles to create tools that deal with reducing both, environmental impact and cost.

Our Group's approach to environmental accounting is unique in two respects. First, each business unit/group company sets an environmental budget as a goal to make environment issues and responsibility, which each company has, clear. Second, in addition to "environmental conservation costs" as articulated in the Ministry of the Environment's (Environmental Reporting) Guidelines,

we also address "environmental impact costs" as "value of industrial waste" (processing and materials costs of industrial waste that do not actually become products) as well as the cost of energy, solvent and water used at the production stage. We have made this data available, including in our financial statement announcements at the conclusion of each fiscal year.

In this way, we make efficient use of "environmental conservation cost" and can strive to cut "environmental impact costs"; thus, the total low costs is being realized by enhancing efficient use of resources. However, this has not been adequately adopted as a management guideline. We will continue researching how best to use environmental accounting as a management guideline.

## Fiscal 2003 results

In fiscal 2003, both ratios, the environmental impact cost ratio and value of industrial waste ratio, were improved.

Nitto Denko itself improved its environmental impact cost ratio (the ratio of environmental impact costs to net sales) to 15.3% (17.6% in fiscal 2002) and value of industrial waste ratio to 13.8% (15.6% in fiscal 2002). Group companies in Japan logged improvements in both, the

environmental impact cost ratio to 5.3% (5.4% in fiscal 2002) and the industrial waste ratio to 5.4% (6.0% in fiscal 2002). Likewise, group companies outside Japan also improved both, recording the environmental impact cost ratio of 8.2% (10.7% in fiscal 2002) and industrial waste ratio of 4.5% (7.7% in fiscal 2002).

### ● Nitto Denko Corporation (Non-consolidated)

(Unit: ¥million/year)

Categories	Fiscal 2003 budget (A)	Fiscal 2003 results (B)	Balance (B-A)	Budget ratio balance (B-A)	
Total sales	248,676.0	278,025.6	29,349.6	111.8%	
Production amount	234,807.6	261,861.6	27,054.0	111.5%	
Environmental conservation costs	General and administrative overhead	873.6	873.6	0.0	100.0%
	Treatment for industrial waste	1,030.8	1,161.6	130.8	112.7%
	External services for environmental management	230.4	223.2	7.2	96.9%
	Personnel	498.0	462.0	36.0	92.8%
	Depreciation	1,051.2	1,054.8	3.6	100.3%
	R&D&E	980.4	883.2	97.2	90.1%
	<b>Total</b>	<b>4,664.4</b>	<b>4,658.4</b>	<b>6.0</b>	<b>99.9%</b>
Environmental impact costs	Value of industrial waste	33,963.6	36,058.8	2,095.2	106.2%
	Energy	4,668.0	4,084.8	583.2	87.5%
	Organic solvents	2,064.0	2,163.6	99.6	104.8%
	Water	334.8	291.6	43.2	87.1%
	<b>Total</b>	<b>41,030.4</b>	<b>42,598.8</b>	<b>1,568.4</b>	<b>103.8%</b>
Ratio of environmental impact costs	16.5%	15.3%	1.2 point	92.7%	

## The Method of Environmental Accounting Calculations

### Period under review

Nitto Denko Group's accounting period (from April 1 to March 31 each year)

### Definition

- The activities related to the environment and have an impact on the environment are evaluated by monetary value (accounting information) or the amount of materials (quantitative information).
- Environmental cost consists of environmental conservation cost and environmental impact cost.

### Environmental conservation cost

Cost consumed for environmental conservation

#### 【General expenses】

From the total environmental conservation cost, waste disposal, outsourcing, salary and compensation, R&D&E costs, and facility investment (depreciation) are deducted. (Maintenance and repair costs for exhaust gas/wastewater treatment equipment, cost for ISO 14001 acquisition, activity cost required for reducing waste and saving energy, cost and

donations for environmental information disclosure and environmental advertisements)

#### 【Waste disposal】

Part of the environmental conservation cost that is required for waste disposal and recycling

#### 【Outsourcing】

Cost for subcontracting operations required for environmental conservation to the companies within/outside the group.

#### 【Salary and compensation】

Cost for the employees engaged in environmental conservation

#### 【Capital investment (depreciation)】

Total depreciation of the equipment targeted at environmental conservation (hereinafter referred to as "environmental equipment") in the target period (fiscal year)

#### 【R&D&E cost】

Total of general expenses, waste disposal, outsourcing, salary and compensation costs, and equipment investment (depreciation) for the technological development, which are mostly targeted at environmental conservation

### Environmental impact cost

Cost of the things that have an impact on the environment

#### 【Cost of industrial waste】

Material and treatment costs for industrial waste

#### 【Energy】

Total amount of the costs for electricity and fuel (heavy oil, LPG, natural gas, etc.) purchased by production factories from external parties

#### 【Solvent supply】

Total amount of the costs for organic solvents purchased from external parties

#### 【Water】

Total amount of industrial and tap water expense

#### 【Ratio of environmental impact cost】

[Ratio of environmental impact cost] = [Environmental impact cost] / [Sales amount] x 100

#### 【Industrial waste ratio】

[Industrial waste ratio] = [Industrial waste cost] / [Production amount] x 100

## ● Domestic Group Companies (Japan)

(Unit: ¥million/year)

Categories	Fiscal 2003 budget (A)	Fiscal 2003 results (B)	Balance (B-A)	Budget ratio balance (B-A)	
Total sales	33,651.6	32,866.8	784.8	97.7%	
Production amount	21,265.2	20,631.6	633.6	97.0%	
Environmental conservation costs	General and administrative overhead	14.4	16.8	2.4	116.7%
	Treatment for industrial waste	91.2	82.8	8.4	90.8%
	External services for environmental management	26.4	4.8	21.6	18.2%
	Personnel	52.8	50.4	2.4	95.5%
	Depreciation	80.4	58.8	21.6	73.1%
	R&D&E	66.0	30.0	36.0	45.5%
	<b>Total</b>	<b>331.2</b>	<b>243.6</b>	<b>87.6</b>	<b>73.6%</b>
Environmental impact costs	Value of industrial waste	1,203.6	1,112.4	91.2	92.4%
	Energy	427.2	393.6	33.6	92.1%
	Organic solvents	194.4	218.4	24.0	112.3%
	Water	7.2	4.8	2.4	66.7%
	<b>Total</b>	<b>1,832.4</b>	<b>1,729.2</b>	<b>103.2</b>	<b>94.4%</b>
Ratio of environmental impact costs	5.4%	5.3%	0.1point	98.1%	

Tabulation range: Nitto Shinko Corp., Nitoms Inc., Saitama Nitto Denko Corp., Mie Nitto Denko Corp., Nitto Life-tech Co., Ltd

## ● Overseas Group Companies

(Unit: ¥million/year)

Categories	Fiscal 2003 budget (A)	Fiscal 2003 results (B)	Balance (B-A)	Budget ratio balance (B-A)	
Total sales	56,214.0	52,573.2	3,640.8	93.5%	
Production amount	45,331.2	40,506.0	4,825.2	89.4%	
Environmental conservation costs	general and administrative overhead	74.4	139.2	64.8	187.1%
	Treatment for industrial waste	181.2	159.6	21.6	88.1%
	External services for environmental management	98.4	52.8	45.6	53.7%
	Personnel	73.2	61.2	12.0	83.6%
	Depreciation	248.4	297.6	49.2	119.8%
	R&D&E	115.2	110.4	4.8	95.8%
	<b>Total</b>	<b>790.8</b>	<b>820.8</b>	<b>30.0</b>	<b>103.8%</b>
Environmental impact costs	Value of industrial waste	2,656.8	1,818.0	838.8	68.4%
	Energy	1,665.6	1,539.6	126.0	92.4%
	Organic solvents	954.0	895.2	58.8	93.8%
	Water	80.4	66.0	14.4	82.1%
	<b>Total</b>	<b>5,356.8</b>	<b>4,318.8</b>	<b>1,038.0</b>	<b>80.6%</b>
Ratio of environmental impact costs	9.5%	8.2%	1.3point	86.3%	

Tabulation range: Nitto Denko (Shanghai Songjiang) Co., Ltd., Nitto Denko (Taiwan) Corporation, Nitto Denko Electronics Material (Thailand) Co., Ltd., Permacel, Hydranautics, and Nitto Europe N.V.

## TOPICS

### Environmental management method developed in Germany

#### Contributing to the widespread adoption of materialflow cost accounting environmental management method developed in Germany.

Yoshikuni Furukawa  
Director in charge of Sustainable Management Promotion  
Government Relations Dept.

Our company has introduced material flow cost accounting in select areas. This method refers to a type of environmental management method developed in Germany. This method takes the materials, energy and other production costs poured into producing a good and divides them into production and waste flows so that we can see exactly what is being used in the production process per unit in terms of materials and money. As a result, this shows clearly the areas of production that need to be improved to make possible introducing efficient remedial measures and investing in equipments. At Nitto Denko, we introduced this material flow cost accounting ahead of other companies, and this was profiled as part of a special event at the "government panel corner" of the Ecoproducts 2003 event.

In addition, the Ministry of Economy, Trade and Industry

is pushing the expansion of material flow cost accounting as a means of "making the environment and the economy compatible". We are wholeheartedly cooperating in activities promoting this method and participating in seminars and lectures around Japan to introduce and present cases using this accounting methodology.

In fiscal 2003, we also delivered a lecturer at Sophia University (second semester once each week) as well as at a project sponsored the Hokkaido Bureau of Economy, Trade and Industry designed to nurture "green" business people.



# Results of Environmental Voluntary Plan

In 1993, we established the "Nitto Denko Environmental Conservation Activities Plan (Environmental Voluntary Plan), as specific guidelines to guide action in facilitating environmental protection activities.

Our Environmental Voluntary Plan will be amended to meet the demands of society and the times as needed.

In 1998, we added anew the topics of "attaining Environmental Management System ISO 14001" and "environmental consideration in countries outside

Japan development projects," reflecting the Nippon Keidanren (Japan Federation of Business Organizations) "Keidanren Appeal on the Environment" (Declaration of Voluntary Action of Japanese Industry Directed at Conservation of Global Environment in the 21st Century/1996). Currently, we have set targets for the years from fiscal 2005 to 2010 and each plant and business section/division have kept working on the achievement of the targets.

## ● Achievement of Fiscal 2003 Voluntary Plan

Item		Target	FY2003 Results	Page
To reduce waste	Recycling rate	<b>FY2005 Target</b> Maintain 98% or better from fiscal 2003 to fiscal 2005	99.2% The target of the recycling rate has been achieved on the company average.	Refer to page 22
	Value of industrial waste ratio	<b>FY2005 Target</b> 12% in fiscal 2005 (5 point reduction against fiscal 2000)	13.8%	
To prevent green house effect	Consumption of energy per product unit	<b>FY2005 Target</b> 460ℓ/¥1million by fiscal 2010 (20% improvement over fiscal 1990)  <b>FY2010 Target</b> 430ℓ/¥1million by fiscal 2010 (25% improvement over fiscal 2010)	455.5ℓ/¥million (ℓ=Equivalent to crude oil) The target of the recycling rate has been achieved on the company average.	Refer to page 23
For prevention of air pollution	Organic solvent emission volume	<b>FY2005 Target</b> 1,200t/year by fiscal 2005  <b>FY2010 Target</b> 960t/year by fiscal 2010	1,122 t/year The target of the recycling rate has been achieved on the company average.	Refer to page 24
International standards for environmental protection		Our domestic production bases are continuing to improve environmental management by applying ISO 14001 at our overseas manufacturing bases as well.	<ul style="list-style-type: none"> <li>• 7 domestic sites Acquired at all of our domestic sites</li> <li>• 7 major manufacturing bases at our domestic affiliates Acquired at all of our domestic affiliates</li> <li>• 7 overseas affiliates 4 affiliates acquired in July 2003 Nitto Europe acquired in June 2003 Nitto Material Thailand acquired in November 2003</li> </ul>	Refer to page 16
Aiming at acting globally		We are carrying our environmental conservation based on "10 environmental matters to be considered for overseas business expansion" indicated by the Federation of Economic Organization, Japan in the "Global Environment Charter"	The first Environmental Security Global Meeting was held on November 19 to 21 (participants from seven companies in six nations). The meeting is to be held in fiscal 2004 to share information about environmental security globally.	Refer to page 14

## Controlling industrial wastes

Nitto Denko aims to improve the recycling rate of industrial wastes and to reduce the value of industrial waste ratio. The company will also strive to reduce the total amount of waste generated.

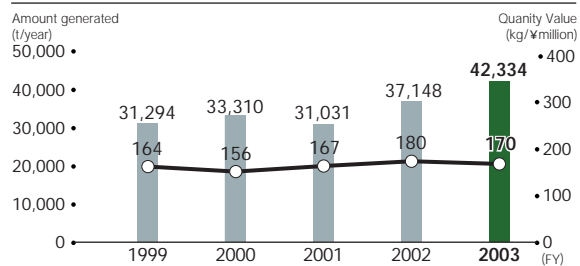
The industrial waste recycling rate of Nitto Denko marked 99.2% in fiscal 2003 (up 2.7 points from the previous year), which achieved the target of 98% or above. The value of industrial waste ratio (the ratio of material cost and processing cost of industrial waste to sales amount), which is Nitto Denko's own index, was 13.8%, representing a 1.8-point improvement from fiscal 2002. The achievement of the target for fiscal 2005 (12%) is almost secured.

However, the total amount of industrial waste generated was the largest ever, marking 42,300 metric tons and a 14% increase from fiscal 2002, due to the increase in production.

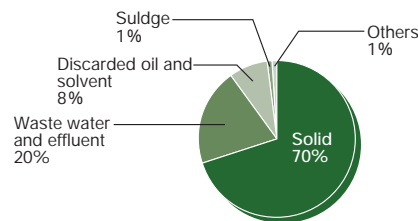
Therefore, in fiscal 2004, we have been studying measures to minimize the generation of industrial waste, including the reduction in the loss identical to

the manufacturing process, in addition to a reduction from the improvement in product yields.

### Amount of Industrial waste



### Breakdown of Industrial Waste



## Recycling industrial wastes

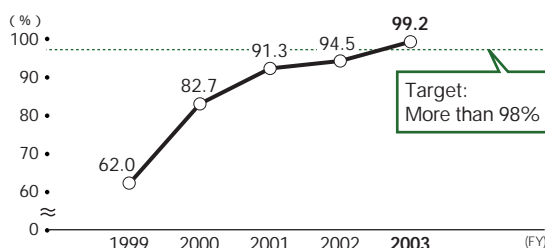
Achieving a 99.2% recycling rate as the whole Nitto Denko Corporation

Geared toward an improved materials recycling rate, all plants thoroughly separate industrial wastes according to their types and utilize them as valuable resources while the remaining waste is properly discarded. Excepting the Toyohashi Plant, the recycling process is outsourced to industrial waste disposal companies\*, and the waste goes through a thermal or materials recycling process there. In fiscal 2003, we achieved an average recycling rate of 99.2% for the company as a whole.

With incineration facilities, the Toyohashi Plant utilizes the thermal recycling process within the plant. Also, this plant implements a material recycling, industrial waste is processed for later use in products, at Aichi Nitto Denko where is located in the site of the Toyohashi Plant. The waste that cannot be processed within the plant is sent to the outsourced companies as in the other plants and goes through the thermal or materials recycling process there. Thus, the plant has been achieving a 100% recycling rate since fiscal 2001.

\*Before choosing an industrial waste disposal company, Nitto Denko carefully examines the company's capabilities through a thorough on-site investigation. Even after the selection, the company conducts an on-site investigation annually.

### Recycling rate



## Value of industrial waste ratio

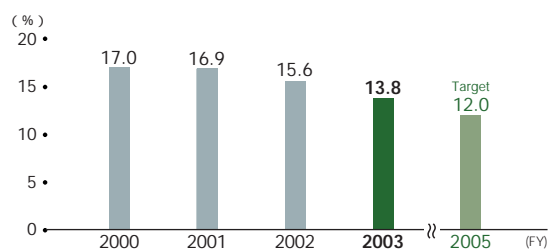
(see page 19)

12% (less 5% from fiscal 2000) is set as the company target for fiscal 2005

The value of industrial waste ratio is Nitto Denko's own index. The index regards industrial waste not only as mere material loss but also as loss including processing costs. In other words, it is the "value of industrial waste" and indicates the ratio of the value to total production. We have integrated this idea into the environmental accounting since fiscal 2000.

The company aims to achieve a 12% ratio in fiscal 2005 (was 17% in fiscal 2000) as the Nitto Denko Corporation and promotes the improvement from all aspects including the improvement of yield in business activities, reduction of energy included in the process costs, and change of production processes. In fiscal 2004, our major challenge is to take significant measures against the generation of industrial wastes.

### Value of industrial waste ratio





### ▶ Efforts to save energy

#### Target of energy consumption per product unit for fiscal 2005 is already achieved

Nitto Denko endeavors to reduce energy consumption per product unit (amount of energy consumed per production output) by effective utilization of energy. The target for fiscal 2005 is set to 20% improvement from fiscal 1990.

In addition to the energy saving effort made by people from the both energy demand and supply sides within a plant, the efforts from the special subcommittees for saving energy for all companies, which had started its activities since May 2002, are strengthened, and drastic measures have been proposed. (The subcommittees had continued the activities until August 2003.) Major proposals from the subcommittees are as follows:

#### 1) Energy savings from the energy supply side

The most typical example is the ESCO introduced into the Onomichi Plant (See page 13). Other plants are also examining the possibility of introducing the service in fiscal 2004 or 2005, after thorough consideration of the economic efficiency.

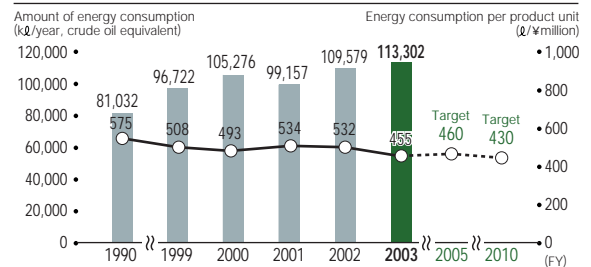
#### 2) Energy savings from the energy demand side

We have examined the possibility of introducing an energy control system. The system enables every user to easily monitor real-time energy consumption to eliminate the waste that has been overlooked and to detect abnormalities and problems at the earliest occasion. The system is planned for introduction in turn, starting from the Shiga Plant in fiscal 2004.



New deodorizing furnace under construction at the Onomichi Plant

#### ● Amount of energy consumption and energy consumption per product unit



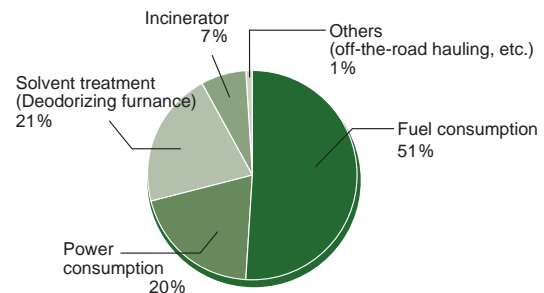
### ▶ Reducing greenhouse gasses

#### Studying new measures to reduce greenhouse gasses

Nitto Denko has taken a variety of environmental measures, including deodorizing furnaces to incinerate organic solvents emitted from the production processes (to reduce VOC gas emissions into the air), incinerators to reduce the volume of waste treatment outside the company, and a co-generation system to save energy through the simultaneous supply of electricity and heat.

On the other hand, we have to focus on the reduction of greenhouse gasses hereafter, considering the global social trend after the Kyoto Protocol (COP3). We are studying the possibilities of new measures to reduce greenhouse gasses, including the conversion of fuel to city gas, natural gas, and other fuels that emit less CO<sub>2</sub> and change of the treatment method for organic solvents from combustion to collection (reuse).

#### ● CO<sub>2</sub> emissions by factors



Solvent recovery facility at Toyohashi Plant Hisayoshi Koike (left) and Atsushi Ueda (right) are trying to reduce CO<sub>2</sub> emission.





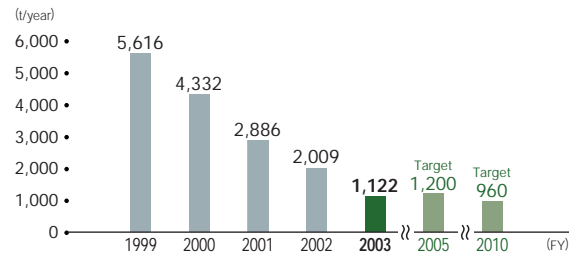
### Controlling emission of organic solvents

#### Target is achieved two years earlier

To reduce the amount of organic solvents emitted into the air, Nitto Denko has taken the measures to narrow the outlet by installing deodorizing furnaces and other equipment since fiscal 1990. As a result, the amount of the emissions has decreased year by year. It marked 1,122 metric tons in fiscal 2003, meaning that we achieved the target for fiscal 2005 (1,200 metric tons or less) two years earlier than the original plan. The solvent consumption per product unit (solvent consumed per production unit) improved 51% from fiscal 1990.

The total amount of organic solvents consumed, however, is as much as approximately 40,000 metric tons (including 11,000 metric tons to be recycled). We will strive for further improvement in the recycling rate and innovation of production processes.

#### Emission of organic solvents



#### Treatment of organic solvents

We introduced the following equipments to treat organic solvents generated at the production processes. Each equipment has a processing efficiency of 98% or more, and no major difference is found between the types of equipments. On selecting the equipment, we consider the constituents of the solvent to be treated, and the energy balance between factories to fully utilize the characteristics of the equipment.

	Direct combustion deodorizing furnace	Regenerative deodorizing furnace	Solvent collector/absorber
<b>Solvents to be treated</b>	Can be used for a wide range of solvents, excluding some specific chloric solvent.	Sometimes inappropriate for some constituents of organic solvents.	Can be used for a solvent that cannot be burned. Collection of water-soluble solvents is difficult.
<b>Energy balance</b>	Requires auxiliary fuel but can be a source of thermal energy, including steam.	Requires almost no auxiliary fuel during operation.	Requires thermal energy such as steam for absorption and desorption.

### TOPICS

#### Deodorizing furnace of the 13th factory in Toyohashi

#### Emission reduced and energy saved by controlling the operation of the deodorizing furnace

The Toyohashi Plant uses a number of organic solvents in its production processes. To minimize the emission of the solvents into the air, the plant is very positive about the installation and replacement of deodorizing furnaces and solvent collectors.

Especially, in the 13th factory (started operation in 2001), the operation of the furnace is delicately controlled. It is designed to allow users to choose the most appropriate combustion condition from four stages according to the product type. This realized not only a significant restraint on the emission of organic solvents but also the efficient utilization of heavy oil as

auxiliary fuel, resulting in saved energy.

Also, the real-time operation status can be monitored on a network, and problems are promptly dealt with if any, which are strengths of the system.



Hideharu Shigyou and Hiroshi Matsuo in charge of designing



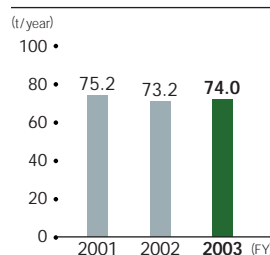
Deodorizing furnace of the 13th factory

### Other air pollutants (NOx and SOx)

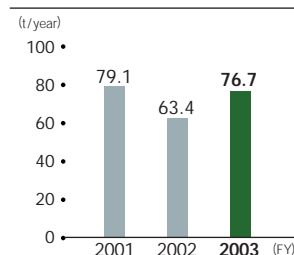
#### Executing the control and measurement for the concentration of NOx and SOx, based on laws and regulations

All plants in Japan measure concentrations of the other air pollutants, NOx and SOx, and control them based on the emissions standard.

#### NOx Emission



#### SOx Emission



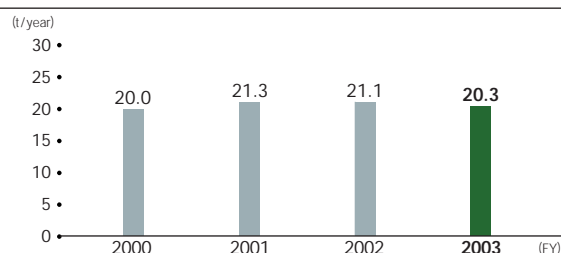
# Other Environmental Performance Data

## ▶ Preventing water pollution

### More frequent measurement of water quality than the legally prescribed level for preventing water pollution

To prevent water pollution, Nitto Denko pays constant attention to the quality of industrial wastewater and assumes strict control of it by gauging water quality more frequently than is legally prescribed. We frequently gauge the chemical oxygen demand (COD), an index of water pollution, to exercise our administrative duties faithfully to prevent water pollution.

### ● Amounts of COD



## ▶ Efficient use of water

### Recycling industrial wastewater for efficient use of water resources

To efficiently use valuable water resources and to reduce the environmental impact, all our plants endeavor to save water and to recycle industrial wastewater. For example, the Kameyama Plant reuses properly and biologically treated sewage and rainwater to flush toilets. The Shiga Plant collects part of the wastewater from the inspection process and applies a reverse osmosis membrane to reuse the wastewater.

The Onomichi Plant built a facility for recycling wastewater in 2000 and reuse the water by purifying through the membrane filter procedure as raw water.

## ▶ Environmental conservation for soil and groundwater

### Promoting elimination and reduction of three legally controlled substances

The company defined the three legally controlled substances, trichloroethylene, dichloromethane and 1,1,1-trichloroethane as voluntarily controlled substances and have made continuous efforts to eliminate or reduce their use. As a result, trichloroethylene and 1,1,1-trichloroethane were totally eliminated from our processes in 1998. The use of dichloromethane has been reduced but is not totally eliminated. It is used as a solvent for products in the Toyohashi Plant. We will endeavor to eliminate dichloromethane in the future. For self-management substances, safety education is provided for users, and measures are taken against leakage from the facility by establishing watertight banks.

## ▶ Reducing the use of paper

### The Nitto Denko Corporation is committed to reducing the use of paper

Using new pulp to make paper leads to the destruction of forest resources. To reduce paper consumption, the company totally has changed the media of internal communications from fax to e-mail since February 2004. We also thoroughly separate and collect paper, cardboard, magazines, and newspapers and outsource their treatment to recycling companies. We endeavor to reduce paper consumption, including such efforts to use the backside of used paper.

## ▶ Noise, vibration, and offensive odors

### Carrying out semiannual measurements under self-standards

For noise, vibration, and offensive odors, we established self-standards and have carried out semiannual measurements. We check whether the measurement values are within the self-standards that are stricter than the legally prescribed levels.

# Controlling Chemical Substances

## Approach to PRTR

### Straining to properly handle substances subject to Pollutant Release and Transfer Register (PRTR)

Prior to the PRTR legislation, Nitto Denko established its own Nitto Denko regulation for specially controlled chemical substances in 1995. Under this regulation, we have established and operated an original PRTR database to accurately grasp the volume of PRTR substances handled, released, and transferred. We primarily handle such organic solvents as toluene,

dichloromethane, and xylene. To control their emission, we have built collectors and incinerating equipments (deodorizing furnaces) and taken measures to prevent leakage from the production facilities. (Please see page 14, 24)

On the other hand, we positively tackle the development of products requiring no solvent, aiming to reduce the use of organic solvents. In fiscal 2003, these efforts produced an 83% reduction from fiscal 1999.

### Amount of Major PRTR Substances

(Unit: metric ton)

Chemical Substances	1999	2000	2001	2002	2003
Toluene	4,212	3,236	2,067	1,379	678
Dichloromethane	329	178	72	72	83
Xylene	31	27	26	16	20
Di-n-butyl phthalate	3	3	2	0	0
Ethylene Glycol Mono Methyl Ether	2	2	0	2	2
Ethylene Glycol	0	0	0	0	1
Dichloropentafluoropropane	22	19	14	7	3
Bis (2-ethylhexyl) phthalate	3	5	4	4	0
Poly (oxyethylene) nonylphenyl ether	0	3	9	3	1
Acrylic acid	4	1	1	1	0
Ethylbenzene	0	0	0	8	8

Note: There was an error of calculation on the amount of toluene in 2003. The figure was 2,040 metric tons in "Environmental Report 2003". So we correct its figure on this table.

## CFCs and other ozone depleting substances

### Observing the Law Concerning the Protection of the Ozone Layer and conducting proper collection and treatment

The company uses freezing machines and air conditioners (including ones for motor vehicles) containing ozone-depleting CFCs as coolant in business operations. When we discard the equipment, we outsource the collection and treatment to reliable specialists to prevent emission of CFCs into the air, under the Law Concerning the Protection of the Ozone Layer through the Control of Specified Substances and Other Measures, where proper collection and destruction of the equipment are obligatory.

## Measures against dioxins

### Preventing the generation of dioxins with measures including abolishment of incinerators and change of their structures

Simple incinerators were totally abolished before 2002. The existing incinerator in the Toyohashi Plant has a structure to prevent dioxin emissions and is operated with regular measurements based on the applicable laws.

## Storage of PCB

### Properly controlling PCB wastes under the applicable laws

About polychlorinated biphenyl (PCB) which is a hazardous substance, we are properly storing it according to the Law Concerning Special Measures against PCB waste. We will dispose of PCBs observing the directions from authorities, as soon as the disposal facility is completed.

### Amount of PCB storage

High pressure transformer	1
High pressure condensor	47
Fluorescent lamp stabilizer	250
Mercury lamp stabilizer	53
PCB oil (ℓ)	100
PCB contaminant (kg)	1,383

# Environmentally Conscious Products

When we develop products, we naturally pursue comfort and convenience. In addition, we make much of the viewpoints of safety and the environment. At the same time, we realize that we, as a business entity, can contribute to society by constantly creating new value and continuously offering that value to society. (\*indicates that it is a 'Global Niche Top' product)

## Polarization conversion film for LCDs\*

Saving resources and energy

Extending the battery life by enhancing brightness

Incorporated in the liquid crystal display (LCD) of PCs and mobile phones, the film enhances the brightness of the screen by 50 to 60%. If you maintain the brightness as usual, it extends the battery life by approximately 30%, thus contributing to energy saving.



Nipocs

## Heat-resistant barcode label\*

Conservation of the natural environment

The first lead-free, heat-resistant label to over 400 degrees Celsius

The base material of the label is silicone, and it does not contain lead. Used mostly in controlling the heat treatment process of glass and metal; the label can be used within the range from room temperature to 800 degrees Celsius.



Duratack S40H

## Toner transfer belt

Saving resources and energy

Reducing the heat load on the heater and contributing to energy savings

Polyimide is superior in heat resistance, strength, and insulation performance. The polyimide processed by Nitto Denko has a smaller thermal capacity than metals and thus reduces the load on the heater if it is used for the fixing rolls of copying machines.



Polyimide seamless belt

## Thin layer foam sealing material

Conservation of the natural environment

The world's first foam sealing material that does not include halogen

No plasticizer is used in the production process. The generation of outgas (molecular pollutant) is extremely limited; and no influence is expected on electronic devices.



Super Clean Foam

## Floor protection tape

Conservation of the natural environment

Protecting tape that does not include halogen material

The tape does not include halogen material. The generation of hazardous gas is extremely limited when incinerated after use. As it does not use lead or other heavy metals, it does not emit hazardous substances nor contaminate the soil when it is buried.



No. 395 (color of cherry blossom)

## Pest trap with pheromone lure

Conservation of the natural environment

Environment-friendly insect pest control

Being a system to capture harmful insects utilizing artificially compounded sex pheromones, it is more and more widely used as the safe and environment-friendly insect pest control.



Nitolure

## Surface protection films for automobiles\*

Conservation of the natural environment

Adopting material that does not emit hazardous gasses when incinerated

Until the finished cars are distributed to consumers, the protection film protects the paint from acid rain, dust, bird droppings, rebound stones, etc. No adhesive is left on the surface after the film is peeled off. The film is made from olefin material that does not emit hazardous gasses when incinerated.



Surface protection film for automobiles

## Product assessment based on environmental ISO standards

**Our principle: Where there is no environmental evaluation, no new product is born.**

Product assessment is conducted as a design review at the stage when the development and design departments create a new product development plan. Here, the environmental effects when a new product is completed (including when it is produced as well as distributed, used, or discarded after shipment) are assumed and compared with the existing product.

It is prescribed that if the evaluation of the new product is lower than the existing one, it cannot be produced as a finished product unless measures are taken to reduce the environmental impact.

Examples of the evaluation items are as follows:

Evaluation when it is produced

1. Energy required for production
2. Amount of organic solvents consumed
3. Amount of industrial waste generated in the production process

Evaluation after shipment

1. Energy required in the distribution/transportation (gasoline, etc.)
2. Energy and packing materials required for storage and use by a direct user
3. Method of disposal by the final user (combustion, landfill or recycling)

# Material Procurement

## Promoting green procurement

### Procuring materials with less environmental impact at appropriate costs

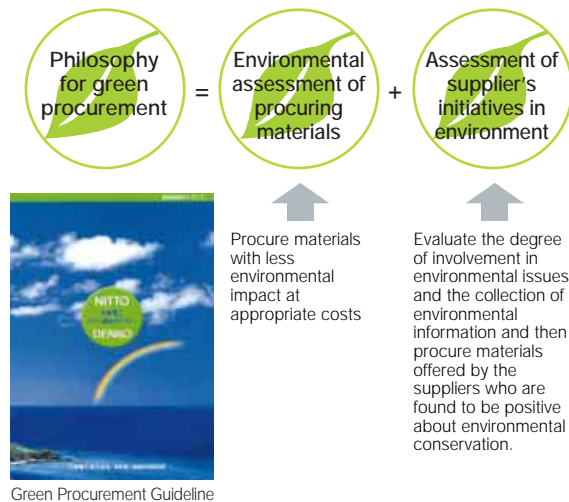
Nitto Denko practices to minimize the environmental impact on our business activities as well as promoting green procurement that materials (raw materials, production facilities, etc.) with less environmental impact are procured at appropriate costs to offer environmentally friendly products to customers.

For this purpose, we prepared the "Guideline for Green Procurement" to apply to the purchasing products from suppliers and the business activities of suppliers such as raw materials, spare parts, sub-materials, equipment, jigs/tools, fixtures, general office supplies, and subcontracted.

When selecting the procurement of materials, we examine both the environmental assessment of procuring materials and assessment of supplier's initiatives for the environment to determine the materials to be procured. In other words, we totally evaluate the degree of involvement in environmental issues and the collection of environmental information and then procure the materials offered by the suppliers who are found to be positive about environmental conservation. We prepared the "Green procurement supplier's evaluation checklist" to collect information that is used in the judgment of suppliers. Each plant adds items according to its procurement status to the list and manages the list individually. The guidelines are disclosed on Nitto Denko's website. (It was amended in June 2004.) We are committed to promoting green procurement based on it.

### Nitto Denko's philosophy for green procurement

Before the selection of materials, the company examines both the environmental assessment of procuring materials and the assessment of supplier's initiatives for the environment in determining the materials to be procured.



### Green procurement of office supplies

The company introduced Internet procurement for office supplies, as it clearly indicates which are environment-friendly products, and places a priority on such products. Although the unit price of environment-friendly products tends to be higher than conventional products, we are committed to promoting positive green procurement now and in the future.

### List of applicable materials

Applicable materials		Request to suppliers	
		Concerning assessment of materials	Concerning assessment of suppliers
Raw materials used for product manufacturing at Nitto Denko	Raw materials for film and plastic	<ul style="list-style-type: none"> <li>We ask the supplier to fill out and turn in MSDS.</li> <li>We ask the supplier turn in the materials checklist specified by Nitto Denko.</li> <li>We ask the supplier to develop and introduce environment-friendly products.</li> </ul>	We ask the supplier to fill out and turn in the questionnaire concerning the supplier's environmental initiatives.
	Packaging materials used for raw materials, etc.	We ask the supplier to consider and make suggestions concerning reusable, returnable, and recyclable packaging and sub-materials.	
Subcontracted work	Subcontracted processing	Supplier should take measures to ensure that auxiliary materials used for subcontracted work do not pose a threat to the environment or worker's health.	We ask the supplier to fill out and turn in the questionnaire concerning the supplier's environmental initiatives.
Production equipment/facilities	New production equipment	We ask the supplier to provide the basic data required for consideration prior to a decision.	
Spare parts and office supplies	Desktop consumables, pamphlets, etc.	We ask the supplier to introduce environment-friendly products, such as eco-mark certified products and products recommended by the Green Purchasing Network.	

# Environmental Communication Activities in Fiscal 2003

## Publishing an environmental report

Nitto Denko has been publishing environmental reports since fiscal 1998. In the earlier years, the report was focused on our environmental activities. Description on the social responsibility initiative was added in 2004, and the report itself was renamed "Environmental and Social Activities Report." Currently, most of the contents consist of Japan domestic information, but we will expand the scope of the report to activities in the overseas market as a global business enterprise. Please be advised that detailed information about the domestic plants, which could not be inserted in the report, will be open to the public on our Web site.



Environmental Report 2002



Environmental Report 2003

## Children's Environmental Meeting in Kusatsu

Fifteen groups of primary/junior high school students and ten groups, including NPO, got together at the "Children's Environmental Meeting in Kusatsu" held on February 7 in Shiga Prefecture. Nitto Denko (Shiga Plant) was the only participant as a private company. Many visitors including top executives from the Kusatsu city paid attention to our exhibition. Most of all, our demonstration of membrane filtration using bicycles was popular, and there was always a queue of children. Our activities were also mentioned in the group presentation of the primary school students and in the closing address. Our aspiring corporate efforts for environmental issues were conveyed to many visitors.



Children's Environmental Meeting in Kusatsu

## Explanatory meeting for the local residents

The Toyohashi Plant, one of the major production bases for Nitto Denko, regularly holds explanatory meetings for residents near the plant. We invited the local residents to the environmental conservation explanatory meeting, which presents environment activities of Toyohashi Plant, and the factory tour held at the plant site on December 11 and 16, 2003. The meeting will be held regularly in the coming years as well.



Explanatory meeting to the local residents

## Clean Operations was awarded a certificate of appreciation

Since 1996, the Kameyama Plant has participated in the local volunteer activity, and has conducted called "Clean Operations," which is cleaning the national roads etc., in the activity. The Kameyama branch of the labor union takes the initiative, and many people participated in the "Operation." The activity doesn't only mean collection of wastes. Some local people have participated by building flower beds, and local high school students have participated in the activity by painting a mural of the image of woods. The Kameyama Plant have participated the activity and worked together with the community for making the clean environment. The Kameyama Plant was awarded a certificate of appreciation for this operation in August 2003 by the Chubu Regional Bureau, Ministry of Land, Infrastructure and Transport.

The Toyohashi Plant also conducts volunteer activities to clean the Umeda River and other areas near the plant every year.



"Clean Operations for the Umeda River" by the Toyohashi Plant



Ceremony for the certificate presentation at the Kameyama Plant

**Hideto Suzuki**  
Corporate Safety Promotion Dept.

**Hideki Suehiro**  
Quality Assurance Dept.  
Quality System Development Section

**Wataru Nakao**  
Human Resource Dept.

**Toshimichi Hata**  
Human Resource Dept.

**Yoshiyuki Shimizu**  
Corporate Communication Dept.  
Compliance Group



# Under the slogan of “Open, Fair and Best”

## Compliance policy

Compliance with laws and ethics is the most fundamental social responsibility imposed on private enterprises. Nitto Denko Group wants to contribute to the sound development of society by creating new value and being a good corporate citizen.

### Guidelines for compliance with legal and ethical rules

#### 1. Along with the Society

- Companies shall be alive along with the society.
- All companies are socially responsible to comply with legal and ethical rules. On the premises of such social responsibility and respecting different regional and national cultures, we are committed to working as good corporate citizens to optimize the benefits of both our company and society as a whole, and to contribute to the healthy development of society.
- We also remain focused on the pursuit of technological excellence and committed to developing new products and new technologies, and we will, through creation of technology, contribute to the well-being of society and global environmental protection.

#### 2. Principles

- We will base our corporate activities on the management concept and behavioral norm of the Nitto Denko Group and the policy of the President, “Open, Fair, Best” to win greater trust from our customers, local communities, shareholders, and other stakeholders in both domestic and foreign countries.
- We will work to firmly establish the corporate culture in which we are allowed to fully implement the management concept, the behavioral norm and “Open, Fair, Best” routinely.

#### 3. Responsibility for stakeholders

- Stakeholders are those who have an interest in our corporate activities, including but not limited to, customers, employees, community members, shareholders, and investors. We will fulfill our responsibilities to these stakeholders with recognition that:
- Customers are our reason for existence; we will remain committed to enhancing customer satisfaction through our efforts to create new values.
  - By enhancing customer satisfaction, we can also enhance our own satisfaction; we believe that only satisfied employees can contribute to the development of good products.
  - We are also members of the local community; we will lose our *raison d'être* if our corporate activities fail to contribute to the well-being of the local community.
  - By fulfilling the above responsibilities, we can optimize the benefits for shareholders and other stakeholders and build greater trust in society.

#### 4. Behavioral norm and basic policies

- In our effort to “offer the highest quality and service,” we will

strictly comply with our basic quality assurance policy to maintain the ISO 9000 accreditation and further enhance our quality assurance system.

- In our effort to “ensure safety and contribute to natural environmental preservation and resource saving,” we will strictly comply with our basic environmental policy to maintain the ISO 14000 and OHSMS accreditations and further promote environment-friendly practices and safety measures.
- In our effort to “foster challenging spirit,” we will, on the bases our motto “change is an asset” break through conventional thinking, and place greater emphasis on rationality and speed to maximize outcome. Also, we will act with vigor and never-fading enthusiasm to open up new possibilities.

#### 5. Legal and ethical rules

<General rules>

It is a matter of course that all the officers and employees of the Nitto Denko Group strictly comply with laws and ordinances both publicly and privately. However, this does not mean that we can do anything we want as long as we abide by applicable laws and ordinances. We should be able to judge what is good and right, and base all our behaviors on such judgment.

- We will not discriminate against people on the grounds of race, creed, sense of value, personality, sex, religion, age, nationality, origin, physical handicap, or for any other reason.
- We prohibit dealings and interactions with organized crime groups, right-wing extremists, corporate extortionists, and other people involved in anti-social activities.
- We prohibit extending and accepting personal interests and favors that are illegal or that are not socially acceptable.
- We will dispense with meaningless formalities and prohibit excessive gift-giving and entertainment.

<Fair and free competition>

We will respect the legal rights of our business partners (customers and suppliers) and engage in competition that is fair, transparent and free in terms of quality, price, delivery, service, stable supply, environment, and safety.

- We will not allow any bid-rigging practices such as improper production adjustments and price agreements, which are obstacles to fair competition.
- We will comply with export provisions to maintain international peace and safety.
- We will not exploit or infringe rights and/or properties of any

other persons unreasonably. Especially, we will not attempt to obtain confidential information of other parties whether directly or indirectly without rightful reason.

<Disclosure, use, and management of information>

We will place special emphasis on communications with society, and disclose socially required information timely to achieve higher trustworthiness and credibility in society.

- We prohibit divulging and using our confidential corporate information for personal profit.
- We will deploy more reliable measures to protect information against equipment failure, disaster, misuse, loss, destruction, theft, divulgation, and interference to build greater credibility in society.

#### 6. Measures against deviation from socially acceptable practices

Deviation of corporate and industrial practices from socially acceptable behaviors can result in corporate scandals. We the officers and employees of the Nitto Denko Group shall constantly ask the following questions to ourselves to make sure that our conduct is reasonably acceptable in society.

- Is the practice in conformity with the law?
- Is the practice in conformity with the management concept and behavioral norm?
- Is the practice in conformity with “Open, Fair, Best”?
- Is the practice acceptable in society or in conformity with ethical rules? (Am I feeling guilty?)
- Is any fact concealed?
- Can I behave confidently?
- Do I respond to the demands of society in a timely and proper manner?

#### 7. Application of these guidelines to the Nitto Denko Group companies

These guidelines shall be applied to all the Nitto Denko Group companies, with the corporate ethics “help line” shared among all the group companies. However, in case any of the Nitto Denko Group companies establishes its own norm for an individual corporate ethics help line in conformity with these guidelines, such norm shall be applied to the particular company.

## Compliance policy

### Establishing a system to promote compliance

In April 2003, the Nitto Denko Group established "Guidelines for compliance with legal and ethical rules" as concrete criteria for judgment on compliance with laws and ethics. Based on the guidelines, all employees of the group endeavor to answer to the reliance and expectation from stakeholders by behaving on the basis of the slogan "Open, fair and best," which is not merely from the standpoint of compliance with laws and ethics but from the viewpoint of corporate social responsibility (CSR).



Guidelines for compliance with legal and ethical rules (see page 30)

### Establishing a Business Ethics Help Line

The Nitto Denko Group established a business ethics help line called "BEHL" to increase the effectiveness of "Guidelines for compliance with legal and ethical rules" and to strengthen the self-purification capability of the group. Auditors, outside auditors, corporate lawyers, or General Affairs GM at the headquarters will answer the alert or inquiries from employees to BEHL. The help line is operated under the policy that the first priority should be placed on both, confidentiality of information and a ban on unfair treatment of the informer. The group endeavors to complete a mechanism where employees can report any behaviors that are not compliant with laws and ethics or represent a disservice to public welfare according to, our corporate vision, employee guideline and the slogan, "Open, fair and best."



Leaflet of Business Ethics Help Line

### Compliance training course

The Nitto Denko Group offers training opportunities which include a compliance course and a risk management course for each grade and job category. The house journal also covers compliance and risk management at times when needed, and "Guidelines for compliance with legal and ethical rules" are open on the company's Web site and the intranet to enhance recognition by employees. Top management takes every opportunity to talk about corporate social responsibility and thus helps to establish compliance within the company.

### Disclosure

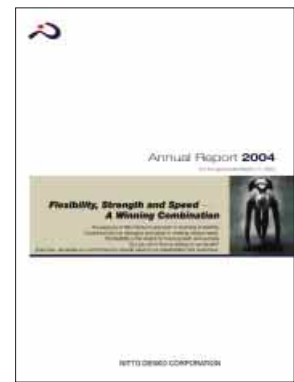
The Nitto Denko Group discloses corporate information such as the management policy, business objectives, and financial data, to the stakeholders including customers, employees, local community, shareholders, and investors at the appropriate times and in an appropriate way. We utilize a wide variety of media and tools for this purpose, including the Web site, press conferences, and explanatory meetings for analysts and investors. The Group was awarded "Excellence in IR" by the Japan Investor Relations Association (JIRA) in fiscal 2003.



Nitto Denko's website



Business Report



Annual Report

### Fair business transactions

To enhance the effectiveness of compliance, the company regulations of a ban on antisocial business transactions and export control in terms of security are set individually, and audits are conducted for that.

We make efforts to secure fair business transactions and call special attention to the Antitrust Act and prevention of delays in payment to subcontractors.



# Making the Workplace Safe and Comfortable

The plants and major manufacturing group companies in Japan have taken the initiative in practicing safety activities. However, as the business is becoming global, a number of manufacturing subsidiaries outside Japan are increasing; therefore, such safety activities need to be global as well. The first step to realize the globalization is to share information. Under this principle, we expanded its scope to include overseas group companies for the activities and held the first Environment and Safety Global Meeting in fiscal 2003. Now, we are committed to enhancing communication between the parties concerned and promote safety activities on a global scale.

## Safety and Health Fundamental Rule

### "First priority on safety"

Nitto Denko advocates "first priority on safety" in the employee guideline specified in the corporate vision and makes a variety of efforts with the slogan of "Perfectly preventing fatal accidents." The efforts are practiced based on the safety and health fundamental rule in the company regulations. The general manager (plant manager) and environment and safety division ensure safety and health in the workplace according to the applicable laws and regulations to offer a safe and comfortable environment where employees are able to work free from anxiety.

## Grasping and sharing information of occupational accidents and fire

### Promoting safety control in domestic and overseas group companies

Nitto Denko intensively monitors occupational and fire accidents as the most risky disasters. In the past, disaster statistics only covered Nitto Denko itself and major Japan domestic group manufacturing companies. In the era of expanding globalization, we decided to expand the reporting obligation for accidents and disasters to the other domestic group companies and overseas group companies after the Environment and Safety Global Meeting in November 2003. Thus, trends of accidents in Japan and overseas countries can be grasped and more effective safety measures can be taken.

From fiscal 2004, we will further promote safety control by offering substantial safety support to the overseas companies and by collaborating with the local safety staff.

As for sharing information, "Environment and Safety Page" was opened on the company's intranet in November 2003 (in English and Japanese). This helps not only sharing environment and safety information among Japan domestic plants but also sharing it among domestic/overseas group companies. If any occupational accident should occur, a prompt report of the accident would be communicated via the intranet to prevent the recurrence of the same accident.



Intranet.  
"Environment and Safety Page"

## Occupational Health and Safety Management System

### Facilitating acquisition of OHSAS and OHSMS certification

All six manufacturing plants in Japan acquired the OHSAS 18001 or OHSMS certification, which is the standard of an international occupational health and safety management system. In addition, two Japan domestic group companies and two overseas group companies acquired the certification. We facilitate the voluntary activities for occupational health and safety at each plant to obtain more certifications.

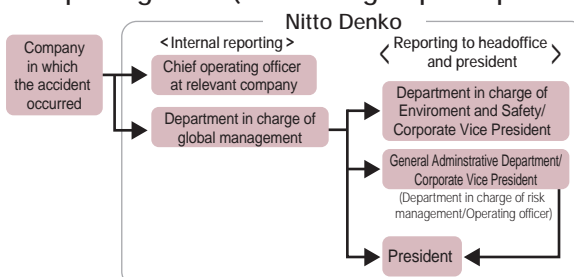
### ● Status of acquisition of OHSAS and OHSMS

Sites	Date	Applicable standard
<b>Nitto Denko</b>		
Kameyama Plant	Oct. 2001	JACO standard: FBS8800 compliance
Onomichi Plant	Dec. 2001	JACO standard: FBS8800 compliance
Toyoashi Plant	Mar. 2002	JACO standard: FBS8800 compliance
Kanto Plant	Feb. 2003	OHSAS18001: 1999
Shiga Plant	Feb. 2003	OHSAS18001: 1999
Tohoku Plant	Apr. 2003	OHSAS18001: 1999
<b>Group Companies</b>		
NITTO ELECTRONICS KYUSYU CO., LTD	Aug. 2000	JACO standard: FBS8800 compliance
NITTO DENKO ELECTRONICS (MALAYSIA) SDN. BHD.	Feb. 2004	OHSAS18001: 1999
NITTO DENKO MATERIALS MALAYSIA SDN. BHD.	Feb. 2004	OHSAS18001: 1999
NITTO LIFE-TECH CO., LTD.	Mar. 2004	OHSAS18001: 1999

## Addressing environmental, occupational, fire and traffic accidents

In a state of emergency, employees are obligated to promptly report the accident as defined in the Group Regulations. The regulation defines the communication route individually for Nitto Denko, Japan domestic group companies and overseas group companies. Any fatal accident shall be reported to the president as soon as possible.

### ● Reporting route (Overseas group companies)



# Making the Workplace Safe and Comfortable

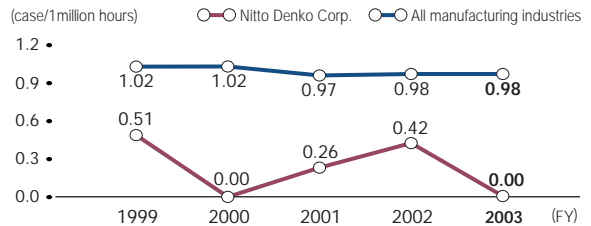
## Measures against occupational accidents

### Practicing accident prevention from both aspects of facility improvement and education

To analyze occupational accidents at Nitto Denko, it tells that injuries by being rolled into rotating parts of the equipment and cuts by edge tools occupies two-thirds of the total accidents. To cope with them, we have brought about such improvements as all exposed edge tools are covered in all facilities, and the machine will automatically stop if the cover is opened. For rotating parts, an emergency stop switch is introduced to stop the machine immediately if operators' hands or arms are entangled. On the other hand, as it was found that inexperienced operators tended to be involved in accidents, it is thoroughly ensured to stop the machine

under abnormal conditions, and more educational opportunities shall be provided for accident prevention.

### Occupational accidents frequency (Number of cases per 1 million hours)



## Fire prevention

### Being aware of the risk of fire, the group tackles fire prevention

As the Nitto Denko Group uses large amounts of organic solvents, we pay extraordinary, special attention to fire prevention. Once the fire breaks out, it may be a cause of an occupational accident. We duly regard it as a risk and tackle prevention and invention of countermeasures.

In fiscal 2003, the number of fire accidents was seven in Nitto Denko, and it would be twenty including the domestic/overseas group companies. More than half of the causes of fire were from static electricity. Our group organized a team for the prevention of fire caused by static electricity to develop preventive measures against this type of fire and study technologies for fire extinction at the earliest stage. When a fire accident occurs, a special team that includes members from the static electricity fire prevention team as main members at each local site starts an investigation. They try to find out the cause through reoccurrence tests and other measures. Based on the investigation findings, appropriate measures are taken for the facilities where

the fire broke out. At the same time, the information is shared by the group companies to take measures on similar facilities.



Each plant organizes a voluntary firefighting team



The Nitto Denko Group endeavors to share information through the environmental safety committee

## Measures against earthquake

### Education and training are repeatedly provided to prepare for earthquake

A booklet named "To prepare for earthquake" is distributed to all employees of Nitto Denko and group companies in Japan. It explains the measures that should be taken for an earthquake in production sites or at home and desirable behaviors if it should occur.

An anti-earthquake procedures manual is provided at each plant, how to handle hazardous goods in case of an earthquake is thoroughly shared by the staff, and the manual is reviewed as required. Evacuation drills are regularly executed.



Booklet "To prepare for earthquake," etc.

# To Be a Fair Company to People and Society

## Recruitment policy

Criteria of selection are personal ability and character. Nitto Denko strongly seeks self-motivated people

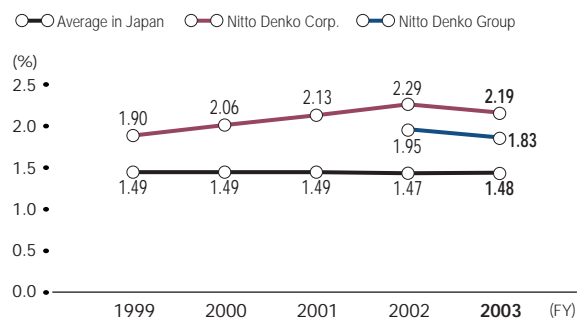
The company wants self-motivated people who can drive for innovation, creation, and independence to join us. This is because we believe that only self-motivated employees are able to enrich their own life and thus develop the business of the company. For this reason, our selection for employment values personal ability and character; also, we put priority on the interview. The interview is an opportunity where we try matching between what applicants can and want to do for Nitto Denko and the company's ideal human resource with self-motivation.

## Employment of handicapped people

A subsidiary under the auspices of government scheme for the employment of handicapped people was established

Nitto Denko Himawari (meaning "sunflower") was established in May 2000 to offer opportunities where handicapped and elderly people work to live a meaningful life, as a subsidiary under the auspices of a government scheme aimed at promoting the employment of handicapped and elderly people (Please see page 37).

### Changes in ratio of handicapped employees



## Policy and education to eliminate discrimination

The Nitto Denko Group promotes human rights enlightenment

To keep being a respectful existence in society, the Nitto Denko Group promotes the activities for enlightening employees on human rights based on its fundamental policy. We have established the Promotion Committee for Enlightening Human Rights and Promotion Secretariat Meeting for Enlightening Human Rights in our group companies. We draw up an annual plan to include measures for human rights such as training and implement the measures.

All executives and employees in the Group shall review their daily practices by following the action rules in "the Guideline for compliance with legal and ethical rules" as well as conducting mutual enlightenment activities in their workplaces.

## Education system

Supporting carrier development of each employee

Nitto Denko's education system is roughly divided into three categories:

Carrier support training aims to improve the abilities required for each stage (performance grade) beyond the border of job categories such as research and development, production, and sales.

Specialty educational training is provided for each job category such as research and development, production, and sales to improve its expertise in each category.

Life stage seminar is something different from the previous two trainings. It helps employees to look back their lives when they turn the definite years (30,40 and 55 years old) to consider their careers and life in their future.

Through these three educational programs, the company supports each employee's career development to help them lead meaningful lives.

## Establishing "Juninkan"

A training facility, "Juninkan," was completed

The sixth building at the headquarters in Japan was renovated to be a training facility, Juninkan, which was completed in January 2004. It is equipped with a lecture amphitheater and other facilities and used for a variety of training and educational opportunities including training for new employees. The facility was named by Hideki Yamamoto, chairman of Nitto Denko, and the name derives from a passage of a Chinese classic ("Kanshi") that explains the importance of cultivation of human resources. It says, "When you form a plan for the year, grow grain. When you form a plan for the next decade, plant trees. When you form a lifetime plan, cultivate human resources." The embedded meaning indicates the Nitto Denko's fundamental philosophy for cultivation of human resources.



Juninkan

## Personnel system

### “Realizing compensation commensurate with contribution” Establishing a personnel system based on a performance-oriented system

The company aims to create a working environment full of motivation and vigor by realizing compensation commensurate with the contribution. Therefore, a personnel system based on a performance-oriented system that is no discrimination by sex was introduced.

### “Evaluation system for personnel based on the performance-oriented system”

The performance-oriented system evaluates the specific actions, or exhibition of ability, and the results of the actions, while the ability-oriented system evaluates even potential ability. The result consists of the “final results,” which can be stated in figures as the performance of the company, and the “interim results,” which cannot be expressed in figures. This performance-oriented system is totally different from a result-oriented system that only the final results are evaluated.

At the “specific actions,” we clearly define what are the excellent professional actions at each job category, and based on the definition, we evaluate the “actions that are expected to produce results” are evaluated as the “action evaluation.”

For the “interim results” and “final results,” we introduce the system for management by objectives into the evaluation to set the objectives that should be achieved in the specified period of time. Then, the results are evaluated according to the degree of difficulty and achievement as the “result evaluation”. The combination of the two indices of the “action evaluation” and “results evaluation” enhances transparency and persuasiveness of the evaluation.

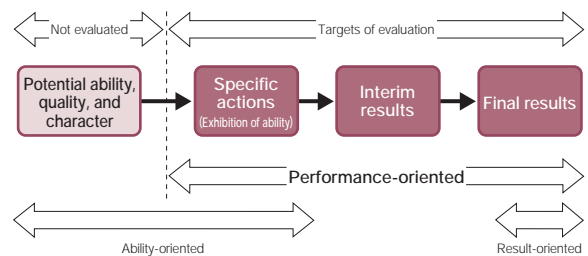
What we think the most important thing in this evaluation system is the communication between the employee and his/her supervisor. To improve the persuasiveness in the evaluation, the “evaluation interview” is held to discuss until the both reach agreement. In addition, all employees have to answer the “persuasiveness research” questionnaire, that whether the discussion at the evaluation interview and explanation of the evaluation result were appropriate or not shall be checked. The results from the questionnaire are fed back to the supervisor for improvement. Thus, the persuasiveness in the evaluation is further strengthened. On the other hand,

the appraiser training is provided for the person who evaluates employees (appraiser) to learn and improve her/his evaluation skills for executing fair evaluation.

### ● Definition of performance-oriented system

The performance-oriented system is clearly defined as a criterion that measures the contribution of the employees.

#### Targets of evaluation in the performance-oriented system

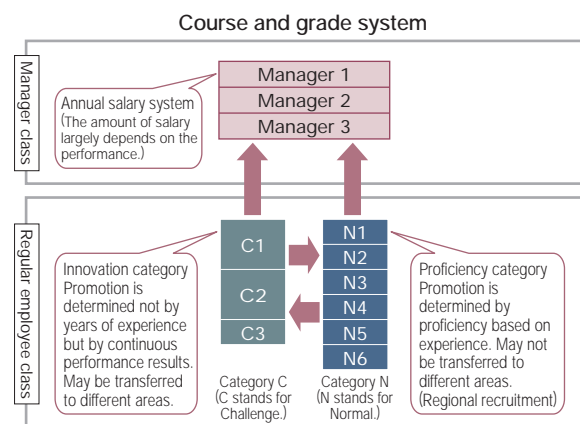


### “Course and grade system”

All employees are classified into two categories: Category C for people who are expected to innovate the operation or Category N for people who are expected to acquire proficiency in the operation. The company puts a clearly different expectation and role on each category, which are reflected in the compensation scheme. Each employee has a choice between the two, which contributes to the improvement in career consciousness and responds to the variation of career style. Moreover, the category can be changed in the middle of the career by the employee’s request and the recommendation from the supervisor.

### ● Course and grade system

Each employee shall choose the course and aim for innovation, creation, and independence in each category.



## Technique Training Course

### Technician cultivation system to handover manufacturing techniques to the next generation

The Technique Training Course is a technician cultivation system that is the company established to handover the techniques used in the manufacturing processes to the next generation. Based on proficiency and the difficulty of the technique, the four technical levels from the special grade to the third grade are defined. The characteristic of the evaluation is its focus on problem-solving capability in the real fields.

The Technique Training Course was approved at a top management conference in March 1994. Three years were spent for the basic preparation, such as building the technical grade scheme and preparing textbooks. Then, the first course started in the Toyohashi Plant, where the largest amount of know-how has been accumulated. Now, we have 28 first grade technicians (cumulative total) and many other technicians improving their skills.

# To Fulfill our Responsibility to Customers as a Manufacturer

The Nitto Denko Group defined the Fundamental Quality Policy “Quality that satisfies customers” based on the corporate vision and employee guideline to pursue increasing customer satisfaction with our excellence in quality and service.

## To realize quality that satisfies customers

**We are building an effective quality management system**

Nitto Denko has established an efficient quality management system that can accommodate a variety of business styles so that we are able to have business with them.

To ensure the group's slogan “Same Brand, Same Quality,” we identify and improve apparent and potential issues on quality by defining a common quality index throughout the group and providing consolidated management of them. Furthermore, to maintain and improve the quality management system, a quality audit is regularly conducted to take corrective and preventive measures where and when necessary in six plants/six group manufacturing companies in Japan, and eight overseas group manufacturing companies.

## Efforts for product safety

**We take measures by following the fundamental policy regarding product safety**

The Nitto Denko Group has endeavored to ensure consumer safety under its corporate vision and fundamental quality policy. In 1995, the Product Liability Law was enforced and, taking this opportunity, we defined five practical approaches as the fundamental product safety policy saying, “Providing customers with safe and useful products is the social mission of private enterprises.” The policy is reflected as the fundamental product safety regulations and the management regulations of the material safety data sheet (MSDS), and the company takes perfect measures to realize product safety through audit at each plant.

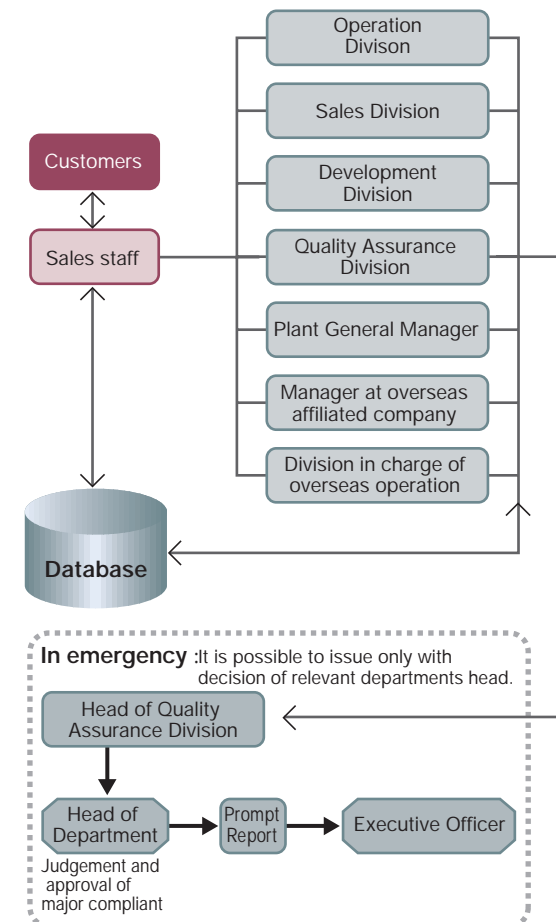
## To collect market intelligence and to address complaints promptly

**Maximum utilization of the information system**

To improve customer satisfaction, it is important to effectively utilize the information about the customer and the market. For this reason, our group established an intranet quality information system in 2000, where the Japan domestic plants and the domestic/overseas group companies could view and enter data. This facilitates collecting and sharing information about quality and enables us to utilize it in improving products and services.

If any quality issue should occur, the information is promptly communicated within the company using the intranet quality information system and appropriate measures are taken to minimize the damage to customers. In addition, significantly serious quality issues that may affect company management are simultaneously reported to the top management to urge them to appropriately make a judgment and give direction. At the same time, the whole group becomes aware of the issue and works on the prevention of reoccurrence and preventive measures for it.

### Quality information system for customers



# Relationship with the Local Community

Each plant of Nitto Denko promotes local social activities through participation in community events, such as festivals, inviting primary school students to the plant, donating blood, and contribution and fundraising activities.

## Rice cake making festival at year end—Toyohashi Plant

On December 17, 2003, the Toyohashi Plant held a rice cake making festival inviting children from Iwasaki Gakuen kindergarten, social welfare corporation. The rice cakes were presented to the kindergarten, and all children were very delighted. It was the 25th festival



Rice cake making festival

and has become a big year-end event for the children. The plant donated part of the year-end donation from staff to the kindergarten.

## Awarded by the Minister of Health, Labor and Welfare for donating blood—Kanto Plant

Each plant donates blood every year. In July 2003, the Kanto Plant was honored by the Minister of Health, Labor and Welfare for "the Gathering of Mutual Cooperation by Blood Donation" in Saitama. We were selected from organizations that had been donating blood for more than twenty years and were awarded a certificate of appreciation by the Minister of Health, Labor and Welfare in the past.



Commendation certificate

## Participation in the local festival—Onomichi Plant

The Onomichi Plant has participated in the "Onomichi Port Festival" held in the early summer since 1996, when the plant started operations. We participate in the dance festival hosted by the Onomichi Chamber of Commerce and Industry. In addition, Japanese-Brazilian workers of the plant (employed by Maruai Unity) held a samba parade for the past three years to boost the mood of the festival.



Samba Parade

## Inviting students to a factory tour—Tohoku Plant and others

Each plant invites students to a factory tour. Eighteen students and a teacher from Iketsuki Primary School nearby visited the Tohoku Plant as a part of a social studies class on November 5, 2003. They toured the first and sixth factory and intensively listened to the explanation of each process. In the adhesive tape test, in particular, many students were interested in the difference between our product "Yu-ki Ban\*" and conventional tapes.



Factory tour

\*A gentle adhesive tape using gel adhesives that prevent peeling off of a stratum corneum. It reduces skin irritation and enables re-taping.

### TOPICS

New subsidiary to promote employment of handicapped and elderly people

#### Nitto Denko Himawari was established

Nitto Denko Himawari (meaning "Sunflower") was founded on May 1, 2000. Through joint capital investment with Nitoms, one of the group companies, it was established in the Toyohashi Plant site under the auspices of a government scheme aimed at promoting the employment of handicapped and elderly people. The objective of the company is to offer opportunities where handicapped and elderly people can work to motivate them for independence. Safety and ease of operation are well considered in designing the work facilities and workbenches, while barrier-free access is realized in corridors and restrooms as a matter of course, thus realizing a comfortable working environment.

They mostly cut, package, pack, and inspect the tapes and sheets that are manufactured at the group companies. The work is shared according to the capability and suitability of each worker. As of April 2004, forty-one people work in total including twenty-one handicapped people as permanent employees and twelve elderly people as fixed-term contractors.



Sunflower that employees grew on a premise

# Comparative Table with MOE Environmental Reporting Guidelines (Fiscal 2003)

Field		Item		Page
1	Basic Headlines	1	CEO's statement	P.P. 5, 6
		2	Foundation of reporting (Reporting organization, time period, fields)	P. 4
		3	Summary of the nature of the business	P. 2, 3
2	Summary of Policies, Targets, and Achievements for Environmental Consideration at Business Activities	4	Business policies and posture regarding environmental consideration	P. 15
		5	Summary of policies, targets, and achievements in environmental consideration	P. 21
		6	Material balance of business activities	P. 18
		7	Summary of environmental accounting information	P.P. 19, 20
3	State of Environmental Management	8	State of environmental management system	P.P. 16, 17
		9	State of environmental-conscious supply chain management	P. 28
		10	State of research and development of technologies for environmental conservation and environment-conscious products/services	P.P. 8 ~ 10, 27
		11	State of the disclosure of environmental information and environmental communication	P. 29
		12	State of compliance with environmental regulations	P. 17
		13	State of social contribution related to environment	P. 29
4	State of Activities for Reduction of Environmental Impact	14	Total energy consumption and measures for its reduction	P.P. 18, 23
		15	Total input of materials and measures for its reduction	P.P. 18, 22
		16	Amount of water used and measures for its reduction	P.P. 18, 25
		17	Greenhouse gas emissions and measures for its reduction	P.P. 18, 23
		18	Amount of chemical substance discharged, transferred and measures for its reduction	P.P. 18, 26
		19	Amount of production/sales of products/services	P.P. 2, 3, 18
		20	Total amount of wastes, amount of final disposal and measures for its reduction	P.P. 18, 22
		21	Amount of water used and measures for its reduction	P.P. 18, 25
		22	State of environmental impact from transportation, and mitigation measures	
		23	State of green purchasing and its promotion measures	P. 28
		24	State of products/services that could contribute to the mitigation of environmental impact	P. 27
5	State of Social Activities		Information on occupational health and safety	P.P. 32, 33
			Information on human rights and hiring	P.P. 34, 35
			Information on respect for and preservation of local culture	P. 37
		25	State of information disclosure on non environment-related issues and social communications	P.P. 31, 37
			Information on extended consumer protection and product safety	P.P. 36
			Information on politics and ethics	P.P. 30, 31
			Information on privacy protection	P. 30

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