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www.daicel.com/en



The Daicel Group CSR Report 2012





The Daicel Group 2012 CSR Report 2012





The Best Solution for You

The Daicel Group proudly delivers the best solutions to the global market

Corporate Objective We contribute to a better quality of life by developing and manufacturing products that society needs and values.

Daicel Spirit

- Integrity and Ceaseless Efforts
- Focus on Creation of New Value (Monozukuri)
- Respect for Individuality and Achievements



Major applications of **Daicel Group Products**

The Daicel Group's products include many basic materials.

As such, the general public may come in contact with them without even noticing it. Here we introduce finished goods around you that are produced using Daicel Group products and materials.

Pharmaceutical

development

Chiral columns

Water filtration and wastewater treatment Reverse osmosis membranes and ultrafiltration membranes

> Production capacity (Daicel estimate)

> > Airbag systems

Inflators

Polyester fibers Acetic acid

Eyeglass frames and ping-pong balls Celluloid



electronic components

POM, PBT, LCP and PPS

Cigarette filters Acetate tow,

Cellulose acetate

harmaceuticals Ketene derivatives, monochloroacetic acid, amines and pyridines смс

ales share (Daicel estimate)



anacity (Daicel estimate) Auto parts

POM, PBT, PPS, SAN and ABS

Automotive paints Caprolactone and special epoxy resins



strainer

Agricultural materials

Foamed polyethylene

netting

Freshness clips



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The Daicel Group CSR Report 2012

Daicel Corporation has published an annual Environmental and Safety Report since fiscal 2000 (year ended March 31, 2001). Each of these reports served as a compilation of the Company's Responsible Care Initiatives, focusing on the reporting of environmental and safety activities implemented each fiscal year. From fiscal 2007 (year ended March 31, 2008), the scope of reporting was expanded to include social activities, and the report title was changed accordingly to Environmental, Safety and Social Report. From fiscal 2009 (year ended March 31, 2010), CSR reporting was enhanced with the addition of "Carrying out CSR Initiatives."

Since 2010, we adopted the title, The Daicel Group CSR Report, in order to publish the reports with due consideration given to reader-friendliness, understandability and proactive disclosure.

This CSR Report 2012 is primarily a compilation of the Daicel Group's activities in the areas of business, social contribution, environmental preservation and safety during fiscal 2011 (year ended March 31, 2012).

Also, in order to ensure the reliability of its reports, Daicel has submitted them to the Japan Responsible Care Council (JRCC) for third-party verification annually since 2004.

* CSR Reports of Polyplastics Co., Ltd.

Group company Polyplastics' CSR reports are provided on their website at:

http://www.polyplastics.com/en/company/csr/index.vm





Q1

What kind of year has 2011 been for the Daicel Group?

L ooking back over 2011, many precious lives were lost to a succession of natural disasters. On March 11, the Great East Japan Earthquake followed the earthquake disaster in New Zealand. The summer months then witnessed massive floods in Thailand. Impacted by these events, and as a Group that is engaged in manufacturing activities, 2011 was very much a year of struggle to overcome serious interruptions to supply chains.

From a production perspective, some of the Daicel Group shifted their operating structure to accommodate plant work on weekends and holidays and adopted a block system to address the need for power demand and supply adjustments over the summer. At the same time, we encountered instability in operating rates due mainly to interruptions in the supply chain. It goes without saying that operating rates of 100% are always the preferred option. Forced to confront emergency conditions, however, we are pleased that this period of uncertainty did not result in a major accident or issue concerning faulty products.

Moreover, production of such mainstay products as sorbic acid and potassium sorbate was suspended at our Arai Plant in Niigata due to harmful rumors regarding radioactivity. With this halt in domestic production, activities were consolidated into our bases in China. With respect to new projects identified under our medium-term plan, we We are boldly taking up the challenge of achieving the targets outlined in our 3D-I medium-term plan and working resolutely toward creating new projects, promoting further growth in core businesses and accelerating the expansion of our global business.

Misao Fudaba

President and CEO, Daicel Corporation

M. Fudaba

were also forced to postpone our pursuits in each area owing to the damage incurred by customers as a result of the earthquake disaster.

Q2

What changes if any have been made to safety countermeasures in the aftermath of the earthquake disaster?

hemical plants are generally located in close proximity to waterways. With this in mind, initiatives were included in our medium-term plan, formulated in 2010, to systematically invest in the seismic assessment and strengthening of our production facilities as well as tsunami and other countermeasures from a medium- to longterm perspective. In light of the earthquake disaster, however, we are now placing equal emphasis on our network of offices and the protection of human life. Our plan now includes a variety of additional considerations including the relocation of emergency power systems aimed at ensuring maximum safety.

In addition, we have adopted an emergency call system to ensure that the structure of our Companywide emergency headquarters is better positioned to take decisive and timely action. In the wake of the earthquake and subsequent tsunami, we also conducted practical Companywide disaster response exercises. This system is an effective safety confirmation tool and we intend to promote its use across the Group as a whole in fiscal 2012.

In order to assist employees who encounter difficulties in returning

Basic Philosophy

1. Corporate Objective

We contribute to a better quality of life by developing and manufacturing products that society needs and values.

2. Daicel Spirit

(1) Integrity and Ceaseless Efforts
(2) Focus on Creation of New Value (*Monozukuri*)
(3) Respect for Individuality and Achievements



The Daicel Group's CSR

Basic Philosophy, Conduct Policy and Code of Conduct



to their homes, we have secured alternative accommodation and stockpiled food reserves.

On the employment front, the Daicel Group also remains committed to providing all necessary support. While our domestic operations are primarily located in the western regions of Japan, we have actively approached students and mid-career employees in the Tohoku District offering opportunities for employment. Several individuals have taken up our offer and are now integral members of the Daicel Group family.

> CSR initiatives are generally regarded as part and parcel of ongoing business activities and the means through which a company fulfills its corporate philosophy. In this context, how are the Group's products benefitting society?

The Daicel Group strives to contribute to a better quality of life by developing and manufacturing products that society needs and values. With this as our overarching corporate objective, we are actively engaged in the global development of businesses across the four mainstay fields of cellulosic derivatives, organic chemicals, plastics and films, and pyrotechnic devices.

In each of these four business fields, we boast a global-scale customer base and strong market share. In our cellulosic derivative activities, mainstay products include tricetyl cellulose (TAC) and acetate tow for cigarette filters. Primary products in organic chemicals, plastics and films as well as pyrotechnic devices include TAC, acetic acid, a feedstock material for acetate tow, and chiral columns for pharmaceutical use; polyacetal (POM) and liquid crystal polymers (LCP); and inflators for automobile air bag systems, respectively. In each field, we are working to fulfill our responsibilities toward stable supply and quality and are actively promoting daily production innovation initiatives^{*1}.

Note: 1. Please refer to "Major applications of Daicel Group Products" on page 2 for details.



What progress was made during fiscal 2011 to advance Daicel's Corporate Ethics and Responsible Care initiatives, which collectively underpin the Group's CSR activities?

SR initiatives represent the practical application of the Daicel Group Conduct Policy. Our CSR initiatives are in turn underpinned by the Daicel Group's Corporate Ethics and Responsible Care initiatives. Under our Corporate Ethics Initiative, and in light of the critical need to ensure that each and every employee is well versed in corporate ethics, we established the Corporate Compliance Program Division and are undertaking activities aimed at bolstering our corporate ethics promotion structure and systems*2. Corporate compliance was a topic of increasing social concern throughout fiscal 2011. Against this backdrop, we conducted corporate ethics training in an effort to enhance employee awareness toward the importance of compliance with corporate ethics as well as all statutory and regulatory requirements. We also implemented a series of seminars encompassing Daicel Group companies focusing on legislation specific to the Group's activities including the Act against the Delay in Payment of Subcontract Proceeds, etc. to Subcontractors as well as legal requirements with respect to intellectual property.

In the context of our Responsible Care Initiative activities, I am confident that we have made considerable progress in promoting energy conservation awareness as a part of efforts to prevent global warming and reduce CO_2 emissions. The Energy Conservation Committee, a Groupwide Daicel organization, is taking the lead in promoting various initiatives. Thanks to this Committee, we are continuously achieving improvements in efforts to reduce year-on-year energy consumption rates below 1% as required under the law. We have also made steady progress in the implementation of environmental measures aimed at achieving the in-house target for reducing substances that fall within the scope of VOC and PRTR requirements to 40% by 2013.

From an economic point of view, the trend toward globalization is expected to gather momentum. In order to bolster the business platforms of overseas Group companies, it is vital that we continue to promote the Responsible Care Initiative. In this regard, I am convinced that we are witnessing steady progress.

Note: 2. Please refer to "Corporate Ethics (Compliance) Initiatives" on page 38 for details.



What progress have you seen in new projects identified under the 3D-I medium-term plan?

e have positioned the electronics field at the heart of our new project activities focusing primarily on functional chemical products and functional films.

In functional chemical products, we are drawing on such base materials as cycloaliphatic epoxy compounds and composition resins to develop LED encapsulants that use adhesive and sealant technologies, semiconductor mounting materials, power semiconductor and printable electronic materials as well as optical lens high heat resistant resins.

In functional films, we are incorporating proprietary film and coating

technologies as well as additional value-added technologies to develop films for use in touch panels, light guiding films for mobile phones and transparent barrier films.

Progress in each field, however, is bringing to light new issues at the development stage. We are adopting a repetitive process of trial and error to overcome each issue. Innovative product markets, which are in an advanced development stage, are forever susceptible to shifts in demand and technology trends. At Daicel, we refer to these shifts as "turning points." Each turning point gives rise to a conflict between the opportunity to enter new markets and fields, and the need to delay development due to the incidence of new issues. This is in effect the fate of any company engaged in manufacturing activities.



What are your thoughts on such factors as sharp increases in the price of raw materials and fuels as well as fluctuations in foreign currency exchange rates that place downward pressure on production activities in Japan?

W ithout doubt, the prices of methanol, Dubai petroleum and domestic naphtha continue to rise sharply. There is indeed a distinct pall hanging over Japan's manufacturing sector suggesting that domestic production is no longer viable and that shifting facilities overseas is the only solution. Our business is not, however, determined purely by circumstance and any one particular trend.

Taking into consideration the 8,000 Daicel Group employees worldwide, and a comparison of productivity between domestic and overseas operations, Japan's high cost structure is clearly evident. As is the case

Conduct Policy

We, the Daicel Group, have established the following Conduct Policy in order to realize our Basic Philosophy. Every member of the Daicel Group shall fully understand and voluntarily consider this Conduct Policy and shall put it into practice in a tangible way through their daily activities.

- 1. We shall not only comply with all laws and regulations but also act with high ethical standards and sound judgment.
- We shall contribute to the development of society as good corporate citizens.
- 3. We shall offer safe, high-quality products and services that satisfy and gain the trust of our customers.
- 4. We shall contribute to the development of local communities by complying with international rules and each country's laws and regulations and by respecting local cultures and customs.
- 5. We shall willingly and justly disclose reliable corporate information.
- 6. We shall conduct honest trade in accordance with the basic principles of fair and free competition.

We shall work positively to conserve the natural environment and to ensure safety.

- 8. We shall properly manage corporate assets and information.
- 9. We shall respect the diversity, personality and individuality of every member of the Daicel Group and shall maintain a healthy and comfortable work environment that is free from discrimination and harassment.
- The Daicel Group Conduct Policy: www.daicel.com/en/profile/policy.html
- The Daicel Code of Conduct: www.daicel.com/en/profile/standard.html

with such developed countries as the U.S., there is a level of inevitability attached to the production and flow of mainstay products from Japan to overseas markets.

Despite the high-cost structure of production like in Japan and the U.S., however, each country offers certain strengths including advanced productivity together with a flexible manufacturing process that cannot be found in developing countries. From this standpoint, our plants in Japan are not solely regarded as a nursery for technology development. Working diligently to reduce costs in an effort to minimize the effects of fluctuations in foreign currency exchange rates, we are positioning our plants in Japan as mother factories that are more than capable of competing with plants overseas. In this sense, we do not envisage a complete withdrawal from production in Japan and believe in the critical need to maintain the twin pillars of "domestic and overseas" or "developed and emerging countries" with respect to our production, research and development activities.

A uniform Groupwide approach is essential to addressing and overcoming global competition. In this context, what is the current status of the Group's initiatives?

e continue to expand the scope of our Groupwide activities. Beginning with our Daicel Production Innovation Initiative^{*3}, which is now considered synonymous with improvement activities within process-type industries, we are pushing forward Groupwide activities at our Operation Training Center, conducting the Global KAIZEN Contest and improvement case study meeting^{*4} throughout the Group. The Global KAIZEN Contest is a key initiative of our Pyrotechnic Devices business (inflators for automobile air bag systems, aerospace and defense systems). Each year, employees from all over the world assemble at our Harima Plant in Hyogo Prefecture to openly exhibit their daily efforts toward improving operations. In this manner, we are endeavoring to further foster a mindset that is geared toward improvement activities. Due mainly to the economic environment, the Contest was cancelled in fiscal 2011. Plans are in place to revive this initiative in fiscal 2012.

Inspired by the improvement activities of overseas staff on show at the Global KAIZEN Contest, plant general managers and employees working in Japan decided to hold an Inaugural Improvement Case Study Meeting. Beginning with participants from six domestic plants, this event has blossomed and today plays an integral role in sharing examples of successful initiatives among all plants and fostering a stronger sense of unity throughout the Group. I personally witnessed the entire process from preliminary rounds to final selection. I take great pride in the fact that each initiative is not merely a stand-alone event, but the culmination of individual daily efforts and hard work.

Notes:

- 3. Daicel Production Innovation URL: http://www.daicel.com/production/
- Please refer to "Initiatives Aimed at Fostering a Sense of Unity throughout the Daicel Group" on page 14 for details.

Basic Purchasing Policy

The Raw Material Purchasing Center in charge of the purchase of raw materials and the Engineering Center Procurement Group responsible for the purchase of machinery have worked together to formulate the Basic Purchasing Policy. This Basic Purchasing Policy helps the suppliers who provide us with raw materials, equipment and services in the supply chain to better understand Daicel's approach to purchasing, while encouraging them to cooperate with us in fulfilling our CSR throughout our supply chain.

Basic Purchasing Policy

In keeping with courses of action intended to implement the Daicel Group's basic philosophy, we shall comply with the following Basic Purchasing Policy when purchasing from suppliers.

Fair & Rational Transactions

- We provide fair participation opportunities for transactions.
- Our overall considerations are matters of quality, price, stability of supply, technological development capability, environmental consideration and efforts to ensure safety. We consider these aspects in a comprehensive manner based on their economic rationality.
- We conduct our purchasing activities in an open manner with no regard for previous dealings or for whether the provider is located inside or outside Japan.

Q8

What are your thoughts on global management going forward?

O verseas employees already account for around half of the Daicel Group's total workforce. Promoting localized management and business operations that accurately reflect the conditions and attributes of each country are essential to future success. In contrast, every effort is being made to the maximum extent possible to align Group activities to the Corporate Ethics and Responsible Care initiatives put forward through each head office division, the Audit Division and in-house companies in Japan.

Our intentions here are to reflect our origin as a Japanese company. While accepting our status as a global company, we are not without nationality. Throughout our operations in Japan, our attitudes and behavior stem from a corporate culture that places the utmost emphasis on improving our activities on a daily basis for the benefit of our customers irrespective of conditions prevalent at the time. This corporate culture is the cornerstone of our Corporate Ethics and Responsible Care initiatives and must be a common theme that binds the entire Group. There is therefore the vital need for overseas bases to take the time to understand and absorb this culture, bringing every component of the Group to the same level.

In the event, however, of a strategic merger as identified under our medium-term plan, accelerating our growth in a single burst will take priority. We cannot afford the luxury of taking our time when opportunities for expansion arise. Recognizing the inevitability of differing cultures, it is imperative that we try to learn from one another as we work toward realizing a single fundamental philosophy.

Legal Compliance, Confidentiality and Information Disclosure

- Our business operations shall be based on legal compliance as well as corporate ethics.
- We strictly protect confidential information gained through businesses, and we never infringe third parties' intellectual property rights.

Establishing a Relationship of Trust

• We strive to establish better partnerships with our suppliers by pursuing mutual economic benefit.

Initiatives based on CSR perspectives

• We promote our CSR Initiatives with the aim of enhancing corporate value for both our suppliers and us.

www.daicel.com/en/purchase/



In closing, do you have any message for stakeholders?

B eginning each year under a cloud of uncertainty has become a normal occurrence. Against this backdrop, it is the responsibility of management to steer the Group over the short term without losing sight of the medium- and long-term future. This medium- and long-term stance encompasses the purpose and purport of our cherished Basic Philosophy as well as the principles of our Groupwide long-term vision which focuses on addressing the needs of society and becoming a company that proudly delivers best solutions to the global market. With this in mind, we recognize that continuous research and development together with capital investment are essential in realizing this vision. From a short-term perspective, on the other hand, the management targets identified under the medium-term plan are a primary concern. In this regard, efforts to further bolster mainstay businesses and to adhere strictly to a policy of cost reduction as a part of efforts to realize management targets become vital.

Under these circumstances, and as earlier mentioned, the Daicel Group's performance in fiscal 2011 ended March 31, 2012 was impacted by the economic environment. Net sales came in at ¥341,942 million while operating income, ordinary income and net income totaled ¥20,426 million, ¥21,094 million and ¥11,827 million, respectively. While these results fell short of established targets, I am confident that our product development endeavors have met the expectations of customers.

In fiscal 2012, the second year of our medium-term plan, we will redouble our manufacturing activity efforts inspired by the energy inherent in the Daicel Spirit. In this context, we will engage in management with the aim of generating returns to all stakeholders.

Outline of the Daicel Group

The Daicel Group includes Daicel Corporation, its 57 subsidiaries, and 11 affiliated companies. The Company's primary business is the manufacture and sales of cellulosic derivatives, organic chemicals, plastics and films, pyrotechnic devices and other products. The business segments of Daicel Corporation, its subsidiaries, and affiliated companies are shown below.





Sales and Ordinary Income



Sales by Segment

Cellulosic Derivatives	21.19
Organic Chemicals	22.4
Plastics and Films	39.09
Pyrotechnic Devices	15.69
Others	1.9





Number of Employees by Segment



O Global Network

The Daicel Group has continued its global expansion since Daicel (U.S.A.), Inc., our first international affiliate, was established in Los Angeles in 1984. The Group now lists 40 overseas affiliates. For the fiscal year ended March 31, 2012, overseas sales totaled ¥135.4 billion, which represented a large percentage—40.0%—of total consolidated sales. Clearly, our international business operations are increasing in importance.

List of Products and Group Companies by Segment



Automobile airbag inflators, emergency-escape systems for aircraft crew and gunpowder Principal Group Companies

- Domestic: Daicel Corporation / Daicel Safety Systems Inc. / Japan Shotshell Ltd.
- Overseas: Daicel Safety Systems America, LLC / Daicel Safety Systems (Thailand) Co., Ltd., Daicel Safety Systems Europe Sp. z o.o. / Daicel Safety Systems (Jiangsu) Co., Ltd.

Principal Products

- Membrane separation modules for water treatment, transportation & storage services Principal Group Companies
- Domestic: Daicel Corporation / Daicen Membrane-Systems Ltd. / Daicel Aboshi Sangyo Co., Ltd. / Daicel Ohtake Sangyo Co., Ltd. / Daicel Arai Chemical, Ltd. / Daicel Logistics Service Co., Ltd. Overseas: Daicel (China) Investment Co., Ltd.



Principal International Affiliates of the Daicel Group

Germany

Daicel (Europa) GmbH

Principal Domestic Locations



Kentucky, U.S.A.

Daicel Safety Systems America, LLC Manufacture and sales of automobile airbag inflators Topas Advanced Polymers, Inc. Sales of cyclic olefin copolymer

Pennsylvania, U.S.A.

B Chiral Technologies, Inc. Sales of chiral columns and technical services for chiral businesses

New Jersey, U.S.A.

- Daicel (U.S.A.), Inc.
- Purchase and sales of products in the U.S. market

Shanghai Daicel Polymers, Ltd. Manufacture and sales of automobile air bag inflators Manufacture and sales of flame-resistant ABS, ABS alloys, etc. Daicel Trading (Shanghai) Ltd. Purchase and sales of products in the Chinese market Polyplastics Trading (Shanghai) Ltd. Sales of engineering plastics Polyplastics (Shanghai) Ltd. Sales of engineering plastics Sales of flame-resistant ABS, ABS alloys and other products Daicel Chiral Technologies (China) Co., Ltd. Sales of chiral columns and technical services for chiral businesses Shanghai Da-shen Cellulose Plastics Co., Ltd. Production and sales of celluloid and acetate plastic sheet Jiangsu Province, China Daicel Safety Systems (Jiangsu) Co., Ltd. Manufacture and sales of automobile airbag inflators PTM Engineering Plastics (Nantong) Co., Ltd. Manufacture and sales of engineering plastics Shaanxi Province, China

^(b) Xi'an Huida Chemical Industries Co., Ltd. Manufacture and sales of acetate tow for cigarette filters

Osaka Head Office: Mainichi Intecio, 4-5, Umeda 3-chome, Kita-ku, Osaka 530-0001 **2** Tokyo Head Office: JR Shinagawa East Bldg., 2-18-1, Konan, Minato-ku, Tokyo 108-8230 8 Himeji Technology Head Office: 1239, Shinzaike, Aboshi-ku, Himeji-shi, Hyogo 671-1281 Himeji Production Sector / Aboshi Plant: 1239, Shinzaike, Aboshi-ku, Himeji-shi, Hyogo 671-1281 Principal products: Acetic acid, cellulose acetate, acetate tow, CMC, HEC Himeji Production Sector / Hirohata Plant: 12, Fuji-cho, Hirohata-ku, Himeji-shi, Hyogo 671-1123 Principal products: PS sheet, SAN resins Harima Plant: 805, Umaba, Ibogawa-cho, Tatsuno-shi, Hyogo 671-1681 Principal products: Automobile airbag inflators, pilot emergency-escape systems, rocket propellants, gunpowder Central Research Center: 1239, Shinzaike, Aboshi-ku, Himeji-shi, Hyogo 671-1283 🕘 Nagoya Sales Office: Meiffice-Meieki Bldg., 26-25, Meieki 4-chome, Nakamura-ku, Nagoya-shi, Aichi 450-0002 **5** Kanzaki Plant: 12-1, Kanzaki-cho, Amagasaki-shi, Hyogo 661-0964 Principal products: Packaging films, adhesive films High Performance Film Development Center 6 Arai Plant: 1-1, Shinko-cho, Myoko-shi, Niigata 944-8550 Principal products: Ketene derivatives, active ingredients and intermediates for pharmaceuticals and agrochemicals, chiral columns, synthetic resin emulsions Green Product Development Center Ohtake Plant: 1-4, Higashisakae 2-chome, Otake-shi, Hiroshima 739-0695 Principal products: Ethyl acetate, 1,3-butylene glycol, butyl acetate, caprolactone, acetate tow, cellulose acetate

- 8 H.R. Training Center: 14-1, Kouto 3-chome, Kamigori-cho, Akou-gun, Hyogo 678-1205
- 9 Polyplastics Co., Ltd. / Fuji Plant: 973, Miyajima, Fuji-shi, Shizuoka 416-8533

Principal products: POM, PBT, LCP

Chronology of the Daicel Group

The Daicel Group has its roots in Dainippon Celluloid Co., Ltd., which was established in 1919 through the merger of eight celluloid producers. Today, the Group specializes in the manufacture and sales of a wide variety of chemical products.

Since our earliest days, we led the industry in the quality and volume of the celluloid we produce, while engaging in research and development on natural, high-polymer resins, which would eventually replace celluloid. In 1929, we succeeded in the development of acetate plastics, and in 1935, we took a bold step to commercialize cellulose acetate. In doing so, we decided to produce acetic acid—a raw material of cellulose acetate—in-house from carbide. This decision led to the handling of acetic acid derivatives products as well, and with this significant step we entered the organic chemicals field.

With the emergence of the petrochemical boom in the 1960s, we began participation in a petrochemical complex project, and in 1964, we established Polyplastics Co., Ltd. through a joint venture and, accordingly, launched an engineering plastics business. Meanwhile, ascertaining the fact that celluloid serves as a raw material for gunpowder, we entered the pyrotechnic devices business that provides gunpowder and other products. This segment eventually

bore fruit with the development of automobile airbag inflators.

With the onset of the first oil crisis, we strove to promote decreased dependence on petroleum-based raw materials through such means as using methanol produced from natural gas in the manufacture of acetic acid. In recent years, with an eye on the establishment of a sustainable chemical industry, we are increasing the use of bioethanol. In line with such environmental efforts, an ethylamine plant and an ethyl acetate plant began commercial production in 2007 and 2009, respectively.

Today, the Daicel Group's four flagship businesses encompass cellulosic derivatives, organic chemicals, plastics and films, and pyrotechnic devices. Through these businesses, the Company has attained high global market shares for such products as triacetyl cellulose (TAC) for use as a raw material of films for liquid crystal displays, chiral columns, polyacetal (POM) and automobile airbag inflators. Through the provision of these and many other products, we are contributing to the development of society.



• Economic growth accelerates in the EU and BRIC nations.

Daicel Engagement

— Total Participation in the Practice of the Daicel Group's Basic Philosophy

Encapsulated in the Group's rallying slogan "The Best Solution for You" is the total commitment by each and every member of the Daicel Group to engage in daily business activities that epitomize the Group's basic philosophy of "contributing to a better quality of life by developing and manufacturing products that society needs and values." This Special Feature introduces a selection of the many ways in which the Group is carrying out its basic philosophy. In specific terms, we showcase (1) Initiatives Aimed at Fostering a Sense of Unity throughout the Daicel Group; (2) excerpts from roundtable discussions between people in charge of the Group's cosmetics-related businesses and female employees as users; and (3) details of Daicel's green product development activities.

Special Feature 1

Initiatives Aimed at Fostering a Sense of Unity throughout the Daicel Group

Special Feature 2

The Daicel Group's Cosmetic Materials Help Support Women's Beauty and Health

Special Feature 3

Taking Up the Challenge of Ensuring Rich Lifestyles through R&D (Developing Green Products)

Aggressive Sharing of Improvement Cases Strengthens the Daicel Group



Initiatives Aimed at Fostering a 改善事例発表会 Sense of Unity throughout the Daicel Group



EL第1回改善事例発表会

~気づき、考え、行動する~

re 1

Initiatives for Electrical Equipment Safety Measures



Toshiya Egara, Masaki Iijima, Masahiro Ono Aboshi Plant, Quality Assurance

Q. What led to this focus on electrical equipment safety measures?

A. Looking back on fiscal 2009, there were three major incidents involving electrical equipment. The results of subsequent hearings uncovered a distinct lack of basic knowledge in the dangers inherent in electricity and an understanding in the equipment handled. Taking the initiative, female staff, who comprise around 40% of the Quality Assurance Department, put together a universal training manual. Rather than directly address

methods on how to repair electrical equipment, this training manual focuses more on enhancing awareness toward changes in equipment handling and performance. From this single initiative, we recognized the need to take personal ownership for resolving issues in the workplace.

Q. What do you mean by a universal training manual?

- A. This particular manual can be used by anyone including families at home. It has also been designed to deepen the readers' knowledge not only of electrical equipment, but electricity in general. The women who put this manual together also undertook first-hand research. Comments and advice from engineers active in the management of the Group's equipment and facilities were included and the information gathered edited into a manual of around 10 pages.
- Q. What is the total number of electric equipment handled? What specific measures have been taken using this manual?
- A. Including equipment that operates for the entire day, Quality Assurance handles around 400 items. Clearly securing safety is of paramount

Special Feature 1

importance. In fiscal 2010, we conducted a comprehensive inspection of all equipment using the training manual as a reference.

- Q. What was the result of your inspections? What subsequent measures have been implemented?
- A. In conducting inspections, all employees took steps to confirm the "actual location, article and condition" of equipment. Individual initiatives were then taken to correct any potential issues using a before-and-after evaluation sheet. Safety promotion members collated successful examples of improvement to establish a set of good practices. Issues of concern, on the other hand, were addressed directly during safety meetings where all appropriate information was presented and shared. Through



these and other means, we are working to raise the level of safety across all departments and divisions.

Improvement Theme 2

Visualization of Packaging Materials to Balance Inventory



Norihiro Nagaoka, Naoki Fujioka, Hideyuki Yanagawa, Goki Mori Ohtake plant, Organic Chemical Products Company, Production Management, Ohtake Supply Management

Q. What led you to pursuing this particular improvement theme?

A. Prior to implementing improvement measures, the management of packaging materials including drums was effectively based on the instincts of experienced employees and a few hand-written notes. This naturally led to a number of issues, which we classified into three broad "unknown" or "unseen" areas. Unable to visualize projected consumption, packaging materials were often insufficient when required. Unable to visualize inventory, storage facilities were often overstocked. Unable to visualize operating processes, other employees were unable to check or follow up on inquiries.

Q. What steps did you take to overcome these three "unknown" or "unseen" issues?

A. We pushed through three concepts to overcome each deficiency. First, we took steps to ensure a thoroughgoing process of visualization. In fully ascertaining plans for use and the level of inventory at hand, we can ascertain the status of packaging materials at all times. Next, we focused on standardizing packaging material management operations. Our goal

was to break free from an over-reliance on veteran employees and to put in place a system under which all employees can channel their energies toward following-up on outstanding issues at hand. Finally, we systemized the processing of data to balance inventory. This enables employees to concentrate on the operating decision-making function.

- Q. What improvements were made to visualize planned use of packaging materials?
- A. We established a mechanism to better grasp the planned use of packaging materials by applying scheduled product replenishment data. We then modified procedures and introduced a list system to enable employees to make quick and easy decisions with respect to the planned use of large volumes of bulk materials.

Q. What results have been achieved?

A. Our efforts have delivered a number of concrete results. By removing the need to adjust delivery lead times, we have significantly improved customer satisfaction. Our initiatives have resulted in lowering inventory by 30% and reducing disposal loss. This has in turn contributed to cutting costs. We are now better positioned to preempt demand and to manage inventory levels in line with peak requirement. Finally, our younger employees can now appropriately handle packaging material management and in overall terms we have lowered the number of working hours.



Improvement Theme 3

Putting in Place a Mechanism to Address Various Testing Requirements



Toshitaka Tada, Kazuhiro Ikeda, Yoshinori Horikawa Arai Plant, Organic Chemical Products Company, Production Management, Quality Assurance

- Q. Please provide us with some background as to why you decided to pursue this improvement theme.
- A. In the Quality Assurance Department, our daily efforts are channeled toward eliminating any delays in shipment and production. We break up into teams by product field in order to address the needs for timely examination and testing as well as quality assurance. We chose to pursue further improvements to ensure that we can better respond to sudden changes in plans and tight schedules.

Q. What kind of initiatives did you undertake?

A. We would like to touch on two team initiatives.Resist (Electronic Materials) Team

The examination and testing process from the time samples are received through to the making of decisions with respect to delivery deadlines is extremely short. We are basically required to report on results the same day. Under the existing system, testing schedules, overall workflows, priorities and workloads were unclear.

To resolve this issue, we put in place a database using the schedules prepared by related departments including sales and marketing, production and quality assurance. In addition, we prepared schedules for each examiner for the following week broken down into blocks of three hours.

Improvement Theme 4

Initiatives Aimed at Enhancing Productivity



Hiroyasu Ishizawa, Takuya Morikawa, Takeshi Tabuchi, Tadashi Kiro Hirohata Plant, Daicel Polymer Ltd., Production, Long-Fiber Reinforced Plastics

This has enabled us to easily grasp each day's volume of work. The information to accrue from these endeavors is shared throughout



the team. In this manner, we have eliminated any unnecessary and wasteful elements present in the examination and testing process.

• GMP Development Team

The development process continues to confront extremely difficult conditions. In addition to complying with good manufacturing practices (GMPs), encompassing statutory and regulatory requirements as they relate to pharmaceutical production and quality management, products must meet control standards and the demands of customer with respect to lead times. This also applies to the wide range of materials used in production. Moreover, the development phase must often accommodate unplanned examination and testing requirements. These examinations and tests require the supervision of qualified examiners posing difficulties when required to increase certified personnel over a short period. To address these issues, we first took steps to improve existing test schedules. Our goals were to better visualize testing progress thereby facilitating awareness and understanding. Next, and at the administrative level, we put in place a system of regular meetings to provide a forum in which team members could better share information. We also set up a common server to enable the immediate update of any changes in schedules and to better monitor progress. As a result, we have successfully reinforced our system of smooth cooperation allowing us to better accommodate unscheduled requests for examination and testing.

Q. What initiatives do you plan to push forward in the future?

A. Looking ahead, we believe that the development of functional products with shorter lives will become commonplace. We will therefore be increasingly required to keep up with continuously evolving technological trends and to respond to change in a more flexible and speedy manner. In the future, we will accordingly place considerable weight on building a system in which department members can work closely together while honing their individual skills backed by a robust support network.

Q. What led you to pursue improvement initiatives?

A. We anticipate sales of long-fiber reinforced plastics will increase on the back of increasingly stringent automobile environmental regulations. This will in turn necessitate an increase in production capacity.

Q. What is required to enhance production capacity?

A. Drawing from an assessment of existing production capacity, we came to





the conclusion that improvements in operations would yield a 15% increase in productivity. Our efforts then began with everyone in production working toward the common goal of enhancing production capacity and to clarify contentious issues. This led us to uncover a list of personnel and equipment issues totaling 318 items. In conducting a full review of existing improvement methods, we also came to realize that many existing techniques were inappropriate or incorrect. Focusing on the set up stage of production, the principal cause for reduced productivity, we successfully shortened process changeover times. As a result, we were able to surpass productivity targets.

- Q. What measures are required to maintain high levels of productivity?
- A. Despite achieving higher productivity, we were unable to consistently maintain the same levels of performance. The main reasons were the lack of management from an administrative perspective and the passive stance adopted by operators. To resolve these issues, we took steps to further improve set up and changeover operations. As a part of efforts to

prevent any drop in performance after securing higher levels of productivity, we strengthened communication channels, promoted the standardization of operations and introduced an indicator to monitor daily production management. In addition, we worked to visualize the time taken in daily set up and changeover as well as problem resolution and set up a board to record details of all actions taken to achieve established targets. This sharing of information had the added positive effect of stimulating a competitive spirit and friendly competition among team members. Operators are increasingly adopting an active as opposed to a passive stance toward their duties.

- Q. What improvement measures do you plan to implement in the future?
- A. We have successfully established a spirit of cooperation and a culture in which individual take ownership of efforts to improve operations. Looking ahead, we will vigorously push forward efforts aimed at maintaining this proactive stance toward improvements in the workplace and to achieve the ideal of trouble-free stable production.

Addressing Issues with respect to Storage Space for Cellophane Base Paper Theme 5



Katsumi Hanaki, Tetsuya Hirose, Takashi Okuno, Junichiro Hayashi Kanzaki Plant, Daicel Value Coating Ltd., Production Group, Coating

- Q. Please provide us with some background as to why you decided to pursue this improvement theme.
- A. With the drop in past production volumes, a substantial amount of space used to store cellophane base paper became available. This was then used as storage space for each department. With the recent recovery in production volumes, issues arose with respect to the lack of space available for cellophane base paper triggering an increase in potential errors and incidents. To help resolve these problems, we implemented 3S* activities across existing storage space.

Q. What does the implementation of 3S activities entail?

A. The storage space in question covers a wide area. Conditions were such that no one knew with certainty what was stored, by whom and where.

Under these circumstances, we were at a loss with exactly where to begin our 3S activities. We then decided to begin our efforts at two small designated areas and to use this as a model. In just a short period, we successfully transformed each area into extremely easy-to-use storage space. This then gave us the platform on which to extend 3S activities across the entire area. Our starting point was to first identify an ideal storage space concept. The next step was to identify and assess what was being stored by which department in what volumes and where. With this information, we redesigned layouts and devised schedules before commencing 3S activities.

*3S activities include seiri (tidying), seiton (putting everything in order) and seisou (cleaning).

Q. Did the implementation of 3S activities proceed smoothly?

A. Unfortunately no. In pushing forward with 3S activities, we were still left with a deficiency in storage space. The room required to operate forklifts was greater than anticipated, for example, and we confronted many obstacles along the way. Despite many discouraging moments, we were able to complete our task.



Q. What were the results?

A. Every effort was made to promote measures that would prevent accidents and incidents. With time, all participating employees gained a strong sense that the storage facility had evolved with a premium on safety. The time taken to locate raw materials and semi-finished products also reduced significantly, which in turn shortened operating hours by a substantial margin. Moreover, with less time required for stock picking and increased precision, we are now able to quickly identify and address the issue of excess inventory. In overall terms, our endeavors have led to major improvements in operating efficiency.

Theme 6

Initiatives Designed to Promote DSS Independence



Fumie Miyahara, Takashi Matsunaga, Akihiko Fukuoka Harima Plant, Daicel Safety Systems Inc., Human Resource Development Center

Q. What led you to pursue improvement initiatives?

A. The MSD business maintains a total of five manufacturing bases, four of which are located overseas. To date, DSS's manufacturing facility in Japan has served as a mother plant providing direction and instruction to other plants in its network. Our overseas bases, on the other hand, have continued to gather momentum and are working at a vigorous pace toward independence. Conditions developed to the point where we experienced a profound sense of crisis regarding operations in Japan. Fearful that our domestic business would be left behind, we took steps to ensure our survival for the future encompassing improvement initiatives with respect to our support operations.

Q. What stance did you adopt when putting in place plans to resolve critical issues?

A. Each and every employee was asked to carefully consider what was required to curtail costs from a zero-based perspective. Drawing on three fundamental business concepts we first recognized the importance of a zero-based perspective as the means to generate fresh ideas. Second, we promoted cooperation and collaboration with other departments and business partners as a platform to secure large-scale results. Third, we adopted various improvement measures based on the Toyota Production



Q. What lessons have you learned from these improvements?

A. First and foremost, we have learned that no problem is too difficult. Whatever the challenge, we now realize that by taking steps to identify all issues and establish set goals, promoting thoroughgoing communication among all participants and addressing each task in a determined manner there is no issue that cannot be overcome. At the same time, we are also aware that a single improvement can have a variety of effects.





System (TPS) across the entire organization including support operations. Each of the aforementioned three factors was then incorporated into the preparation of an action plan.

Q. What specific measures were implemented to promote cost reductions based on a zero-based perspective?

A. At the time of the Lehman Brothers shock, we adopted a zero-based perspective to cut back consumable expenses. In line with the steady recovery in production volumes over the ensuing period, we have witnessed a commensurate increase in expenses for consumables. Returning to the basics, we again called on all related departments within the company to reflect on this zero-based perspective. We also introduced a TPS-type just-in-time inventory management system for office supplies as a part of improvement initiatives designed to better visualize performance against budgets. As a result, we were successful in substantially reducing consumables while putting in place a mechanism that would prevent future deterioration.

Q. What difficulties did you encounter along the way?

A. At first, we would often receive comments that a particular office item was essential. The difficulty was in convincing employees to cooperate with our efforts. We were able to bring about a change in employee mindsets by better visualizing performance against budgets. We reached a point where we were able to set higher targets in fiscal 2011.

Q. What lessons have you learned from these improvement initiatives?

A. The scope of any one department's activities is limited. Promoting cooperation and collaboration with other departments, bases and external operators is essential in broadening the scope of activities and building relationships of trust.

The Daicel Group's Cosmetic Materials Help Support Women's Beauty and Health

Daicel Expands into Healthcare, a Promising New Business Segment

Introduction

20 DAICEL CSR Report 2012

The Daicel Group recently sponsored a round table to discuss cosmetic ingredients, where Group company marketing and development professionals spoke with female employees, representing potential product end users. The meeting is one step toward expansion into the healthcare field, a new business target as defined in the Group's 3D-I medium-term business plan. Over the course of two-and-a-half hours, marketers presented new products, letting participants try product samples and learn more about the underlying technologies. Attendees were also entertained with rare behind-the-scenes stories about the cosmetics industry, as well as lively discussions of their own stories and experiences. The reception following the round table offered more opportunities for frank discussions and sharing of opinions in a more informal atmosphere. This article covers a portion of the round table, discussing best solutions for the Daicel Group's cosmetics business as the Group focuses on supporting women's beauty and health.



Participating in the Cosmetic Ingredients & Technology Exhibition

(Maeda) Daicel Corporation, Daicel FineChem Ltd., Daicel-Evonik Ltd., and Daicel Pack Systems Ltd. produced a joint exhibit at the Fifth Cosmetic Ingredients & Technology Exhibition: CITE Japan, Held in May 2011, the Daicel Group's unified commitment to expanding into the cosmetics market. Daicel already sells 1,3-butylene glycol (used in skin lotion and cream, as a moisturizing agent and antibacterial agent) and thioglycolic acid (used in permanent waving solutions) to companies in the cosmetics and healthcare fields. Now, the Company has added CELMOLLIS to its lineup as a new product. CELMOLLIS is a polyglycerol interfacial activator that is gentle on the skin and hair, offering mildness with no protein denaturation.

(Chihara) Daicel-Evonik has developed the Daiamid MSP Powder, a nylon powder, and is currently selling the product on the market. This product is used widely in foundations and eye shadows, which offer a pleasant sensation during use due to the combination of this globe-shaped powder. This product comes in a plant-derived grade made from castor oil and a grade encapsulating titanium oxide and zinc oxide in high densities to meet the diverse needs of the customer. The product grade encapsulating titanium oxide and zinc oxide offers a higher SPF* value which is effective for use in sunscreens and other applications.

* SPF: sun protection factor

(Imoto) Based on a long and successful history in food packaging, Daicel Pack Systems has proposed several different packaging solutions to the cosmetics industry, including 1) CELPEACH, a package offering high-quality texture and soft colors in a luxurious form that projects a new style of cushioning, 2) ECOFANTASY, a package using plant-derived materials, and 3) Grand Aqua, an external package featuring a highly transparent finish. The special

The Daicel Group exhibited at the Fifth Cosmetic Ingredients & Technology Exhibition: CITE Japan held in May 2011.

coating on CELPEACH prevents the product from rotating during shipping, ensuring that the product label always faces up.

(Ohno) Daicel FineChem deals with carboxymethyl cellulose and hydroxyethyl cellulose, a water-soluble polymer. When immersed in water, these highly soluble substances function to improve viscosity and retain moisture so they are used in toothpaste, hair care, and skin care products, as well as in cooling sheets and other products. The company also works with CELISH, which is a fiber that is refined using cellulose as a raw material in a special manufacturing method. CELISH exhibits increased water-retention properties-in other words the moisturizing effect-by tearing fibers into tens of thousands of strands and refining to a thickness of 1-0.01µm to expand the surface area of the fibers. This is all accomplished without any chemical processing whatsoever. The company is developing a number of applications of both CELISH and Nano CELISH (refined fibers of a radius of less than 100nm) for the cosmetics and toiletries markets.

(Maeda) The Daicel Group exhibited the best solutions, solutions only Daicel can provide, representing Safe Materials, High-Function Processing, and Reliable Packaging—three key corporate phrases. I think we were able to present a united vision of our Group as a whole. The strength of the Daicel Group is being able to propose solutions to customers that cover cosmetics both inside and out. Our materials on the inside, our packaging on the outside.

Katsuyuki Maeda Daicel Corporation Organic Chemical Products Company Performance Materials Marketing & Development



Kazuhiko Imoto Daicel Pack Systems Ltd. Marketing Dept.



Katsuaki Ohno Daicel FineChem Ltd. WSP Marketing Dept. & New Business Development Dept.





Daicel-Evonik Ltd. Marketing Dept.



Mitsuru Nakaya Daicel-Evonik Ltd. New Business Development Dept.



Naoko Nishi Daicel-Evonik Itd Administration & PR Controlling & Business Support Dept.



Aya Hashimoto Daicel Corporation R&D Management Planning

Daicel-Evonik Plant-Derived Powders

(Maeda) Today, we were able to meet with a number of women who offered their frank opinions. Of course, we want to reflect this input in our development and sales going forward, but Daicel-Evonik has already incorporated the opinions of women and the market in the development of their products, have they not?

(Nishi) Yes. Everyone had the chance today to try several sample products, but we saw an enormous gap between ease of application for foundation containing MSP powder and foundation that didn't. Daicel-Evonik's plant-derived powders, as Chiharasan stated, have been improved to provide a luxurious texture, resulting in a powder that women prefer.

(Nakaya) Yes, the spherical-shaped of the powder particles is significant. Traditional manufacturing methods leave the powder in a lumpy state like salt. Our special manufacturing method results in a fineness and an almost spherical shape.

(Chihara) Another point is that this sphericalshaped powder can contain zinc oxide and titanium oxide, which prevents UVA*1 and UVB*2. Other methods can only include about 30%, but we can achieve a high density of 50% or more.

(Onishi) That is some amazing technology. So, that's the reason why the texture is so nice. It also cuts a lot of UV rays, which is why I believe this powder is in such high demand by women, as Nishi-san said. I have very sensitive skin, so when I choose cosmetics, I look primarily for low-odor, natural products.

cancer and/or mottling

(Maeda) Ladies like Onishi-san who are looking for low-odor products generally use products that contain our 1,3-butylene glycol in my experience. I do have to caution people that just because something is natural, it's not necessarily good. For example, you can get a rash from smooth lacquer and rough yams can be bad for the skin. Both artificial and natural products have merits and demerits. On top of that, women all have different types of skin. In the end, I think it's best to use what works for the individual.

(Nagasaka) Yes. For example, I've found many products recommended by friends that don't work with my skin. I have dry skin, so I've been trying a lot of different cosmetics in hopes of getting moisturized skin.

(Maeda) Nagasaka-san is looking primarily for moisturizers. As we just covered in our presentation, Daicel makes a shampoo base that uses CELMOLLIS, which is an activator that prevents protein degeneration from UV rays. We are conducting an analysis of skin roughness in that process.

(Nagamine) I have a tendency to fall for ads that say a product moisturizes or that some kind of an acid is good for you. But I can never tell whether it actually works after trying it. I have a lot of half-used cosmetics in my closet.

(Arai) I have pretty strong skin, so my concern is more about nutrition and supplements I put into my body, rather than cosmetics. I have been reading a lot about soy isoflavones lately.

*1 UVA are UV rays (A rays) having long wavelength that pass easily through the ozone layer, reaching the earth at a rate more than 20 times that of UVB. While UVA does not lead to relatively rapid changes as with the shorter wavelength UVB, UVA will reach the lower layers of the dermis over time, degenerating proteins. This has a major impact on the development of mottling and wrinkles. *2 UVB are UV rays (B rays) having a short wavelength. Compared to UVA, UVB makes up only 10% of the total UV ray volume that reaches earth. However, UVB energy is strong, and can cause cellular damage on the surface of the skin, potentially leading to skin

Equol: A Promising Development on the Anti-Aging Front

(Hashimoto) I think women are very interested to know whether it's better to get active ingredients in cosmetics or from supplements. Daicel developed and commercialized equol, which is expected to offer both skin beauty and antiaging benefits.

(Arai) What is the relationship between Equol and isoflavones?

(Hashimoto) Isoflavones, as you know, are components found in soy products. A German study reported that Japanese women eat a lot of soy products compared to other populations, which is why Japanese women experience less severe menopause symptoms. Isoflavones contain a particularly active component called daidzein, which, if it can be converted into equol by your intestinal bacteria, improves skin tone and mottling. It's also expected to be effective in hair growth.

(Maeda) Apparently, nearly half of all Japanese women can't convert daidzein into equol.

(Hashimoto) Unfortunately,

that's the case. People who have intestinal bacteria capable of converted equol can get it from directly into their bodies.

TOPICS

Confirming Technology to Mass-Produce Equol, a Promising Anti-Aging Solution

Daidzein is a type of isoflavone found in soybeans, tofu, natto, soy milk, and other soy products. Equol, said to be the true source of benefits in isoflavones, is produced when this daidzein is reduced through human intestinal bacteria. We believe this substance has anti-aging benefits, including skin whitening, anti-aging, anti-cancer, preventing bone mass loss in menopausal women, and preventing enlarged prostate. However, only a certain percentage of human beings have equol-producing bacteria in their gut-reportedly only about 50% of Japanese women and about 30% of women in the West. That percentage has been in decline among the younger generation in Japan for the last several years.

Ingesting equol directly, rather than through soy, would lead to all people being able to take advantage of the beneficial effects. Despite a wide body of research into the function and effects of equol by numerous institutions around the world, dealing with the type of intestinal bacteria that creates equol has been not only extremely difficult, but also unproductive. As such, there is still no commercial





soy products, but people without such intestinal bacteria can't get the same benefits. Daicel is developing ways for these people to take equol

> production of equol. Daicel has spent the last few years researching equol production via microorganisms, recently succeeding in the development of a new biocatalyst-allowing us to confirm the viability of mass equol production technologies.

Based on this mass-production technology, we plan to develop

products across a wide range of applications, using equol as a functional component that can contribute to anti-aging.



Daidzein



Equol

Special Feature 2



Yuki Arai Daicel Corporation Corporate Planning



Namino Nagasaka Daicel Corporation Corporate Support Center Legal Group



Yuki Nagamine Daicel Logistics Service Co., Ltd. Planning & Sales Dept.



Yuri Onishi Daicel Corporatio Corporate Support Center IT Group

Daicel Pack Systems Cosmetics Packaging

(Maeda) Now that the Daicel Group has an attractive lineup of women's cosmetics, the future is looking bright for us. What do you think about cosmetics packaging?

(Nagamine) I like cute packaging, or pink-colored packaging.

(Hashimoto) If the functions of two different products are the same, then I'd choose the one with cuter packaging. It makes me happy.

(Imoto) I see. Our CELPEACH emphasizes guality to the touch to portray a luxuriousness for cosmetics and other products. Our ECOFANTASY packaging uses plant-derived materials, reducing our CO₂ footprint as a container and packaging product manufacturer. It's resistant to heat, difficult to crack, and offers other features needed by cosmetics companies. We'll definitely think about incorporating cuteness into our packaging in the future!







Toward Best Solutions, Reflecting the Ideas of the End User (Nagasaka) I think this was a very valuable oppor-

tunity to take a closer look at our products. I'm sure other female employees would be particularly interested in discussing issues regarding cosmetics.

(Hashimoto) When you're looking for a point of view from the end user about something like cosmetics, a meeting like we had here, with so many different tastes and ideas, can result in unexpected ideas. This can be very meaningful in the process of development and production, while at the same time getting employees feeling more involved in the business.

(Maeda) I think the most important thing we learned is that what the consumer really wants is function, effectiveness, and cute packaging. I hope we can continue to uncover best solutions by requ-

> larly hosting discussions and technology assessments, continuing a cycle from technology to product, to assessment and new proposals.

Taking Up the Challenge of **Ensuring Affluent Lifestyles through R&D** (Developing Green Products)



The New Energy and Industrial Technology Development Organization (NEDO) Project

The Daicel Group is one of the world's leading manufacturers of the 1,3-butanediol (also known as "1,3-butylene glycol," abbreviated as "1,3-BG") that is used as a humectant in cosmetics, shampoos, and the like. The group also uses 1,4-butanediol for producing the polybutylene terephthalate (PBT) resin as the raw material for automobile interior and exterior components.

Butanediol is currently manufactured from petroleum-based raw materials, but the Group has recently developed in collaboration with Tohoku University a catalyst for producing butanediol from the erythritol that is manufactured as a raw material from biomass that would not cause conflicts with other food-related problems. This catalyst is also a high-performing catalyst that enables the production of, in addition to butanediol, the butanol that is used in paint solvents and the like.

This conversion from petroleum resources to biomass resources



would greatly contribute to the curtailment of fossil resource consumption and reductions of greenhouse gas (CO₂). Daicel is struggling to improve the catalytic performance for butanediol production so that it may be mass-produced within 5 years.

This is a theme that has been adopted by the NEDO (New Energy and Industrial Technology Development Organization) Project.



Highlights of FY 2011

Utilizing Biotechnology to Contribute to the Stabilization of Gallic Acid Supply

Gallic acid is a naturally-derived substance harvested from the gall (sumac gallnut) created by the laying of eggs by Schlechtendalia chinensis (an insect of the family Aphidoidea) onto the Japanese sumac, a deciduous tree that grows to heights of 5-6 meters and is indigenous throughout Southeast Asia and in Taiwan, China, the Korean Peninsula, and Japan. It is widely utilized as a raw material in electronic materials, pharmaceuticals, agricultural chemicals, food additives, resins, and more.

At present, amid this expansion of the range of its applications as well as economic growth in emerging countries, world demand for gallic acid has grown to several thousand tons. However, because it is a natural resource, it is prone to supply instability and substantial



be securely procured.

teristically strong reducing power.

Plant (Japanese sumac) insect gall (sumac gallnut) Source: Shikosha Publishing Co., Ltd. "Japan Colors Dictionary"

Biomass Chemicals: The pursuit of environmentally friendly products — Conversion from fossil materials to renewable biomass materials



Akinobu Matsuvama

Daicel Corporation, R&D Management

Green Product Development Center

With the goal of contributing to the development of a sustainable society, the Daicel Group, with consideration given to global environmental issues, is making progress toward a conversion from fossil raw materials to biomass raw materials to facilitate the production of products with a lessened environmental impact. The use of bioethanol made from sugarcane and palm oil-derived glycerin as biomass raw materials is already underway, and in the future the Group intends to develop inedible ligneous biomass as raw materials that will not conflict with food related uses and also environmentally friendly high-efficiency production technology.



Arai Plant Green Project Development Center (Myoko-shi, Niigata Prefecture)

TOPICS

General Manage

First in the World! The Establishment of a Production Method for 1,3-BG Using Biomass Raw Materials and Bioprocessing

Concurrent with the development of the chemical process for producing 1,3-BG from erythritol introduced on the previous page, Daicel is also facing the challenge of developing bioprocessing that can produce 1,3-BG from biomass resource-derived glucose.

Recently, Daicel succeeded in both constructing microorganisms which could biosynthesize 1,3-BG from glucose and developing bioprocessing that makes use of these microorganisms. Through this, Daicel has shown the world the possibility of a conversion to bioprocessing in the manufacture of 1,3-BG and has also taken the first step toward industrialized production.

In order to industrialize this production method that is expected to diminish environmental impact, Daicel will continue to make even further progress in terms of research and development.

price fluctuations; it is also susceptible to new problems in terms of

international biodiversity conservation and biological resource man-

agement. In order to solve these problems, Daicel has begun consid-

ering a conversion to industrial production of gallic acid using

biotechnology from terephthalic acid, an industrial material that can

This conversion to mass production will contribute to society

through the realization of a stable gallic acid supply and the conser-

vation of biodiversity as well as the development of new applications

(such as rust inhibiting agents) that make use of gallic acid's charac-

2011 Apr	The 10th Daicel Chemical Group Responsible Care Promotion A On April 7, the 10th Daicel Chemical Group Responsible Care Pro- teleconferencing system. The "Responsible Care Initiative" is one of the two pillars of Da ness of it. Prior to this year's Assembly, President Fudaba made Safety Campaign Century Project," and all participants prayed Groupwide Earthquake Countermeasure Meeting was held; there nation as countermeasures for the urgent challenges posed by the
Sep (Market Purchase of Treasury Stock In order to facilitate improved redistribution of profits to shareho changes to the management environment, Daicel acquired 4 millio Acquisitions of treasury stock will continue to be flexibly imple plement dividends.
Oct (Company Name Changed and New Group Symbol Established of In order to show its intent to continue to develop, transcending the the company changed its name from Daicel Chemical Industries, Lt lished with the aim of the Group becoming more unified than the p
	Letter of Intent Formed with Mitsubishi Rayon Co., Ltd. to Facilit In order to respond to growing world demand for tobacco and understanding to facilitate the incorporation of a joint venture cor Mitsubishi Rayon Co. Ltd, will spinoff manufacturing operations invest in 35% of the shares of this new company. In the "3D-1" medium-term plan, Daicel also intends to work construct a production system that is highly competitive internation
	Decision Made to Expand the Acetate Tow Manufacturing Capa In addition to the incorporation of the aforementioned joint ventu- tate tow for use in cigarette filters at the Ohtake Plant, and to Sector/Aboshi Plant. Commercial operations are scheduled to con approximately 10% relative to the current capacity is expected.
Dec (Company for Manufacturing and Selling Automobile Airbag Infl As part of the promotion of acceleration of global operations in th was established in the city of Yeongcheon, South Korea, as a will sales base in the world. Manufacturing and sales are expected to commence for the new
	Flood Damage Relief Provided to Thailand Six companies of Daicel Group (Daicel Corporation, Polyplastics Ltd., Daicel Safety Technologies (Thailand) Co., Ltd., and Daicen fund to Thailand, which had been devastated by flooding.
2012 Jan	Decision to Merge Daicel Novafoam Ltd. and Tohoku Polymer C Daicel Novafoam Ltd., a Daicel Group company that manufacture subsidiary of Mitsui Chemicals, Inc., decided to merge on April 1 facilitate nationwide development by bolstering the foundation purchasing and sales areas of both companies, and will foster a s nological development capabilities of Daicel Group and Mitsui Che
Mar (Decision Made to Purchase U.S. Initiator Manufacturing and Sal Via Group company Daicel USA, Inc., Daicel formed a share transf after referred to as "SDI"), a U.S. initiator manufacturing and sale. Initiators are the ignition components of automobile airbag in for use as inflator components, but with this stock acquisition, in initiators on a global scale. Daicel will also be able to take advanta

ssembly was Held

pmotion Assembly was held by linking the Tokyo and Osaka headquarters via a

aicel Group's CSR initiatives, and this Assembly is held every year to raise awarea "Safety First" declaration as a project in commemoration of the "Industrial silently for one hundred years of safety. Also, following the Assembly, the the groundwork was laid for Groupwide information sharing and rapid coordie Great East Japan Earthquake.

olders as well as the implementation of a flexible capital policy in response to on shares of treasury stock by means of a market purchase.

mented in the future as a policy of redistributing stock to shareholders to sup-

on October 1

e framework of the chemical-based chemical industry,



d. to Daicel Corporation. Concomitant with this, a new group symbol was estabpast in its efforts to grow by leaps and bounds into a truly global company.

ate the Incorporation of a Joint Venture Company for Acetate Tow Operations acetate tow, Daicel and Mitsubishi Rayon Co., Ltd. formed a memorandum of npany that will manufacture acetate tow for use with cigarette filters.

s for that product development at its Toyama Production Center, and Daicel will

on bolstering the acetate tow operation that is one of its core businesses, and onally by means of the initiatives that partially comprise it.

city of the Ohtake Plant and Aboshi Plant

are company, Daicel has resolved to expand the facilities for manufacturing acebolster the manufacturing capacity of that product at the Himeji Production nmence for both plants in July 2013; an improvement in production capacity of

lator is Established in South Korea

he automobile airbag inflator business, Daicel Safety Systems Korea, Inc. (DSSK) holly-owned subsidiary of Daicel that will become its sixth manufacturing and

w company at the end of fiscal 2013.

Co. Ltd., Polyplastics Marketing (T) Ltd., Daicel Safety Systems (Thailand) Co., Membrane-Systems Ltd.) provided a total of ¥10 million in support as a relief

Co., Ltd.

es and sells low-density plastic foam products, and Tohoku Polymer Co., Ltd., a 1, 2012 and launch a new company, DM Novafoam Ltd. This merger will both of low-density plastic foam product operations and integrating the existing synergistic effect by utilizing the purchase and sales channels and diverse techemicals, Inc.

les Company

fer agreement in order to acquire all issued shares of Special Devices, Inc. (heres company.

Initiators are the ignition components of automobile airbag inflators. Daicel had already been manufacturing initiators in Japan and Thailand for use as inflator components, but with this stock acquisition, initiator manufacturing capacity will be expanded, and Daicel will begin selling initiators on a global scale. Daicel will also be able to take advantage of the effects of its synergy with SDI, such as improved production efficiency, promotion of new product development, and expansion of global sales channels.

Products and Technologies that Contribute to

Every company of Daicel Group develops products and technologies that contribute to a healthier environment, and provides customers with environmental friendly products and safety.

Daicel Corporation

First in the World! New Chiral Column reusable for Flash Chromatography

Daicel has launched the first in the world chiral MPLC (medium pressure liquid chromatography) column, CHIRALFLASH[®], which is reusable many times. MPLC is a simple purification method and is widely used throughout the world. Generally, MPLC columns for this purpose are disposable.

Until now, preparative separation of enantiomers^{*1} has been conducted mainly in HPLC (high-performance liquid chromatography) or SFC (supercritical fluid chromatography) modes. The CHIRALFLASH columns are now designed to be used for preparative enantiomer separations and are environmentally friendly products that can be reused^{*2} more than 100 times.



*1 Refers to the property of compounds not being superimposable on their mirror image, in the manner of one's left and right hands. Often observed among the active and inactive ingredients of pharmaceuticals, agrochemicals, food items, perfumes, etc.

*2 Can fluctuate depending on purity of testing materials.

Daicel Polymer Ltd.

Woody Biomass based Plastic Material

In collaboration with Fuji Xerox Co., Ltd., Daicel Polymer Ltd. has developed a woody biomass based plastic material.

This plastic derives from cellulose, a major component of wood. Cellulose is non-edible renewable organic material, and will not compete with the food related problems. Plant-derived components comprise approximately 40% of the mass of this plastic.

Also, this plastic has obtained a classification of UL 94^{*1} V-2, indicating advanced flame resistance, and has also achieved moldability equivalent to that of ABS resin, a petroleum-based material, and weld strength*2 superior to that of ABS resin. The components of Fuji Xerox Co., Ltd. that make use of this plastic have obtained the biomass plastic (BP) mark of the Japan BioPlastics Association, and are currently used in the interiors of office appliances.



UL standards are established by the Underwriters Laboratories (a US product safety testing and certification organization). UL 94 is a plastic materials' flame resistance standard Weld strength is a property for injection molded

parts in the area or plane where two or more streams of material fuse together as the mold cavity fills with material.

Daicel Pack Systems, Ltd.

Celcompact

Celcompact[™] is an eco-friendly, lightweight, and volume-reducible plastic container. Although guite thin, this innovative plastic container does not break easily, and unlike others, it can be easily twisted and crushed by hand. In addition, the crushed container retains its crushed shape. As a result, this product helps resolve the frequent complaint by consumers



that plastic containers are too bulky to dispose of and require a great deal of storage space. In addition, this plastic container contributes to the efficient collection of waste plastic containers.

Daicel Pack Systems is participating in the "Container & Package Diet" initiative promoted by the prefectures of Saitama, Chiba, Tokyo, and Kanagawa, and the cities of Yokohama, Kawasaki, Chiba, Saitama and Sagamihara.



Logo of the "Container & Package Diet" initiative being promoted by nine cities and prefectures

For a detailed description of recent lightweight container manufacturing operations, please refer to the following website:



URL: http://www.diet-youki.jp/activity_report_list/ activity_report_detail.php?uid=25

ECOFANTASY

ECOFANTASY[™] is a biomass-based plastic container. In taking into consideration environmental concerns, this product reduces the amount of CO2 generated during its production process by around 30% to 50% compared with existing products.

Boasting superior heat, impact and oil resistance, ECOFANTASY[™] can be used as a container for vegetables that require heating using a microwave oven. In this regard, ECOFANTASY[™] enables a wider range of applications not possible with conventional biomass-based plastics.

Details of this product are presented on Daicel Pack Systems homepage:





* The amount of CO₂ generation when producing a 1g container

a Healthier Environment and People's Safety

Daicen Membrane-Systems Ltd.

Wastewater Treatment Filtration Systems

The membrane wastewater treatment filtration systems can reliably remove dioxin, PCBs, oil and other hazardous substances in wastewater that in the past were difficult to efficiently remove. The process first treats wastewater with a special coagulant. When the harmful substances coagulate, then the wastewater passes through an ultrafiltration membrane, which filters out the substances. By utilizing an ultrafiltration membrane, this final filtering process can lower the content of hazardous substances in treated wastewater to within legal limits. These filtration systems are steadily growing in usage in recent years as they earn a reputation for trustworthiness.



BIO-CEL[®], MBR Immersion-Type Module

A membrane separation bioreactor (MBR) is a system that separates microorganisms from treated water by immersing a separation membrane directly in a wastewater treatment tank. "BIO-CEL®" yields even higher gualify treated water, because the usage of an ultra filtration membrane enables the removal of coliform bacteria, substances smaller than 0.1 µm and other impurities that conventional separation mem-



branes cannot remove. Due to the extremely compact and lightweight design, it also fits in smaller spaces than conventional membrane modules.

Daicel FineChem Ltd.

CelcreteH[®]. Antiwashout Admixture for Underwater Concrete

When undertaking sea or river work including the construction of ports, embankments, breakwaters and bridges, conventional concrete immersed in water is susceptible to breaking and lacks the necessary strength and performance.

Boasting outstanding water retention and adhesive properties, CelcreteH® is an agent that when added to cement enables high-guality and effective construction. At the same time, CelcreteH® helps to minimize the severity of water pollution in rivers and seas.

Daicel-Evonik Ltd.

Organic Solvent Nanofiltration (OSN) Membrane Enabling Energy-Saving Processes

OSN membranes are nano-scale separation membranes made of polymer with unprecedented durability. Developed through independent research by Evonik Industries of Germany, these membranes offer stable separation and recovery of mixed compounds and catalysts in organic solvents.

Compared to conventional processes like distillation, OSN membranes make great energy savings possible. And since they can separate substances at relatively low temperatures, they are very effective for removing compounds that become unstable in heat.



Implementation and application example

Natural Biopolymer VESTAMID Terra

Daicel-Evonik launched natural biopolymers "VESTAMID® Terra HS" and "VESTAMID® Terra DS." Both are polyamide resins made from caster oil, which is extracted from nonfood caster-oil plants. Realizing the functionality of conventional polymers with biopolymers has been challenging. Biopolymers have the reputation of being somewhat impractical. However, the heat resistance of the two new Daicel-Evonik products, as well as high rigidity and low water absorption properties are on par with existing petrochemical-based polymers. Promoting wider acceptance and use of these advantageous features, we plan to expand the application of these products in various fields.



Human Resource Development

Basic Policies for Personnel Training

Of the Daicel Group's many management resources, people are the most important. From around the globe, the Company welcomes a diversity of individuals, each contributing different backgrounds and ways of thinking, who are inspired by the Daicel Spirit. Daicel Group employees respect each other and seek collaborative work relationships, enabling the Group to maximize its collective strength. Toward becoming a company that proudly delivers the best solutions to the global market, Daicel is working to develop its employees so that they can fully exhibit their capabilities, unfettered by title or position, and adopt flexible approaches to best fulfill their responsibilities.

The Daicel Group Seeks

- Those who value communication with others, respect others and can appreciate new situations and perspectives
- Those who can sustain the passion and focus to fulfill their responsibilities, seeing projects through to completion

Personnel System to Support Personnel Development

At Daicel, human resource development is underpinned by various systems and structures. By consistently adhering to the intent of these systems and consistently following these rules and structures, Daicel is promoting human resource development.

"Management by Objectives" (MBO)

MBO is a management system which enables both personnel and the organization to grow together through efforts aimed at achieving established targets. Through biannual meetings, each individual, under the direction of a superior, sets his or her goals in line with the targets of divisions and the entire Company. Individual employees then work to accomplish their goals. In terms of evaluation, we focus not only on results but also on the processes used. We use dialogue between superiors and subordinates as opportunities to allow people to develop their skills and ability.

System to Hear Employees' Thoughts (Voluntary Reporting System)

The self-evaluation system gives employees an opportunity to express their career-development wishes. Once a year, all employees express their frank thoughts and opinions regarding their current job, future



posting preferences and work locations. Through dialogue, supervisors consider optimal placement and personnel training programs based on the individual's wishes and aptitude, with the aim of helping them make the most of their capabilities.

Educational and Training System to Support Personnel Development

As a means to promote human resource development, Daicel is strengthening group seminars. Various educational and training programs have been created to meet employee needs, which vary depending on job level and line of work, to maximize their effectiveness.

Introductory Training for New Employees (Training for Manufacturing)

We provide all new employees with one year of training for manufacturing operations. Through this training program conducted at the H.R. Training Center, new employees initially learn the basic knowledge required of businesspeople, as well as a fundamental grounding in Company policies and other requirements for Daicel Group members. This is followed by on-the-job training (OJT) at the Operation Training

Center and production sites, where trainees are acclimated to the eight-hour-shift system. Through these activities, our new employees acquire the essential knowledge required to perform their duties in a manufacturing workplace.



Educational program held at the Operation Training Center





Group seminar at the H.R. Training Center

Our Commitment to Technicians

For Daicel, a manufacturing-oriented company, the development of technicians is an important management issue, because they underpin the foundation of the Company's manufacturing operations. Starting with

first-year training for manufacturing, technicians continue to receive education aimed at allowing them to acquire various specialized techniques, modes of action and other knowledge required when they become managers in the future.



On the Job training (OJT) at production sites and the Operation Training Center



Comments from Fiscal 2011 New Employees

The Company's on-site training, encompassing such critical features as shutdown maintenance, provides a first-hand and genuine look into front-line manufacturing. I feel that I have a strong sense of the basics of manufacturing, 3S activities and the importance of teamwork. After completing my training, I was assigned to sales and marketing. In going about my daily duties, I am amazed at the close ties that my work entails with production plants. Looking ahead, I plan to learn as much as I can about the manu-

facturing process so that I can broaden the scope of both my knowledge and abilities.

Chen Shengyue

(received training at Aboshi Plant) Filter Tow Marketing Division, Cellulose Company, Daicel Corporation



On-site training provided me with an insight into the direct links between 3S activities and safe and reliable operations at plants as well as the manufacture of quality products and improvements in costs. After completing my training, I am also acutely aware that 3S activities apply to all facets of work and not just manufacturing. I would like to maintain the principles of 3S activities as I



go about my duties and work to further enhance my abilities. On this basis, I would like to promote continuous improvements in the workplace.

Shizuka Okada

(received training at Ohtake Plant) Speciality Material R&D Center, R&D Planning, Cellulose Company, Daicel Corporation



Training and Educational Facility (H.R. Training Center)

Daicel's H.R. Training Center is located within the Harima Science Garden City (Kamigori-cho, Akou-gun, Hyogo Prefecture), which houses the Spring-8 large-scale photon source, the New SUBARU medium radiation facility, the Hyogo Ion Beam Medical Center and other facilities. The Company opened the H.R. Training Center in 1998 in order to provide a facility in which Daicel employees can study together, communicate and refresh themselves. Since its opening, the H.R. Training

enter has been used by lany Daicel employees or a number of purposes, accluding educational eminars, Companywide rojects and improve-



Human Resource Development from a Global Perspective

In similar fashion to our efforts in Japan, we are placing considerable emphasis on promoting human resource development at our overseas bases. To ensure a greater sense of autonomy and independence at overseas bases, human resource development and training is undertaken in line with specifically designed local curricula. The Daicel Group is actively promoting the development of its local staff at overseas bases supported by training programs in Japan as and when required.

In order to maximize the strengths and capabilities of its groupwide human resources, Daicel recognizes the critical need to share its basic philosophy and long-term vision with overseas personnel. Looking ahead, we will take steps to incorporate within our human resource development plans, measures aimed at increasing awareness and understanding of the Group's basic philosophy and long-term visions by overseas personnel.



Overseas Training in Japan (Training for Manufacturing)

Training at the MSD R&D Center provided me with a complete understanding of the development design process from initial inflator structural design through to performance tuning. Experiencing first-hand the enormous pressure under which development is undertaken, I grew to appreciate the true role and responsibilities of a development engineer and the unwavering determination that is required to overcome each issue and the spirit essential to complete each task. Looking ahead, I hope to contribute to expanding sales in China by speaking directly with clients about their technical needs, clearly identifying requirements and promoting analysis and trial production. At the same time, I would hope to help in some small way to lift the

overall technological capabilities of the workplace.

Ma Shengguan

(received training at Technical Development & Research Center, Safety Systems Division) Technical and Engineering Section, Daicel Safety Systems (Jiangsu) Co., Ltd.

Global Business and Personal Growth

My duties at DSSE entail expanding sales of pyrotechnic devices in Europe and building a robust corporate brand. Working in a global business environment, first and foremost requires the flexibility to adapt to change. The reason I say this is because I see each new obstacle and challenge as an opportunity to improve myself and grow as an individual. Naturally, it is important to respect the values of others and to hope that this respect will be reciprocated. I am also acutely aware of the importance of sharing common goals, not being chained unnecessarily to existing habits and customs and taking ownership of

> one's responsibilities by proactively taking action. Moving forward, I hope to promote further growth in pyrotechnic devices while at the same time improving my own capabilities and skills.

Joanna Fieduk

Manager, Sales & Marketing Europe Daicel Safety Systems Europe Sp. z o. o. (DSSE)

Optimal Workplace Creation (Personnel Systems, etc.)

Approach to Diversity

Employment of Persons with Disabilities

As a part of its social responsibility activities, Daicel worked hard to achieve a fiscal 2011 official disabled persons employment rate of 1.8%, while proactively hiring persons with disabilities to support the aspirations of these individuals to participate in social activities and to provide motivation in life. We pay utmost attention in assigning jobs according to the degree of disability, in order to help each of these individuals to accomplish their best.



Continued Employment System

With the aim of promoting the employment of people age 60 and older, Daicel introduced a system for continued employment in 2003 for retired employees. In fiscal 2011, 29 of 31 employees (continuous employment rate: 93.5%), who reached the retirement age, were employed on a continuous basis under this system. The limit for reemployment is up to 65 years old and is made through a labor-management agreement. We will continue to offer a work environment where veteran employees can make use of their knowledge and experience.

Global Human Resource Recruitment and Development

In order to promote global management, Daicel actively promotes the recruitment and development of global human resources. Of the 29 graduates newly recruited in fiscal 2012, three were from countries other than

Japan. The Company also maintains a recruitment policy at overseas subsidiaries that ensure the employment of local staff without discrimination. Through a global human resource development policy, the Company is fostering personnel imbued with the Daicel Spirit, who continue to excel around the world.



Efforts to Promote a Balanced Working Life

Leave-of-Absence and Labor System to Support Each Employee's Personal Life

Amid the ongoing decline in birthrates and an aging population, Daicel established the following systems to develop a working environment in which employees can work in comfort and with peace of mind.

• Child-rearing leave

Employees can take leave to focus on child rearing until the day before their child has reached the age of one (or up to 18 months in certain cases).

• Extended nursing care leave

Employees can take extended nursing care leave of up to 93 calendar days when full-time nursing care is necessary for family members.

• Special leave due to personal accident or illness

Employees can acquire special leave of up to 20 days per year, aside from annual paid holidays, in the event they have a non-work-related accident or illness and have to be absent from work for over one week.

Family care leave

Employees can shift special leave due to a non-work-related accident or illness to family care leave of up to 10 days per year when a family member falls ill for over one week and requires full-time care.

Reduced work-hour system

Employees can decrease their work hours by up to two hours per day when they need reduced hours due to pregnancy, childbirth (within one year of delivery), child rearing (up to the 3rd grade in elementary school) or nursing care (of family members).

Promoting the take-up of annual paid leave

Employees are encouraged to take annual paid leave on certain days when drawing up annual plans for each workplace.

Labor and Management Relationship to Support Various Initiatives

Daicel considers the labor union to be an important stakeholder and, accordingly, has established the Labor and Management Charter. With respect to the individual positions of labor and management, management carries out discussions with labor in good faith in order to best develop the Company's business. Through these efforts, we are maintaining and reinforcing a healthy relationship between labor and management. In addition, labor and management committees are set up at each place of work while a variety of measures are undertaken to enhance the implementation of work-hour management and productivity.

Information Regarding Human Resources and Labor Services

1. Number of employees		(.	As of March 31, 2012
Full-time employees	Regular employees	Male	1,487
		Female	168
	Manager and above	Male	709
		Female	10
	Sub-Total	Male	2,196
		Female	178
	Total		2,374
Part-time employees	Contract employees		212
	Temporary staff		40
	Total		252
2. Average age:			41.6
3. Average service years:			17.9
4. Average number of depe	ndents:		1.1
5. Average annual salary:			¥7.182 million
6. Paid-holiday consumption rate:			65.4%
7. Personnel turnover rate (fiscal 2011):		0.9%
8. Recruitment (fiscal 2011):	New graduates:	52
		Mid-career:	45
9. Disabled persons employ	ment rate (fiscal 2011):		1.88%
10. Number of reemployed). Number of reemployed persons (fiscal 2011):		45
11. Number of employees w extended nursing care le	5	Child-rearing leave: Nursing care leave:	4 0
12. Number of union memb	ers:	5	1,655
13. Ratio of union member	s to total employees:		64.0%
14. Average age of union n	nembers:		38.5
The above data is for Daicel Co	poration on a non-consolidation	ated basis.	

Workplace Health Promotion (Healthcare Activities)

In 2003, Daicel established a Healthcare Committee, which represents both labor and management. This committee is working to create workplaces within Daicel where individual Daicel employees can exert their individuality and capabilities and promote health throughout the Company's workplaces. The Healthcare Committee helps employees who have developed physical or mental disorders to return to work. More specifically, in line with its policy



Initiatives of the Healthcare Committee

Healthcare Initiatives by the Daicel Group

In accordance with its medium-term plan, the Daicel Group implements surveys to ascertain the status of healthcare activities at each Group company. As a part of efforts to provide comprehensive support, the Group maintains a system where nurses address the daily health management needs of staff. At the same time, psychiatrists are employed on an as-needed basis to help employees who have developed a mental disorder.

• Providing Healthcare Education

Daicel distributes the Stress Management Handbook to all employees with the goal of deepening awareness of the importance of mental and physical health and increasing the employee's ability to cope with stress. Using the Stress Management Handbook, we implement various educational measures at each place of work. In order to bolster communication, we conduct training taking into consideration the status of each employee. Through these means, every effort is being made to maintain a bright and invigorating workplace.

Utilizing a Psychiatrist Employed Exclusively by Daicel

Daicel began employing its own psychiatrist in 2007 in order to bolster its follow-up care system for employees who have developed mental disorders,



employed exclusively by Daicel

a situation that has been on the increase. This psychiatrist implements consultation services for employees who have developed mental disorders, provides operational assistance to the workplace return program and mental health training, while disseminating related information to employees. of providing physical and mental care, the committee formulates and implements plans for various activities aimed at identifying such employees. These activities include the offering of educational programs to prevent physical and mental disorders and the construction of necessary systems. In this way, the committee is striving to promote the improved physical and mental health of Daicel employees.

• Health Promotion Activities of Occupational Health Staff

Daicel has employed seven occupational health doctors and nine health nurses, who are providing health services at its two head offices (Osaka and Tokyo), six plants (Aboshi, Hirohata, Harima, Ohtake, Arai and Kanzaki) and one research center (Aboshi). Through health counselor offices at these business sites, doctors and nurses provide follow-up services after regular health checkups while offering consultation, education and guidance relating to healthcare. In addition, they cooperate with Daicel's corporate health insurance society in providing specific medical checkups and health guidance. As such, they are leading Daicel's healthcare activities. Under the slogan of creating workplaces where each employee can exert his or her individuality and capabilities, our occupational health doctors and health nurses are working together to promote health throughout Daicel.



Maintaining Communication with Local Communities

The Daicel Group aims for mutual prosperity with society, which is why we engage in a variety of community-based initiatives and provide support after disasters.

Photo

Nurturing Children for the Future

"Children's Chemistry Experiment Shows" for Disaster Affected Areas

Daicel-Evonik Ltd. took part in "Build a Maze with Powder Magic," a show of chemistry experiments performed for members of children's clubs in the Miyagi Prefecture cities of Natori and Higashi-Matsushima. The event began as an opportunity to provide smiles to children in disaster areas, and Evonik Group in Japan worked with Save the Children Japan to put on the shows.

Through their response with excitement and praise (ranging from "I never knew experiments could be so much fun!" to "Please come again!"), we were able to know that we had achieved our aim.

Exhibiting at "Science Festival For Youth"

The Arai Plant participated in the Youth Science Festival hosted by Myoko City, Niigata. Members set up an area that let children make light from chemicals, using an experiment to show children the wonders of chemistry. Though only planning to provide a display at first, Arai Plant employees changed the setup so the children could actually perform experiments, getting advice directly from the employees as they did so. More than 100 persons took part in the experience.

The advance setup and preparations were extensive. In addition, the children needed a lot of advice, which was no easy matters. Still, when the chemical reaction worked and created a beautiful light, the employees knew from the children's shouts of joy this hands-on approach was worth all the effort.

"I Love Chemistry" Hands-on Workshop

Our Ohtake Plant held an "I Love Chemistry" hands-on workshop for children as part of an event introducing elementary school students to advanced technologies found in Otake City, Hiroshima. The event was sponsored by the Otake City board of education.

Photo

4

During the workshop, children used cellulose acetate made at Ohtake Plant to fashion their own membranes and feel the excitement of manufacturing activities. They also got to experience the fascinating properties of polarizing film, which is used in LCD TVs.

We hope to continue offering children the opportunity to develop an interest in chemistry.

Tour for Families





families got to see their loved ones at work.

They also got to view the surface of small objects like an ant and a hair under the powerful magnification of electronic microscopes. The children made sounds of surprise and delight to get a glimpse of a world only visible with a microscope.

Family members expressed gratitude that the children could see where and how their parents actually work.

Understanding the Importance of Reuse

Daicel Safety Systems Europe Sp. z o. o. of Poland took part in an event hosted by the local city government, giving children a fun lesson in the reuse of resources. Children staged a play about what kinds of garbage can be recycled. The children got a real sense of the importance of reuse.

Support for Disaster Affected Areas

···· Providing Portable Toilets in Disaster Affected Areas

Daicel FineChem Ltd., working through the Japanese Consumers' Co-operative Union (JCCU), provided 2,000 portable toilets for areas affected by the Great East Japan Earthquake. The JCCU compiled a list of items needed by those affected. When Daicel FineChem Ltd. considered what it could do to help, it decided to provide the portable toilets.

...... Joining Volunteer Activities in Disaster Affected Areas

Yusuke Kanda from the Tokyo Head Office and Kazuto Suzuki from Daicel FineChem Ltd. ran an activity to remove and sort through rubble in disaster affected areas. Participants could sense the hardships of people living in temporary housing locally and the difficulty of processing the rubble. In addition, Kouichirou Ooyama, Yusaku Takeuchi and Hidenobu Kano of the Harima Plant distributed meals at an evacuation center. The participants said, "When we saw the victims' smiles, it erased all the fatigue and gave us courage."

Building a "Mini-Dam" in Response to the Floods in Thailand

Polyplastics Marketing (T) Ltd. built a "mini-dam" to keep flood waters out of its surrounding area. The small dam they built went in a river between Lake Rajada (near the company) and Jed Sao Noi Waterfall. Using human power alone, the participants carried rocks and wood to the river bed and built the dam. By building the mini-dam, they were able to prevent flooding and soil runoff caused by heavy rain. With even managers taking part, this effort was also a good chance to deepen ties among employees.

Participation in Local Events

Joining Area Cleanup Event



Kyoei Shokusan Co., Ltd. joined in the Midosuji Clean Event sponsored by Independent Insurance Agents of Osaka Inc. This annual event started about a decade ago to clean up Midosuji, a street emblematic of Osaka. Kyoei Shokusan members worked with employees of other agencies and insurance companies to clean up the section from Osaka City Hall to Namba.





Portable toilets provided by Daicel FineChem Ltd.





Upgrading CSR Foundations

Corporate Governance Framework

directors and thereby reinforce our corporate governance.

management of corporate affairs.

Management Meetings

Auditing Office

Board of Corporate Auditors

The Company does not have any executive and managing directors. This is to

strengthen the decision-making and supervisory functions of the Board of Directors and

to clearly separate the Board of Directors' responsibilities from those relating to the

Daicel currently has four corporate auditors, two of whom have been externally

appointed. All corporate auditors are required to attend Board of Directors' meetings.

In addition, full-time corporate auditors are required to attend meetings of the

Management Meeting, the Risk Management Committee and other important organi-

Meanwhile, the Company's corporate auditors all together form the Board of

Corporate Auditors. The Board of Corporate Auditors holds meetings to report, deliber-

Corporate auditors regularly receive reports from the Company's internal auditing divi-

sion and independent auditors. In addition, on an as-required basis, they collaborate-

through the exchange of information and opinions-with the internal auditing division

and the independent auditors in promoting audits of the Company. The two external cor-

porate auditors have been designated as independent corporate auditors, as defined under

the Securities Listing Regulations of the Tokyo Stock Exchange and other bourses in Japan.

Also, as an organization to support audits by corporate auditors, the Company has

established the Office of Corporate Auditors. The Office of Corporate Auditors has its

own dedicated officers who are independent from divisions promoting business affairs.

Daicel has established the Management Meeting as a body to have deliberations and make

decisions prior to its president implementing the basic corporate management policies for-

mulated by the Board of Directors. The Management Meeting consists of the president,

Management Advisory Committee members and the executive officers selected by the

As an organization to conduct internal audits, Daicel has established the Auditing Office

in charge of internal auditing functions within its overall executive body. The Auditing

Office conducts regular internal audits of business divisions and Group companies.

president as its members. The Management Meeting convenes, in principle, twice a month.

ate and make decisions on important issues relating to the Company's audits.

zations, thereby auditing the overall management of corporate affairs.

Daicel has adopted a corporate auditor system. Also, by welcoming external directors and allowing them to provide opinions and advice based on their expertise, the Company is working to ensure that the decisions made by its Board of Directors are appropriate and the execution of director duties is effectively supervised. The Company has also adopted an executive officer system. The adoption of the executive officer systems has enabled the Company to clearly separate its decision-making, supervisory and business execution functions. Such a clear division of roles has allowed us to bolster our business management structure and, consequently, corporate activities. In addition, Daicel has adopted an internal company system. Through this system, the Company is promoting various initiatives aimed at strengthening collaboration among its production, sales and R&D functions, improving productivity and strategic functions within its corporate departments, and reestablishing its R&D structure.

Based on its corporate auditor system, the Company has established a corporate framework under which its Board of Directors makes management decisions in an efficient manner and fulfills its supervisory functions, and its Board of Corporate Auditors accomplishes its auditing functions. Such a framework has enabled us to keep reinforcing our corporate governance.

Board of Directors

Daicel's Board of Directors consists of nine directors, three of whom have been externally appointed. The Board of Directors meets, in principle, once a month to make decisions concerning important management issues in line with the regulations for the Board of Directors meetings

Furthermore, the Board of Directors supervises the management of corporate affairs. At Daicel, external directors are tasked with providing advice and supervisory functions based on their experience and expertise. Two of the Company's three external directors have been designated as independent directors, as defined under the Securities Listing Regulations of the Tokyo Stock Exchange and other bourses in Japan.

Five of the six in-house directors have concurrent positions as executive officers. Their responsibilities as executive officers are limited to those relating to Daicel's president, who provides supervisory functions for all business divisions and corporate departments. This means that their responsibilities have been separated from those of the Company's internal companies, which conduct actual business operations.

The term of office for Daicel's directors is one year. Such a short term of office enables Daicel shareholders to be better involved with the appointment of directors. At the same time, it allows us to better clarify the management responsibilities of our

Corporate Governance Framework

al General Meeting of Shareholder Appoints Appoints , Appoints Collaborates Audits Reports Collaborates Reports Executive Body Management Meetings Committees and projects addressing important management issue Planning Meetings Business Strategy Conferences Corporate Comp Auditing Office Responsible Care Division ubsidiary and Internal Company Presidents' Counc Support for voluntary audit and instruction , Internal audit , Responsible Care Audit All companies, production sites, R&D sites, and corporate departments Note: Executive officers include heads of internal companies, heads of sites, and heads of corporate departments who administer corporate affairs

In accordance with its basic policies concerning the development of internal control systems formulated by the Board of Directors, the Daicel Group works to administer and enhance its efficient and effective internal control systems.

We believe that these systems help the Daicel Group sustain steady growth. To accurately grasp the status of the entire Group and regularly discuss initiatives aimed at ensuring the effective functioning of internal control systems, Daicel has established an Internal Control Council

Risk Management

Daicel established the Risk Management Committee in 2006 as an organization to coordinate and promote Companywide risk management activities. The Risk Management Committee consists of executive officers in charge of corporate departments. Since its establishment, the Risk Management Committee has guided the entire Company in aggressively conducting risk management activities. In order to further enhance agility, membership of the Risk Management Committee was reconfigured in 2011 with corporate department heads taking up a central role.

Daicel places the utmost emphasis on identifying those risks that are likely to have a major impact on its ability to achieve established targets. With respect to the Company's annual risk inventory clearance initiatives, Daicel takes into consideration measures that are designed to prevent the incidence of risk or to reduce any subsequent impact. Priority levels are also assigned to each risk and countermeasures implemented accordingly. Details of risks for which an inventory process has been completed are entered into an intranet database. Each department is then required to input details of countermeasures implemented and progress on a six-monthly basis (data is entered at the time a new risk is identified). Utilizing this database, Daicel pursues a Plan-Do-Check-Act (PDCA) cycle in conjunction with the risk management activities of each department.

More than 30 Group companies in Japan and overseas also promote similar activities*.

IR Activities

Extending beyond the timely disclosure of information, Daicel adopts an aggressive approach toward its IR activities. The Company holds briefing sessions for institutional investors and analysts to present its interim and full fiscal year results. This initiative is complemented by a series of individual interviews as well and visits undertaken by the Company. Through these and other means, Daicel strives actively to promote communication and to ensure that all appropriate parties gain a deeper understanding of the Company and its activities. Moreover, Daicel maintains a designated IR page on its website where it posts various pertinent documents including its Securities Report, Financial Results Report, Briefing Session and presentation materials, Annual Report and DAICEL TODAY Business Report in a timely manner. At the same time, the Company is upgrading and expanding its information disclosure aimed at individual investors.

Plant Tours for Analysts

Over a two-day period from February 23 to February 24, 2012, Daicel invited 21 institutional investors and analysts to attend tours of its Himeji Production Sector/Aboshi Plant and Harima Plant



Internal Control Systems

Response to the Financial Instruments and Exchange Law

(Internal Control Reporting System)

The Auditing Office assesses the effectiveness of the Company's internal control over financial reporting to prepare and submit a report to the Financial Services Agency (FSA) every year. Through these activities, the Auditing Office is striving to ensure the reliability and transparency of Daicel's financial reporting.

Daicel's report on internal control over financial reporting for fiscal 2011 is disclosed on EDINET. a corporate disclosure system established by the FSA at the following

http://info.edinet-fsa.go.jp/ (Japanese language only)

Through these activities, Daicel and its Group companies are working to enhance awareness toward risk. Hearings are undertaken by the Risk Management Committee based on summary activity reports submitted by each department at the end of each fiscal year. This process enables all appropriate parties to fully grasp the status of risk throughout the Group as well as appropriate countermeasures. Drawing on this information, the Risk Management Committee issues advice as considered appropriate.

With the aim of improving the ability of employees to make the appropriate initial response when confronted by an accident or natural disaster, Daicel formulated the Emergency Risk Management Guidelines in January 2008. Based on these guidelines, the Company has continued to hold drills that assume the occurrence of significant risks. In fiscal 2011, drills were conducted simulating major plant disasters following massive earthquakes that occur on a holiday. Members of the emergency measures headquarters were invited to participate in the introduction of an emergency call system. This introduction of this system is designed to further enhance the accuracy and speed of our efforts during a major disaster. Careful consideration is being given to all issues uncovered during each drill with further steps taken to update and improve the guidelines in terms of their practical application.

* Certain company data is excluded from database use.

Communication with Shareholders and Investors

At the Aboshi Plant, participants viewed Daicel's integrated production center (IPC), which forms the heart of the Daicel Production Innovation System and continues to attract wide-ranging attention as a process industry production innovation model. At the Harima Plant, the participants were able to tour the production line for automobile airbag inflators and aircraft emergency-escape systems. This opportunity to view activities at two of Daicel's major production bases triggered lively discussions and questions.

Annual Report

Daicel publishes an English language annual report mainly for the benefit of overseas investors. A copy is also posted on the Company's homepage. Marking its initial year, the 2011 report featured Daicel's medium-term 3D-I plan with the subtitle "Designing the Future" on the cover. Detailed information regarding the plan was outlined in the report in an effort to provide a solid understanding of its purpose and the Company as a whole.

ANNUAL REPORT 2011	
DAICEL CORPORATION	
Designing the Future	
DAICEL	
DAICEL	

Corporate Ethics (Compliance) Initiatives

The Daicel Group has positioned corporate ethics as an essential component of the systematic efforts of each department and Group company to engage in CSR activities.

Corporate Ethics Management System

Adherence by each employee to corporate ethics is an essential management issue, and the Daicel Group is accordingly promoting corporate ethics Groupwide.

The Corporate Ethics Management System is not a temporary measure. In order to ensure that corporate ethics is practiced continuously, we have formulated our Corporate Ethics Management Regulations. In addition, each department has established its own Corporate Ethics Management System based on processes that incorporate the Plan-Do-Check-Action (PDCA) cycle, and through activities involving the participation of all employees, we are striving to maintain and improve this system.

Promotion System

Daicel established the Corporate Compliance Program Division to promote corporate ethics activities and appointed the Company's representative director as its Corporate Compliance Officer.

Each Daicel department and Group company appoints a CSR Promotion Chief to lead various corporate ethics- and compliance-related activities.

The Corporate Compliance Program Division provides support to each Daicel department and Group companies. The Division confirms the status and progress of each corporate ethics activity plan and helps to resolve various issues specific to each department and workplace through a process of interactive dialogue and opinion exchange. Details of individual workplace activities that provide a reference for other departments are posted on the intranet. At the same time, the Division provides education and training materials.

With respect to specific compliance issues, individual committees are established in accordance with each set of relevant rules and regulations. In this manner, every effort is made to maintain and promote compliance.

Examples of Committees

Regulation	Committee	Goals
Regulations on Export Controls	Export Controls Committee	To ensure that the Company and its Group companies do not engage in illegal export activities or the provision of goods and technol- ogies that are prohibited under security trade- related laws and regulations for the purpose of maintaining international peace and security
Regulations on Personal Information Protection	Personal Information Protection Committee	To acquire, manage and use personal informa- tion appropriately
Regulations on Information Disclosure	Information Disclosure Committee	To disclose corporate information appropriately

Legal Compliance System

Daicel has established a Legal Compliance System. Under this system, corporate departments are designated as organizations in charge of ensuring compliance with laws and regulations relating to their respective operations. More specifically, designated corporate departments are tasked with obtaining information regarding related laws and regulations and providing that information to other departments that may be affected. There are 13 corporate departments including the Legal Group, designated as organizations responsible for compliance. These departments use the intranet to provide employees with information on revisions to laws and regulations as well as guidelines while also providing education materials.

Utilizing a checklist, each department and Group company in Japan voluntarily conducts a compliance review once each year. This initiative is designed to uncover and reflect on any outstanding issues.

Education and Training Programs

Daicel systematically provides corporate ethics training at various levels including new graduate recruits, position-specific corporate ethics training when an employee is promoted, directors and presidents of Group companies. In addition to reconfirming the Company's concept and definition of CSR, training provides examples of misconduct by Daicel Group as well as other companies. These examples form the basis for discussions and again highlight the importance of corporate ethics. The Corporate Compliance Program Division takes the lead in promoting corporate ethics training at Group companies in Japan. Training was conducted at a total of four Group companies in fiscal 2011. Also, in line with its technician training programs aimed at familiarizing technicians and engineers with the basic techniques required for fulfilling a manufacturer's responsibility-achieving the stable supply of safe products-the Company offers educational programs in such areas a legal compliance.

Individual divisions are tasked with obtaining information regarding the laws and regulations directly related to their operations and educating their personnel. In addition, organizations responsible for compliance with laws and regulations continue to hold in-house seminars. The Personnel Group takes a central role in holding in-house seminars open to all employees seeking to attend. Moreover, in-house seminars are held on specific issues and topics at the request of individual departments.

Implementation Themes Extracted from In-house Seminars

Act against the Delay of Payment of Subcontract Proceeds, etc., to Subcontractors	Intellectual Property Rights
Export Management	Regulations on Insider Trading
System Security	Regulations on the Control of Chemical Substances
Countermeasures against Antisocial Forces	Basic Knowledge on Contracts an Agreements

Whistleblowing System

With the intent of establishing a system to protect whistleblowers who act in the public interest, Daicel is taking steps to ensure that the employees of each workplace are able to issue report and hold consultations without difficulty. However, for circumstances where corporate ethics-related issues cannot easily be resolved through ordinary reporting to supervisors, the Company has put in place the Corporate Ethics Help Line. This Help Line is not only an in-house system. Daicel has also established an external counterpart through which employees can consult with external parties. In this manner, the Company is endeavoring to create a system that is easy-to-use by all employees.

Through the administration of the Corporate Ethics Help Line, whistleblowers and those who request consultations must be protected from the consequences of their actions. Daicel's Corporate Ethics Management Guidelines clearly state that:

- 1. The personal information and privacy of whistleblowers and those who request consultations must be protected;
- 2. Adverse treatment in response to whistleblowers and those who request consultations must be prohibited; and
- 3. Results related to investigations must be fed back to whistleblowers and those who requested consultations.

Similar in-house and external help lines are being established in Group companies in Japan to protect whistleblowers and those who request consultations. Drawing on the experience gained in Japan, whistleblowing systems are steadily being introduced throughout Group companies overseas.

The Responsible Care Initiative

The Responsible Care Initiative refers to activities in which organizations that manufacture or handle chemicals implement environmental, safety and health measures in a voluntary manner. These organizations are required to publicize the results of these activities and to facilitate communication with communities in which they operate. In addition, these activities must be conducted at all stages, from chemical development to disposal. The Responsible Care Initiative is promoted by th "Agenda 21" document of the United Nations Conference on Environment and Development (UNCED), also known as the Responsible Care Earth Summit, held in Rio de Janeiro in 1992. The focus of this initiative is to encourage the proper management of chemicals. In Japan, in collaboration with the ICCA, the Japan Responsible Care Council (JRCC) was established in 1995 as a wing of the Japan Chemical Industry Association (JCIA). The JRCC was subsequently reorganized as a Responsible Care Committee under the JCIA. Since then, many corpora-

• Scope of Data Calculation for Responsible Care Initiative Reporting Data calculation in this section includes business sites that conduct production and logistics operations. Detailed data, including the breakdown of the pollutant release and transfer register (PRTR) and the environmental impact of each plant and research center, is available on Daicel's website at:







The Responsible Care Initiative

Responsible Care: Basic Policies and Implementation System

We will strive to implement the Responsible Care Initiative throughout our operations in order to contribute to a viable sustainable society.

In 1995, Daicel established its Basic Policies for Responsible Care (RC) based on the guiding principles for improvement of environmental, health and safety conditions of the Japan Chemical Industry Association.

Daicel is deeply aware of its responsibility as a corporate citizen to protect the environment and ensure the health and safety of all those involved with the Company in whatever capacity and every stage of its operations- from the design of products to their manufacture and disposal. With this in mind, Daicel is promoting across-the-board RC activities.

Basic Policies for Responsible Care

In all aspects of its business operations, Daicel is making the utmost efforts to ensure environmental preservation, process safety and disaster prevention, occupational health and safety, chemical and product safety, distribution safety, and dialogue with society in accordance with the Responsible Care Standards of the Japan Chemical Industry Association (JCIA). Daicel is making steady and continuous progress in all of these areas.



Organizational Structure for Responsible Care



11th Daicel Group Responsible Care Promotion Assembly (April 3, 2012)

The Daicel Group has continued to hold the Daicel Group Responsible Care Promotion Assembly since fiscal 2000. The goals of the Assembly are to ensure that the Group's responsible care initiative philosophy and related annual policies are more widely understood and accepted by the Group and to raise the level of Group company activity. Each year, Daicel's top management as well as representatives and other employees involved in the promotion of the Responsible Care Initiative attend.

The Assembly held in fiscal 2012 attracted approximately 80 participants.

In a keynote address at the 12th Daicel Group

Responsible Care Assembly, Dr. Shozo Tamura,

Professor Emeritus of Tokyo University, spoke on the concept of industrial security based on a culture of safety.



Misao Fudaba, President and CEO, addressing the Assembly



Since 1995, Daicel has administered its unique Total Environmental, Health and Safety Assessment System ("Total EHS Assessment System"). Assessments based on this system are undertaken in accordance with the Basic Policies for Responsible Care.

Daicel Safety Systems America, LLC

Under the Total EHS Assessment System, a prior assessment of diverse risks associated with all business operations-including planning, R&D, production, consumption, and disposal-is initiated in order to ensure thorough consideration of environmental, health and safety issues. From a risk management perspective, the implementation of Total EHS Assessment System is indispensable to ensuring effective corporate management.

The total number of assessments to date stands at around 540 for Class I plans (new plans with a profound impact on corporate management). The Total EHS Assessment System was first employed at overseas Group companies in fiscal 2010. A total of 11 assessments have been implemented in the ensuing period.

Details of New Plans

New projects • Changes in matters (e.g. processes) related to manufacturing

• New contracts/changes in distributors, customers and product applications

• New contracts/changes in manufacturing outsourcing • Establishment, expansion and

renovation of facilities • Acquisition and transfer of properties and equipment

• New/change in waste management

Environmental Management Systems

Environmental management systems support our Responsible Care Initiative.

We have committed ourselves to a program aimed at ensuring that all of Daicel's plants as well as its research centers acquire certification under ISO14001, a set of international standards for environmental management systems. This is intended to promote environmental preservation, an important aspect of Responsible Care.

ISO14001 Certification Status (Plants and Research Centers)

Plant/Research Center	Acquisition Date	Certificate No.
Ohtake Plant	August 1999	JQA-EM0492
Central Research Center	June 2000	JQA-EM0894
Aboshi Plant	December 2000	JQA-EM1229
Hirohata Plant (as Daicel Polymer Ltd.)	April 2001	JQA-EM1511
Harima Plant	July 2001	JQA-EM1683
Kanzaki Plant	December 2001	JCQA-E-0329
Arai Plant	December 2001	JCQA-E-0339

What

Eco Action 21: Environmental management systems promoted by the Ministry of the Environment of Japan. These systems are designed for easy implementation by small- and medium-sized corporations. The Institute of Global Environmental Strategies Center for Sustainability (IGES-CfS) serves as the registrar of the certification

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Overseas Group Companies Introducing Total EHS Assessment System from Fiscal 2010

Daicel Safety Systems Europe Sp. z o. o. Daicel Safety System: (Jiangsu) Co., Ltd.

Daicel Safety Systems (Thailand) Co. Ltd.

Total EHS Assessment System: Its Mechanisms

- 1 Implementation of Total EHS Assessment System is a precondition for new-plan approval.
- 2 New plans are ranked by importance. This allows the implementation of a rank-specific method of Total EHS Assessment System
- 3 Total EHS Assessment System is performed at each pivotal stage (basic, detailed and follow-up assessments according to stage).

Items in Prior Assessments

Legal compliance

Product safety

- Operational safety at facilities
- Safe handling of chemical substances
- Environmental preservation
- Distribution safety
- Occupational health and safety
- Safety in manufacturing outsourcing, purchasing and sales

In addition, Daicel is promoting the spread of environmental management systems throughout Other Group Companies.

In the fiscal year under review, Daicel Pack Systems, Ltd. acquired ISO14001 certification.

Environmental Management System Certification Status (Other Group Companies)

Group Company	Acquisition Date	Certificate No.
Polyplastics Co., Ltd. (R&D Center)	February 1999	ISO14001 JQA–EM0337
Polyplastics Co., Ltd. (Fuji Plant)	April 1999	ISO14001 JQA-EM0414
Daicel Novafoam Ltd. (Head Office and Nagano Plant)	February 2003	ISO14001/C2003-00362/Perry Johnson Registrars Inc.
Daicel Novafoam Ltd. (Okayama Plant)	June 2004	ISO14001/C2004–01523/Perry Johnson Registrars Inc.
Daicel Pack Systems, Ltd. Isezaki Plant	March 2012	ISO14001 JQA-EM6795
Dainichi Chemical Corp.	June 2010	Eco Action 21 (certification)/0005067

The Daicel Group's Responsible Care Targets and Results

Daicel's Responsible Care Targets and Results

	Fiscal 2011			
Area	Targets	Results	Achieve- ment rate	
Environmental Preservation Global warming and energy conservation	Maintain effective Companywide energy management systems Reduce per-unit energy consumption by 1% or more from the fiscal 2010 level. • Introduce new gas turbines for generation boilers • Increase fuel conversion using waste tires and palm shells	Put in place a well-established Companywide energy management system in accordance with the Energy Saving Law. Pushed forward wide-ranging energy conservation measures mainly through the Companywide Energy Conservation Committee. Successfully improved per-unit energy consumption by 1% or more from the previous fiscal year. Plans to commence use of gas turbines in October 2012 according to established schedules. Increased the waste tire and other mixed combustion rate from 27% in the previous fiscal year to 30%; continued the use of palm shells as an alternative fuel on a trial basis; undertake ongoing consideration of efforts to further improve the waste tire mixed combustion rate going forward.	0	
	Regularly provide information on the status of household energy- saving activities and further promote the implementation of initiatives.	Received an award with five other companies from JCIA recognizing the Group's efforts to promote household energy-saving activities in fiscal 2010. Took positive steps to promote energy conservation, particularly during the summer and winter seasons when supply was tight; put forward energy-saving ideas and put in place an energy conservation analysis checklist.	0	
Environmental Preservation Waste reduction and recycling	Promote activities to prevent increases in final disposal by landfill (Daicel has already achieved the target set under the Keidanren Voluntary Action Plan on the Environment for a Recycling-Oriented Society of the Japan Business Federation of reducing the final disposal of landfill in fiscal 2015 to 35% of the fiscal 2000 level).	Unable to prevent an increase in final disposal by landfill due to a failure in effectively utilizing a portion of the Group's industrial waste. Took steps to address legal reforms; undertook statutory periodic inspection of in- house waste treatment facilities; posted maintenance and management data on the Company's website.	Δ	
Process Safety and Disaster Prevention	Continue to implement earthquake, tsunami and other disaster risk countermeasures. Introduce emergency earthquake alert and emergency call systems. Undertake a review of large-scale disaster countermeasures.	Put in place and commenced implementation of a Groupwide five-year plan aimed at bolstering earthquake resistance assessment and essential earthquake-resistance strengthening measures. Introduced a Groupwide emergency call system at the Company's disaster prevention headquarters and emergency earthquake alert systems at principal plants. Completed a review of the Company's in-house large-scale disaster prevention organizational structure.	0	
Occupational Health and Safety	Promote 3S, hazard prediction and crisis-identification activities (assign new and mid-career employees to identify issues). Prevent similar accidents through the use of the Safety Alert Database (prevent human errors). Promote the standardization of basic actions and safety rules across the Group.	Commenced interactive workplace as well as 3S activities placing particular emphasis on the perspectives of new and mid-career employees; launched crisis-identification and hazard prediction activities. Prepared and input a compendium of work-related accidents on the Safety Alert Database; put in place workplace education tools for use by individual business sites. Put in place a set of standardized Groupwide rules covering oxygen deficiency and related diseases.	0	
Distribution Safety	Eliminate at-fault logistics accidents. Halve the number of logistics-related issues.	One at-fault logistics accident (inadequate maintenance management of cylinders took place on a transport ship). Increase in the number of logistics-related issues. Implemented steps to strengthen the monitoring, guidance and product inspection processes with respect to partner companies; undertook education and training using specific examples of past issues.	×	
	Promote energy-saving measures such as increasing transport units and decreasing drayage transport while preventing deterioration in per-unit energy consumption in inefficient logistics operations possibly caused by increased transport volume.	Per-unit energy consumption essentially unchanged from the previous fiscal year; contained further deterioration.	0	
Chemical and Product Safety Comply with European regulations on Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)	Prepare for the REACH registration of products with an annual tonnage of 100 to 1,000 tons before the deadline in May 2013.	Undertook preparatory steps and/or the registration of products with an annual tonnage of 100 to 1,000 tons subject to REACH regulations before the deadline in May 2013.	0	
Chemical and Product Safety Reduce emissions of volatile organic compounds (VOCs)	Achieve the 30% reduction of VOC emissions from the fiscal 2000 level and promote further reduction measures.	Achieved the 30% reduction target from fiscal 2000 levels set by the Japan Chemical Industry Association (JCIA).	0	
Chemical and Product Safety Reduce emissions of pollutant release and transfer register (PRTR) substances	Promote reduction measures with the aim of achieving the 40% reduction target from the fiscal 2001 level established under the medium-term plan.	Reduced emissions by 28 tons year on year (32% from the fiscal 2001 level) due mainly to improvements in usage rates at the Kanzaki Plant.	0	
Publish reports and promote commu- nication with local communities	Continue the disclosure of environmental performance indicators for other Group companies.	Disclosed environmental performance data and indicator details for other Group companies in Daicel's CSR Report 2011 as well as on the Company's website.	0	

Other Group Company Responsible Care Targets and Activity Results

	Fiscal 2011			
Area	Targets	Results	Achieve- ment rate*	
Environmental Preservation	Reduce per-unit energy consumption by 1% or more from the fiscal 2010 level (business subject to the Energy Saving Law).	Despite the year-on-year increase in per-unit energy consumption of 0.5%, achieved an overall 5% reduction from the fiscal 2006 level for an average reduction of 1% or more.	Δ	
	Regularly provide information on the status of household energy- saving activities and further promote these activities.	Received an award from the Japan Chemical Industry Association (JCIA) in recognition of the Group's household energy-saving activities.	0	
		Took steps to promote energy-saving measures; distributed energy-saving items and diagnosis materials in response to tight electric power supply and demand.	0	
	Continue 3R activities for industrial waste.	Successfully prevented any further increase in final disposal by landfill.	0	
Occupational Health and Safety	Promote 3S, hazard prediction and crisis-identification activities on a Groupwide basis.	Promoted 3S, hazard prediction and crisis-identification activities; improved work-related accident performance compared with the previous fiscal year (reduced the number of work-related accidents without lost workdays from six to five).	0	
Process Safety and Disaster Prevention	Continue the effective administration of emergency response guidelines In addition to Class I plans, put in place a total EHS assessment system for all small-scale retrofitting plans.	Continued to engage in operations consistent with emergency response guidelines. Raised the level of Class I and small-scale retrofitting plan implementation.	0	

* Achievement rate: \bigcirc : 100 to 70%; \bigtriangleup : 70 to 40%; \times : 40 to 0%

Please refer to the following website for details regarding fiscal 2012 targets and the medium-term plan. URL: http://www.daicel.com/csr/library.html

Drayage transport: Refers to the surface transport of containers by truck from ships and railways to their destinations (surface transport tends to consume more energy than marine transport). What 3R: This term refers to activities to reduce waste generation, reuse reusable resources and recycle resources.



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Please refer to the following website for details regarding overseas Group company business activities and environmental impact data. URL: http://www.daicel.com/csr/library.html

Environmental Accounting

Daicel has introduced an environmental accounting system with the goal of implementing efficient environmental preservation activities and ensuring further corporate transparency.

With the aim of contributing to the prevention of global warming, the entire Daicel Group promoted energy- and material-saving activities throughout fiscal 2011. As a result, the Group lifted its investment in initiatives designed to preserve the global environment to approximately ¥617 million, a year-on-year increase of 38%. Funds were directed toward the installation of gas turbines as well as the purchase of exhaust heat recovery and related equipment.

Looking ahead, the Daicel Group will continue to employ environmental accounting as the means by which to accurately assess the efficacy of its investment while proactively promoting environmental preservation.

The quantitative results (environmental preservation effects) are summarized in the sections "The Daicel Group's Responsible Care Targets and Results" (on page 42) and "Environmental Preservation" (on pages 44 to 45).

Time period for reported totals: April 2011 to March 2012

Calculation method for reported totals: Calculated according to the Environmental Accounting Guidelines, Year 2005 Edition, published by the Ministry of the Environment of Japan, and the Environmental Accounting Guidelines for the Chemical Industry, published by the Japan Chemical Industry Association (JCIA). Amounts invested: Actual sums for capital investment in environmental preservation in fiscal 2011.

Cost amounts: The totals for actual expenses of equipment depreciation, maintenance, management, and labor related to environmental preservation.

Economic effects resulting from environmental preservation activities: Indicated as monetary benefits only and does not include risk avoidance effects or de facto effects. Economic effects attributable to reductions in energy costs are presented by annualizing the effects of energy cost reductions realized through energy-saving initiatives actually implemented during fiscal 2010.

Environmental Preservation Costs

1. Environm controlli impact of service op business (1) Po (2) Glo pre

(3) Re 2. Costs of mental in service op upstream (upstrear

3. Environm

in manag

4. Environm in R&D a 5. Environm in comm (commur 6. Costs of

(environr

Total

Capital ex R&D expen

1. Cost red 2. Improve 3. Cost re 4. Benefit 5. Reducti Total

Business Activities and Their Environmental Impact

\rightarrow	Emissions into the Atmosphere	Daicel	Other Group Companies
UTPUT Ivironmental Impact)			
	Discharged into Public Water	Daicel	Other Group Companies
	Industrial Waste	Daicel	Other Group Companies
	Amount recycled Final disposal by landfill	84 thousand tons 1.6 thousand tons	7 thousand tons 9 tons
	PRTR substances (amount transferred)	85 tons	73 tons

Classification	Major Initiatives	Amounts Invested (¥ million)	Cost (¥ million)
mental preservation costs of ng the environmental of our production and operations that occur within s areas (business area costs)		860	3,587
ollution prevention costs	Prevention of air and water pollution, control of harmful substances, levies for pollution-related health damages	185	2,110
blobal environmental reservation costs	Energy conservation, capital expenditures for fuel conversion, cost of thermal pinch analysis	617	69
lesource recycling costs	Appropriate treatment and disposal of industrial waste	58	1,408
controlling the environ- mpact of production and operations occurring n or downstream m and downstream costs)	Costs of recycling containers and packing materials and green purchasing	0	23
nental preservation costs gement activities	Labor costs of environmental management, expenses for EMS operations and maintenance, costs of environmental education, costs of environmental impact alleviation	0	537
nental preservation costs activities (R&D costs)	R&D work for reducing the environmental impact of products and technologies	23	123
nental preservation costs nunity activities nity activities costs)	Costs of environmental promotion activities and participation in community events	0	32
environmental damage mental damage costs)	Environmental remediation costs, compensation for damages related to environmental preservation, and insurance premiums and transfers to reserves for environmental damage	0	3
		883	4,305
	A		

Item	Amount (¥ million)	Environmental Rate (%)
penditures in the applicable period	8,242	10.7
enditures in the applicable period	8,313	1.5

C Economic Effects (Monetary Benefits) Resulting from Environmental Preservation Activities

Item	Amount (¥ million)
duction through energy conservation	425
ement of total thermal efficiency through in-house power generation	2,640
duction through resource conservation	494
s obtained by recycling	297
ion of expenses for waste treatment or disposal	11
	3,867

Environmental Preservation

The Daicel Group is throwing its full weight behind efforts to conserve energy. Following the Great East Japan Earthquake, the Group is taking steps to better visualize its energy consumption while incorporating efforts to reduce energy consumption during peak periods into its production plans. Both at work and at play, Group employees are carrying energy-saving initiatives through to their lives at home.

Global Warming Prevention and Energy Conservation

Daicel is a participant in the Nippon Keidanren's Commitment to a Low Carbon Society. At the same time, the Company established the Energy Conservation Committee* in fiscal 2010. Led by this Committee, Daicel is actively working to reduce its CO₂ emissions to achieve the industry-specific reduction target set under the aforementioned Commitment for fiscal 2020. In fiscal 2011, Daicel cutback its year-on-year energy consumption by 14 thousand kiloliters while improving its energy consumption rate index seven points compared with the previous fiscal year to 76 with the 1990 level set as 100. This indicator is based on the Company's voluntary action plan for environmental conservation. (Taking into consideration product composition, the energy consumption rate index grew 1.6%). In addition, Daicel's CO₂ emissions attributable to energy consumption declined around 5%, or 70,000 tons, year on year.

Please refer to the following website for details regarding the Daicel Group's energy consumption, CO₂ emissions attributable to energy consumption and other pertinent information.

http://www.daicel.com/csr/library.html

* The Energy Conservation Committee

The Energy Conservation Committee was established in fiscal 2010 as Daicel's central body to effectively promote and manage Groupwide energy-saving activities. The Committee is responsible for setting related targets and managing progress as well as organizing promotion systems and implementing plans for optimizing energy use.



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the family of Masahiko Ueda Production Department Kanzaki Plant, Daicel Value Coating Ltd.

Energy-Saving Activities at Employees' Households

In order to encourage the families of employees to participate in energy-saving activities at home and in turn contribute to the prevention of global warming, Daicel distributes information pamphlets on energy-saving items as well as diagnosis checklists.



CO₂ Emissions Attributable to Energy

target for average per-unit energy consumption index between 2008 and 2012 at 80 with the 1990 level set as 100. **Target for fiscal 2013, the final year of Daicel's medium-term plan

Energy Consumption and



Launched in fiscal 2010, currently over 10,000 Daicel Group employees and their families participate in energy-saving initiatives in the home. To date, the aggregate amount of CO₂ emission reductions resulting from this initiative total approximately 3,000 tons. The Group's efforts were recognized through an award presented by the Japan Chemical Industry Association (JCIA).



Per-unit value: This value indicates the efficiency of certain indicators. For example, when energy consumption is used as the indicator, efficiency is presented as "per-unit energy consumption" to show the total What consumption of electricity, thermal energy and fuels required for manufacturing a specified unit products. Smaller per-unit energy consumption indicates higher production efficiency—in other words, greater energy efficiency-which in turn presents greater potential for preventing global warming.

Per-unit value index: This index is used to show trends in per-unit values over several years by adopting the per-unit value of a standard year as a benchmark. For example, when energy consumption is used as the indicator, per-unit energy consumption index can be obtained by the following formula:

Per-unit energy consumption index for a year = Per-unit energy consumption for that year/ Per-unit energy consumption in the standard year × 100

Reduction and Recycling of Industrial Waste

Daicel is a participant in the Keidanren Voluntary Action Plan on the Environment for a Recycling-Oriented Society. The Company has already achieved the Plan's target of reducing the amount of industrial waste disposal by landfill by 65% from the fiscal 2000 level by fiscal 2015. In principle, Daicel is therefore working to maintain existing levels and to ensure there is no further deterioration.

The decrease in the amount of industrial waste in fiscal 2011 compared with the previous fiscal year was nominal. In effect, the amount of disposal by landfill increased 500 tons year on year due to the Company's failure to effectively use a portion of industrial waste. In this context, Daicel will continue to place greater emphasis on reducing the amount of disposal by landfill going forward.

Please refer to the following website for details regarding the amounts of industrial waste and disposal by landfill of the Daicel Group.

http://www.daicel.com/csr/library.html

Environmental Management to Prevent Air and Water Pollution

The Daicel Group is working to maintain appropriate environmental management systems to satisfy regulatory requirements defined under the Air Pollution Control Act and the Water Pollution Control Act as well as requirements determined through negotiations with local governments and municipalities.

Please refer to the following website for details of the burden imposed on air and water quality by the Daicel Group in fiscal 2011.

http://www.daicel.com/csr/library.html

New Anaerobic Wastewater Treatment Process

Anaerobic wastewater treatment offers a number of environment-friendly benefits and as such is attracting considerable interest. In addition to lower energy consumption,

the treatment process can produce methane gas that can be used as a fuel. In this sense, anaerobic wastewater treatment is considered an energy-creating process.

In contrast, the anaerobic wastewater treatment is difficult to apply to wastewater that contains sulfate. For this reason, it has seen little acceptance or use. Working with Tohoku University. Daicel is conducting research into a new anaerobic wastewater treatment process that remains unaffected by the presence of sulfate. This research is expected to significantly contribute to the realization of a low-carbon society and has been adopted by the Japan Science and Technology Agency for use in its Advanced Low Carbon Technology Research and

Development Program.

topic

Ichiro Nakate Daicel Corporation, R&D Management Corporate Research Center Chemical Process Development Group Senior Researche







Amount of Industrial Waste Generated and Recycling Rate





SOx Emissions

COD Emissions



Occupational Health and Safety

The number of labor accidents with/without lost workdays for all workplaces increased by three compared with fiscal 2010 to 15 incidents. The labor accident frequency rate was 1.64 in fiscal 2011 (JCIA average: 1.78).

At all of its workplaces, Daicel is promoting various activities to upgrade the foundation of production sites-the base of new value creation. These include 3S activities, crisis-identification activities, hazard prediction activities and operational training programs at the Operation Training Center. In order to foster a culture that emphasizes workplace safety, the Company commenced a series of new education programs for staff serving as instructors (assistant managers though to general managers) in fiscal 2011. Also, the Company is implementing various measures to prevent the occurrence of labor accidents and the recurrence of similar accidents at all of its workplaces through the Safety Alert Database, which is used by both management and employees.

Thanks to these measures, Daicel reported a labor accident frequency rate of 1.64 in fiscal 2011 maintaining a level in excess of the Japan Chemical Industry Association (JCIA) average. The number of labor accidents, on the other hand, increased by three compared with the previous fiscal year with six incidents of accidents attributable to an unsafe action such as a fall.

In fiscal 2012, Daicel is committed to further upgrading and expanding its safety measures. In addition to bolstering its hazard prediction analysis for both minor and major accidents, the Company will work to reduce the



External Recognition

Ohtake Plant Receives Class 3 Accident-Free Record Certification

Achieved 12 Million Consecutive Accident-Free Hours on June 20, 2011 This achievement reflects the Plant's daily efforts to consistently promote safety activities over a period of approximately 19 years. Moving forward, the Plant will continue to place 3S activities at the heart of its workplace safety endeavors. While

heightening the awareness of each individual, every effort will be made to promote a continuous unified safety first approach.



Other Group companies reported a decrease in the number of labor accidents with/without lost workdays compared with the previous fiscal year due to various activities to upgrade the foundation of production sites including 3S and hazard prediction activities.

Looking ahead, the Daicel Group will continue to promote 3S, hazard prediction and other activities to upgrade the foundation of production sites.

Please refer to the following website for information on occupational health and safety at the Daicel Group.

http://www.daicel.com/csr/library.html



Accident Frequency Rate at Daicel (includ- Accident Frequency Rate at Daicel)

Other Group Companies



Harima Plant Receives Class 1 Accident-Free **Record Certification**

Achieved 4.4 Million Consecutive Accident-Free Hours on September 16, 2011

Far from resting on its laurels, the Daicel Group will continue to engage in 3S activities, taking particular care to ensure the early detection of any changes At its Harima Plant the Group will endeavor to raise awareness in an effort to secure a workforce that is attuned to identifying potential risks that can cause accidents.

Adopting a policy under which risks are analyzed and the appropriate action taken, every effort will be made to ensure that the Plant's accident-free record is extended. Moving forward, the Harima Plant will strive to become a model to follow for manufacturing plants in Japan and overseas.

Hazard prediction: Near-accident and near-trouble events are recorded to identify the causes of these events. Hazard prediction activities help eliminate causes of accidents and troubles to create safer working environments. Accident frequency rate: A safety index to show the labor accident occurrence rate calculated with the following formula:

Accident frequency rate = Number of people involved in labor accident/Number of total extra working hours (unit: millions of hours)

Accident-free certification: A certification system implemented by Japan's Health, Labour and Welfare Ministry with the aim of preventing labor accidents. Comprised of five classes, this system identifies the number of working hours required for achievement by industry and the number of employees

Process Safety and Disaster Prevention

Continued Achievement: Zero accidents involving fire or explosion

Carrying on from the previous fiscal year, Daicel again achieved zero fire and explosion accidents in fiscal 2011. This reflects the Company's efforts to promote a variety of initiatives including a total EHS assessment system, general operability studies and a full review of potential risks all with the aim of promoting stable plant operations and reducing plant troubles and risks.

In accordance with annual plans, each place of business works in unison with the Company's head office to conduct regular emergency drills. These drills are designed to ensure that all employees are well versed in lifesaving as well as fire extinguishing procedures in the event of an emergency, are capable of minimizing any impact on neighboring areas, and consistently engage in appropriate disaster-prevention activities.

Drawing on the lessons of the Great East Japan Earthquake, the Daicel Group commenced steps to clarify all issues and countermeasures relating to large-scale earthquake, tsunami, liquefaction and other disasters. At the same time, procedures were launched to review the Group's disaster structure and systems, and to undertake a seismic analysis of all buildings and facilities with steps taken to reinforce the Group's property portfolio as required. Complementing each of these measures, the Daicel Group promoted the introduction of an earthquake early warning system as well as an emergency call system to assist in confirming the safety of employees and their families.

Distribution Safety

We are continuing activities aimed at reducing logistics-related troubles while working aggressively to reduce CO₂ emissions in logistics operations.

Daicel Logistics Service Co., Ltd., which is responsible for the distribution function for the Daicel Group, has put in place a basic philosophy that emphasizes efforts to garner the trust and confidence of society by providing services that fulfill the needs of its customers anywhere and at any time. Guided by this philosophy, the company works diligently to enhance transportation quality and safety. In fiscal 2011, Daicel Logistics Service was successful in reducing the number erroneous shipments and deliveries. Working together with partner companies, this favorable result was attributable to efforts aimed at preventing any recurrence of error or trouble, with education and training programs implemented using specific examples. Supplementing these endeavors Daicel Logistics Service also set up meetings and committees to address such issues as quality assurance and the prevention of product accidents.

In fiscal 2012, basic education on how to appropriately fill tank trucks and



Daicel Logistics Service Co., Ltd. established the Operation Training Center in Amagasaki City, Hyogo Prefecture in July 2011. This Center is designed to enhance the awareness of individual

ensure that all appropriate action is taken to prevent

such activities as loading and unloading as well as cleaning and drying commenced in October 2011.



General operability studies: Daicel's proprietary method of codifying the advanced skills of veteran operators from safety, stability, quality and cost perspectives and standardizing procedures to be used in the What event plant operations change. Upon identification of irregular plant operations, decision-making processes are codified at each stage, from identifying possible causes to minimizing the impact of the event. Modal shift: The shift from truck-based goods transportation to more environmentally friendly marine and railway transportation



General Manager, Ohtake Plant

General Manager, Harima Plant

Motoshi Ishikura

What

employees toward safety and to injury or incident Basic training in the structure of tank trucks and

In fiscal 2012, the Daicel Group will continue to implement each of the aforementioned measures. Taking into consideration the reports of the Central Disaster Prevention Council, the Group will coordinate closely with regional governments in the implementation of disaster prevention plans.



Expressing the Group's Condolences on the First Anniversary of the Great East Japan Earthquake

In conjunction with ceremonies to mark the first anniversary of the Great East Japan Earthquake on March 11, 2012 (Sunday), all flags at

Daicel Group properties were flown at half-mast with employees observing a moment of silence. In addition to again expressing its deep condolences to all those who lost the lives of a loved one, the Daicel Group renewed its commitment to assist in the early and complete restoration of affected areas and the return to a normal lifestyle for all affected individuals



Conducting Earthquake Early Warning Drills

To further heighten awareness toward the importance of disaster prevention, December 1 has been designated as earthquake early warning day. In conjunction with the ringing of sirens, drills were conducted to ensure that all employees quickly adopted the necessary safety stance and responded with the appropriate action.

to prevent forklift trouble will be conducted at the Operation Training Center established in fiscal 2011. Working with partner companies, Daicel Logistics Service will also continue to promote measures aimed at preventing any recurrence of distribution trouble and error.

The Daicel Group reported slight improvements compared with the previous fiscal year in both the amounts of per-unit CO₂ emissions and energy consumption with respect to its distribution activities.



Chemical and Product Safety

Reduction of VOC Emissions

In fiscal 2011, Daicel continued to promote improvements in processes that use such mainstay VOC substances as acetone and toluene. As a result, Daicel achieved the VOC reduction target of 30% from fiscal 2000 levels set by the Japan Chemical Industry Association (JCIA).

In the future, Daicel will redouble its efforts to achieve the medium-term emission reduction target of 40% from fiscal 2000 levels in fiscal 2013.

Management of PRTR Substances' Emissions and Transfers and Reduction of Their Emissions

Daicel reduced its PRTR substance emissions by 28 tons compared with the previous fiscal year (32% from fiscal 2011 levels) due mainly to improvements in usage rates. The Company will continue to reduce the amounts of emissions and transfers to achieve its medium-term target of 40% from fiscal 2001 levels.

Please refer to the following website for details regarding the Group's PRTR substance emissions and other chemical and product safety information.



PRTR Substance Emissions



http://www.daicel.com/csr/library.html

Quality Assurance

All of Daicel's plants have acquired ISO9001 certification, a set of international standards for quality management systems. Each plant constantly works to offer products that satisfy customers and meet their needs. Each internal company is responsible for the quality of their products. Relevant officials from plants and corporate departments attend regular guality assurance meetings held at each internal company to share information, including customer requests. Moreover each internal company works closely with Daicel's headquarters and plants to leverage the Group's quality management system and thus ensure the maintenance and improvement of product quality across the Group.

Furthermore, in pursuit of safer and more user-friendly products, we are addressing the issue of acquiring certifications of quality management standards as well as meeting the legal requirements in each field for the following product lineups:

- Airbag inflators: Acquired ISO/TS 16949 certification
- (quality management system standards for the automobile industry) Special machinery products: Acquired JISQ 9100 certification
- (quality management system standards for the aerospace industry)
- Medical and pharmaceutical products: Implementing production and guality control under an organization and administration standard based on Good Manufacturing Practice (GMP) rules for the manufacturing, management and quality control of pharmaceutical products

Status of ISO9001 Acquisition

Plant/Group Company	Certificate No.	Certificate/Edition	Expiration
	Certificate No.	Certificate/Eurtion	схриацон
Daicel Aboshi Plant, Himeji Production Sector	JQA-0953	ISO9001:2008	2012.9.18
Daicel Ohtake Plant	JQA-1023	ISO9001:2008	2013.10.26
Daicel Arai Plant	JCQA-0136	ISO9001:2008	2014.6.2
Daicel Aerospace & Defense Systems Division, Aerospace & Defense System/ Safety Systems Company	BSK0027 BSKA0028	JISQ9100:2004 JISQ9001:2008	2014.4.14
Daicel MSD Division, Aerospace & Defense Systems/Safety Systems Company	JQA-2448	ISO9001:2008	2013.4.22
Daicel Safety Systems Inc.	JQA-AU0033	ISO/TS16949:2009	2013.4.15
Hirohata Plant, Daicel Polymer Ltd.	JQA-QM4647	ISO9001:2008	2013.2.26
Polyplastics Co., Ltd.	JQA-1283 JQA-AU0071	ISO9001:2008 ISO/TS16949:2009	2012.12.25 2012.12.10
Kanzaki Plant, Daicel Value Coating Ltd.	JCQA-0530	ISO9001:2008	2014.8.1
Aboshi Plant, Daicel-Evonik Ltd.	JQA-2481	ISO9001:2008	2013.8.5
Daicel Pack Systems Inc.	JQA-QMA-11465	ISO9001:2008	2013.7.1
Nagano Plant, DM Novafoam, Ltd.	ASR-Q1169 (E-0309)	ISO9001:2008	2014.7.07
Okayama Plant, DM Novafoam, Ltd.	ASR-Q1170 (E-0310)	ISO9001:2008	2013.6.24
Aboshi Plant, Daicen Membrane-Systems Ltd.	JQA-1577	ISO9001:2008	2014.2.6
Dainichi Chemical Corp.	JCQA-0689	ISO9001:2008	2015.4.16
Daicel Logistics Service Co., Ltd.	JCQA-0568	ISO9001:2008	2014.10.17
Japan Shotshell Ltd.	JQA-QMA13973	ISO9001:2008	2012.8.20

Pollutant Release and Transfer Register (PRTR): A system to calculate the extent to which the production, use, and storage of specific chemical substances results in the release and transfer of those substances What into the environment

Opinions of Third Parties



■検証の目的

本検証は、株式会社ダイセルが作成した「ダイセルグループ CSR 報告書2012」(以後、報告書と略す)を 対象として、下記の事項について、化学業界の専門家としての意見を表明することを目的としています。 1) パフォーマンス指標(数値)の算出・集計方法の合理性及び数値の正確性 2) 数値以外の記載情報の正確性 3) レスポンシブル・ケア活動及び CSR 活動 4) 報告書の特徴

■検証の手順

者に質問すること、及びそれぞれの責任者より資料提示と説明を受けることにより行いました。 ・サイトにおいて、本社に報告する数値の算出方法の合理性、数値の正確性及び数値以外の記載情報の正確 び説明を受けること、並びに証拠物件と照合することにより行いました。 ・数値及び記載情報の調査についてはサンプリング手法を適用しました。

■意見

- 1) パフォーマンス指標(数値)の算出・集計方法の合理性及び数値の正確性について ・数値の算出・集計方法は、本社及び網干工場において合理的な方法を採用しています。 ・調査した範囲では数値は正確に算出・集計されています。 2) 記載情報の正確性について
- やすさについて若干の指摘をしましたが、現報告書では指摘事項は修正されています。 3) レスポンシブル・ケア活動及び CSR 活動について
- 企業倫理普及に注力されている点を評価します。 ・網干工場に於いて、活性汚泥の肥料化、沈降綿の減容化等、廃棄物の最終埋立量削減に努力されている 点を評価します。
- 4) 報告書の特徴について
- ・前年度の指摘事項を踏まえ、数値集計方法を着実に改善されている点を評価します。
- ・人事・労務に関する詳しい情報をまとめて掲載されているのは、貴社への就職を考えている人にとって ありがたい工夫と評価します。一方、経済的側面からの情報掲載が少ない気がします。
- 工夫されることを期待します。
- ます。

2012年5月28日

一般社団法人 日本化学工業協会 レスポンシブル・ケア検証センター長 高顆純治

・本社において、各サイト(事業所、工場)から報告される数値の集計方法の合理性、及び数値以外の記載情報 の正確性について調査を行いました。調査は、報告書の内容について各業務責任者及び報告書作成責任

性の調査を行いました。サイトの調査は、各業務責任者及び報告書作成責任者への質問とその資料提示及

・報告書に記載された情報は、正確であることを確認しました。原案段階では表現の適切性、文章のわかり

・グループ企業に対して、その企業の実情に応じたテキストを作成し、きめ細かく企業倫理研修を実施する等、

・基本理念とCSRの説明図、ヘルスケア活動の説明図等に於いて、わかりやすさが改善されている点を評価 します。今後、基本理念と長期ビジョン、CSRとレスポンシブル・ケアの関係についても、わかりやすい図を

・今年度の編集トピックスであるダイセルエンゲージメントは、現場の臨場感が良く伝わり、良い企画と評価し

以上