Color & Comfort by Chemistry

DIC REPORT 2015

The DIC Group's Corporate Profile & Sustainability Report

DIC Corporation

Complete Version

Basic Management Approach

In February 2008, DIC celebrated its centennial anniversary. Taking advantage of the opportunity provided by this milestone, the Company changed its official name to "DIC Corporation" and introduced a new corporate symbol. Prior to embarking on its second century in business, DIC adopted "The DIC WAY," an articulation of its new management approach, for the entire DIC Group.

The DIC WAY comprises three elements, namely, DIC's "management vision," "corporate values" and "principles of conduct." These three elements are supported by "The DIC SPIRIT."

The DIC WAY

MANAGEMENT VISION

Color & Comfort by Chemistry

CORPORATE VALUES

Through unceasing innovation, the DIC Group strives to create new value directed at sustainable development for its customers, society and the environment.

PRINCIPLES OF CONDUCT

- We shall hone our sensitivity to changes in society and be aware of our mission to always be ahead of the times.
- We pledge to incorporate the concepts of social and environmental sustainability into our corporate activities.
- We vow to strive constantly to hone "The DIC SPIRIT."
- We shall respect the autonomy and initiative of each individual employee in applying his or her talents to the pursuit of our values and the realization of our vision.

Color & Comfort by Chemistry

Established in 1908 as a manufacturer of printing inks, DIC has expanded its mainstay organic pigments and synthetic resins businesses while at the same time cultivating world-class related core technologies. Since then, DIC has leveraged these technologies to build a broad portfolio encompassing materials and finished products. This has enabled the Company to respond to market needs by providing customers in the automotive, electronics, food packaging, housing and other industries with solutions that bring "color" and "comfort" to people's lives.

Looking ahead, DIC—today a multinational organization with operations in more than 60 countries and territories—will redouble its efforts to contribute to environmental protection and to the realization of a safe and sustainable society.

Connecting the DIC Group and its Stakeholders

DIC Group Communications Tools

The DIC Group uses a variety of tools to promote communication with its many stakeholders to encourage greater awareness of the Group's activities. More detailed sustainability-related information and data can be found on the DIC website.

Printed/PDF-Form Publications

Reports on activities

DIC Report (summary version)

Report on sustainability initiatives and corporate profile (published annually)

(Printed report)

DIC Report (complete version)

Report on sustainability initiatives and corporate profile (published annually)

(PDF-form report)

Annual Report

Report on operations and financial condition

(PDF-form report)

DIC Website

Real-time information

DIC Global Website

http://www.dic-global.com/en/csr/

Umbrella website providing information to the global public about the DIC Group and reports on its various activities; updated as necessary

About this Report

The DIC Group publishes a combined corporate profile and sustainability report with the aim of presenting a clear, easy-to-understand picture of the Group and its sustainability initiatives. For fiscal year 2015, the Group published a simplified summary version (printed), which focuses on key highlights, and a more detailed complete version (PDF), which contains extensive quantitative data.

DIC Report (Complete version) (PDF-form report)

http://www.dic-global.com/en/csr/annual/

Note: The designation "Asia–Pacific region" as used in this report refers to Asia—excluding Japan and Greater China—and Oceania.

Links with the DIC Website

The ( ) mark indicates that more detailed information and/or data can be found on the indicated page of the DIC website.

DIC website http://www.dic-global.com/en/

Scope of Reporting

In principle, this report provides information on DIC Corporation and consolidated DIC Group companies in Japan and overseas. For information on the scope of reporting for ESH-related initiatives, please visit the pertinent page of the DIC website.

http://www.dic-global.com/en/csr/pdf/dic_report_scope_en_2015.pdf

Reporting Period

Fiscal year 2014 (January 1–December 31, 2014)

Date of Publication

June 2015 (The next report is scheduled for publication in June 2016.)

Guidelines Referenced

Guidelines referenced in the preparation of this report were ISO 26000, the International Organization for Standardization's standard for social responsibility, released in 2010, and Japan's Responsible Care Code.

Contents

Cover Design

The cover of this year's DIC Report is a paper craft artwork evoking the contributions DIC products make to comfortable, vibrant communities. The design also alludes to the idea of the DIC Group's business activities providing attractive, exciting products to customers around the world and driving growth.

A Message from the President

Representative Director,
President and CEO
DIC Corporation

Yoshiyuki Nakanishi

We continue working to address challenges with the goal of creating value through our business activities and achieving sustainable growth for the DIC Group.

A Global Fine Chemicals Manufacturer

The DIC Group is a multinational organization comprising 176 companies in 63 countries and territories. In fiscal year 2013, we embarked on our current medium-term management plan, DIC105, which will guide our efforts through fiscal year 2015. Operating in a dynamic global economic and business environment, we continue to promote development and innovation with the aim of ensuring our products, services and technologies align with the needs of stakeholders and meet their expectations.

We continue working actively to address challenges to create new products and businesses that are ahead of the curve. At the same time, we remain dedicated to guaranteeing the safety of our operations, contributing to protection of the environment, adhering to a strict code of ethics and effectively managing risks, enabling us to fulfill our responsibilities to society as a global fine chemicals manufacturer.

DIC105: Year 2 in Review

In line with our medium-term management plan, we continue to focus our allocation of management resources on key business domains with the ultimate goal of securing sustainable growth.

DIC105 calls for the expansion of three key forward-looking businesses that will drive growth in the years ahead—thin-film transistor liquid crystals (TFT LCs), pigments for color filters and polyphenylene sulfide (PPS) products. In fiscal year 2014, sales of TFT LCs*1 were hampered by delays in obtaining customer qualification. In contrast, sales of both green and blue pigments for color filters rose briskly, while sales of PPS products increased favorably, bolstered by successful efforts to respond to rising demand, particularly for automotive applications. In this environment, consolidated net sales advanced 5.9% from fiscal year 2013, to ¥830.1 billion. Despite higher sales, operating income declined 6.9%, to ¥41.1 billion, well below our target of ¥50.0 billion for the period, owing to a number of factors, including an increase in Japan's consumption tax and a delay in raising sales prices to reflect increases in raw materials and fuel prices. In contrast, our debt-to-capital ratio*2 as of December 31, 2014, was 49.8%, as we essentially achieved our

target for fiscal year 2018 (50%) a full four years ahead of schedule. During the period, we proceeded with efforts to restructure our North American and European printing inks businesses—one of the central strategies of DIC105—in line with a roadmap formulated to guide related measures, which include the closure of certain facilities and the shift of production to other regions. We also continued to invest actively to reinforce our operating foundation in promising Southeast Asian markets, notably India, thereby laying the groundwork for the future expansion of our operations.

Pressing Ahead with Decisive Efforts

In my view, the most important prerequisite to success in the years ahead will be ensuring the commitment of all DIC Group employees to working as one to implement the strategies we have set, mindful always of the importance of acting decisively. We are thus promoting the creation of a platform to facilitate the appropriate allocation of management resources. As part of this effort, in fiscal year 2014 we established printing inks technical centers in Thailand and the People's Republic of China (PRC) as well as a PPS technical center in the PRC, while early in fiscal year 2015 we opened a polymer technical center in Thailand, which will oversee and direct technical aspects of these respective businesses in the Asia–Pacific region. These new facilities position us to further drive technological development that responds to local market requirements rather than depending on technologies transferred from Japan, thereby expediting commercialization.

We also continue to advance R&D that emphasizes fostering next-generation businesses, with efforts focusing on such areas as gas barrier materials for packaging applications, printed electronics*3 materials, cellulose nanofibers, organic–inorganic hybrid materials and heat-dissipating materials. Going forward, the DIC Group pledges to work as one to press ahead with decisive measures aimed at resolving social imperatives related to, among others, safety and reliability, the environment, resource conservation and the increasingly important role of information, and at providing products and services that respond to society's evolving needs, thereby enabling us to act as a positive force in society.

The DIC Group's Approach to Sustainability

Having acknowledged the need to pursue sustainable growth in a manner that contributes to sustainability for the global environment and society, as well as ensures our own sustainable growth, in January 2014 we changed the designation we use across our program from "CSR" to "sustainability." We also established a global configuration that classifies our initiatives into four regional groupings: Japan, the Americas and Europe, Greater China—which for DIC encompasses the PRC, the special administrative region of Hong Kong and Taiwan—and the Asia–Pacific region. To enhance our ability to effectively manage risks with the potential to hinder our sustainability, we have declared 10 DIC Group sustainability themes and set theme-specific medium-term targets.

As a manufacturer of fine chemicals with operations around the world, we have a particular responsibility toward operational safety. Accordingly, we work tirelessly to reinforce our safety infrastructure while maintaining a Groupwide awareness of safety-related issues. As we strive to accelerate the global expansion of our operations, we also acknowledge the importance of fostering human resources with the skills to excel on a global stage and of valuing the diversity of our labor force. To this end, we are creating a comprehensive human resources database. We are also promoting measures designed to cultivate a new generation of employees with leadership capabilities and encouraging initiatives such as our Global Challenge Program, which focuses on helping younger employees gain a better understanding of other cultures. In addition, we are taking decisive steps toward the creation of a framework for ensuring environmental soundness and effective governance across our entire global supply chain.

Targeting Sustainable Growth

The DIC Group provides a wide variety of products that meet the needs of manufacturers in industries ranging from electronics to materials used in everyday life and the expectations of society. To facilitate the swift expansion and evolution of our businesses, we will continue to take bold steps to optimize all aspects of our operations from a global perspective. In these and all our efforts, we look forward to the ongoing support and guidance of our stakeholders.

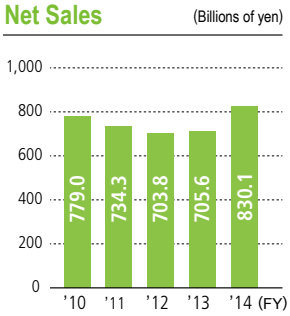
(Left) Opening ceremony for DIC Zhangjiagang Chemicals Co., Ltd.'s second production facility
(Right) DIC's booth at Eco-Products 2014 in Tokyo

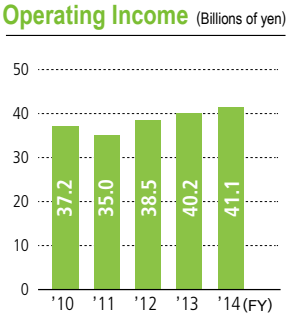
*1 For more information on DIC's TFT LCs, see page 13.
*2 Debt-to-equity ratio is calculated as Interest-bearing debt / (Interest-bearing debt + Total net assets).
*3 As a next-generation production process for electronic circuits that employs printing technologies, printed electronics continues to attract attention for, among others, its suitability for mass production, ability to reduce fabrication costs and solid environmental credentials.

The DIC Group: A Global Powerhouse

Corporate Data

Registered name:	DIC Corporation
Corporate headquarters:	DIC Building, 7-20, Nihonbashi 3-chome, Chuo-ku, Tokyo 103-8233, Japan
Date of foundation:	February 15, 1908
Date of incorporation:	March 15, 1937
Paid-in capital:	¥96.6 billion
Number of employees:	20,411 (Nonconsolidated: 3,542)
Number of subsidiaries and affiliates:	176 (Domestic: 32, Overseas: 144)

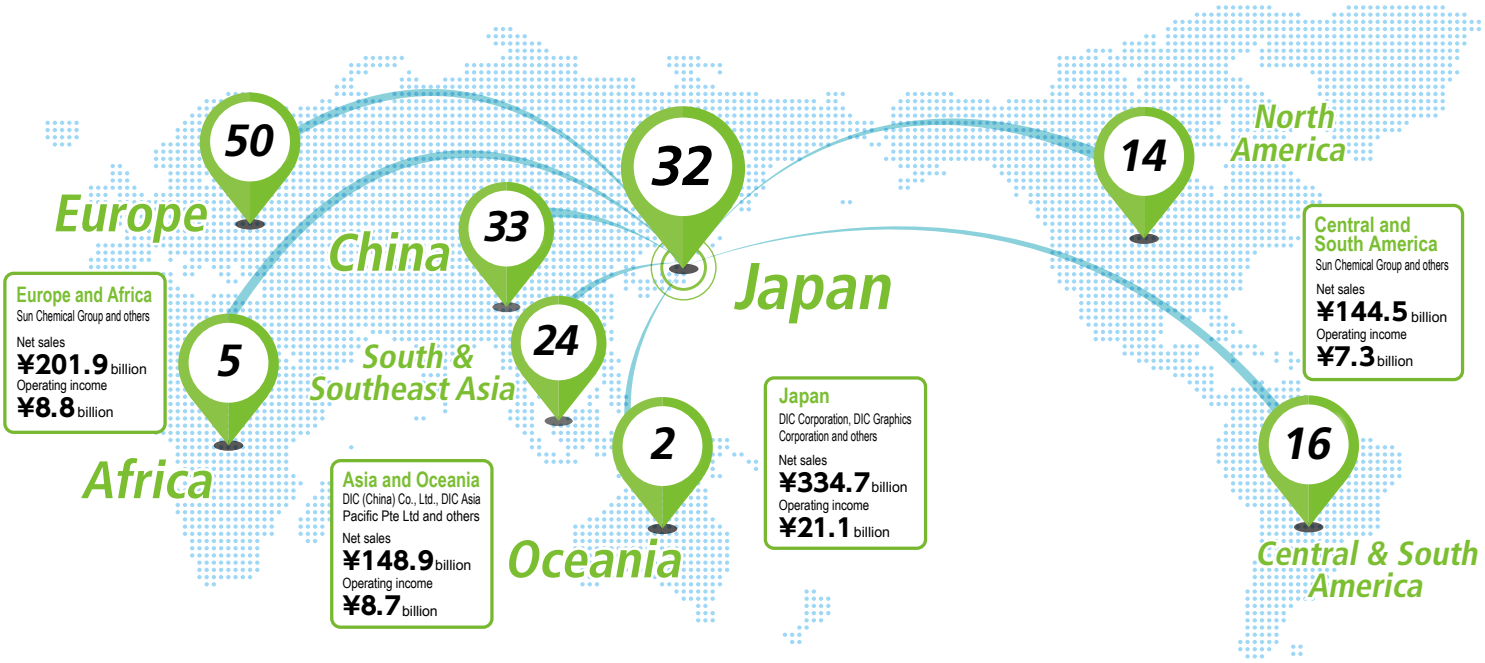




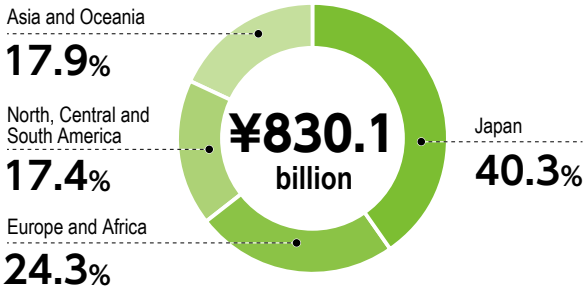
Note: The consolidated results for fiscal year 2013 comprise the accounts for the nine months ended December 31, 2013, of DIC and its domestic subsidiaries but one and the 12 months ended December 31, 2013, of its overseas subsidiaries and one domestic subsidiary.

Global Network

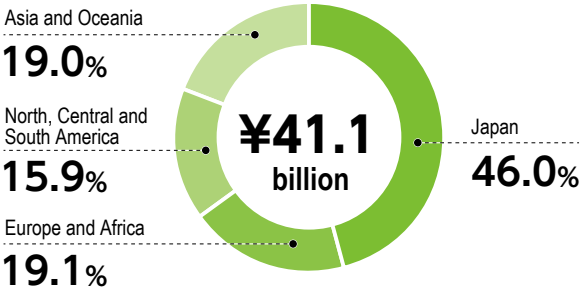
DIC has 176 subsidiaries in 63 countries and territories around the world.



Breakdown of Net Sales by Region



Breakdown of Operating Income by Region



Note: Operating income as used here includes eliminations (approximately ¥3.5 billion). Accordingly, these percentages do not represent shares of reported operating income.

Reportable Segments

The DIC Group has leveraged its distinctive organic pigments and synthetic resins, essential to the manufacture of printing inks, to build an extensive business portfolio.

Printing Inks ▸ Page 12

Net sales: ¥415.7 billion Operating income: ¥17.3 billion

Fine Chemicals ▸ Page 13

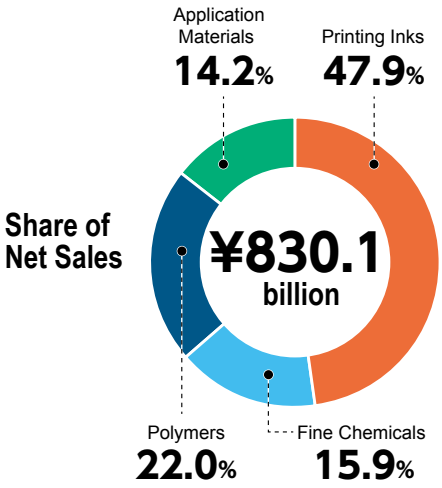
Net sales: ¥138.3 billion Operating income: ¥13.8 billion

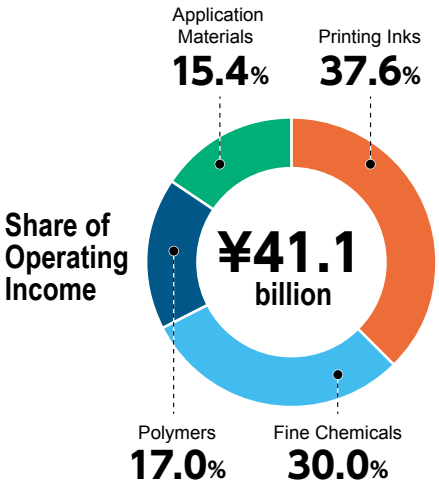
Polymers ▸ Page 14

Net sales: ¥190.8 billion Operating income: ¥7.8 billion

Application Materials ▸ Page 15

Net sales: ¥123.0 billion Operating income: ¥7.1 billion





Note: The aggregates of net sales and operating income by region on page 5 and above do not correspond to reported net sales and operating income, as the former include income not attributable to reportable segments and eliminations.

Principal Global R&D Sites

St. Mary Cray Technical Centre (United Kingdom)

Qingdao DIC Finechemicals (PRC)

Cincinnati (United States)

Central Research Laboratories (Japan)

Polymer Technical Center—Asia Pacific (Thailand)

Printing Inks Technical Center—Asia Pacific (Thailand)

Carlstadt (United States)

Eurolab (Germany)

Sun Chemical's sustainability efforts are based on the concept of eco-efficiency as defined by the World Business Council for Sustainable Development: "the delivery of economically competitive goods and services that satisfy customers' needs and bring quality of life, while progressively reducing ecological impact and resource intensity throughout the life cycle." In 2015, we will make further progress toward this goal, with the following key initiatives:

- a rigorous development process and analytical tools that guide our choice of materials and the safety of our products
- manufacturing processes that demonstrate environmental excellence through reduced waste generation, lower energy and water usage, and strong safety performance
- meeting local regulatory requirements, working proactively with government, industry trade groups, and business partners in the value chain to better define, measure, and promote sustainability, product stewardship*, and risk management.

We are committed to meeting our customers' needs, while never losing sight of the business essentials: reliable, on-time delivery, consistent product quality, dependable service and groundbreaking innovation.

Sun Chemical's Pledge: As the world's leading producer of inks, pigments and coatings, we will lead our industry by understanding and minimizing the life cycle footprint of our products' impact on the environment.

* Product stewardship is a philosophy that emphasizes reducing the environmental impact of products over their entire life cycle.

We will make further progress toward eco-efficiency to realize sustainability.

Sun Chemical Corporation

President and Chief Executive Officer

Rudi Lenz

Holding company DIC Asia Pacific Pte Ltd was established in October 2001 as the regional headquarters for the DIC Group in the Asia–Pacific region*. As of January 2015, we have 73 employees and oversee 17 DIC Group companies. We also function as the front line for the Group's principal product segments in the region.

The DIC Group has production bases in six Association of Southeast Asian Nations (ASEAN) member countries: Indonesia, Singapore, Thailand, the Philippines, Vietnam and Malaysia. The fastest-growing of these is our base in Indonesia, which employs more than 1,000 local individuals and pays special attention to conducting its operations in a manner that ensures harmony with local society.

Against a backdrop of rapid market change, major brand owners are accelerating purchases of environment-friendly products for use in packaging for food and household goods in response to heightened consumer awareness of environmental issues in this area. In response, we are taking decisive steps to cultivate markets for such products, particularly environment-friendly toluene- and methyl ethyl ketone-free gravure inks for use on flexible packaging, offset inks for use on paper containers, and water-based inks for use on cardboard cartons.

A key area of focus is environment-friendly PPS compounds, which play a key role in reducing vehicle weight. Having positioned Malaysia as a principal production base for PPS compounds, we are actively expanding our presence in four strategically important regional markets, namely, Thailand, Malaysia, Indonesia and India.

Looking ahead, we will seek to expand our presence in increasingly relevant, promising markets and business areas by reinforcing our operating configuration in South Asia. To enhance the profitability of our chemicals business in India and promote the expansion of our operations elsewhere in the area, including Pakistan and Sri Lanka, we established a regional representative office, which is headed by an executive officer on assignment. Asia and Oceania currently accounts for approximately 15% of the DIC Group's earnings from its businesses. We will step up efforts to respond to the needs of our customers in key markets with the aim of further increasing this percentage and of growing together with the communities in which we operate.

* Asia—excluding Japan and Greater China—and Oceania

We are taking decisive steps to cultivate markets for environment-friendly products.

DIC Asia Pacific Pte Ltd

Managing Director
Kazunari Sakai

With a population that makes it one of the world's largest markets, the PRC remains highly promising, evidenced by its 7% target for gross domestic product (GDP) growth in the current fiscal year. With the aim of capitalizing on colossal demand in this market, we are taking decisive steps to revamp the DIC Group's existing local production and sales networks, as well as to introduce new technologies. Through such efforts, the management and staff of DIC Group companies in the PRC are committed to making a positive contribution to boosting the Group's overall operating performance.

In fiscal year 2015, DIC Group companies in Greater China also formulated sustainability activity plans, in line with which we are promoting a variety of related initiatives. As a manufacturer of fine chemicals, DIC recognizes that its highest priorities in this region must always be the environment, safety, health and quality. In recent years, authorities in the PRC have cracked down on violations of the country's Environmental Protection Law, and at this year's National People's Congress the government pledged to toughen environmental measures. The PRC has often been accused of complacency when it comes to environmental issues, but as can be seen from the hard line it has taken against air pollution caused by high levels of PM2.5 airborne particulates—a major issue for the entire country—it is expected to tighten regulations substantially in the years ahead. To ensure its continued growth and prosperity in the PRC, the DIC Group must of course abide by local laws, but more than that it must establish its reputation as an environment-friendly organization.

In 2014, regulators in the PRC fined a number of companies in the country, primarily multinationals, as punishment for violating antitrust laws. These and other incidents have highlighted the importance of our ongoing efforts to enhance understanding of compliance and build awareness within the Group.

Growing the DIC Group's businesses in the PRC also depends on promoting efforts to ascertain market needs and to cultivate promising markets in line with two key Group sustainability themes, namely, Business Models that Respond to Social Imperatives and New Technology Development and Value Creation.

In recent months, the news has brought us numerous stories about Japanese companies withdrawing from the PRC for reasons such as rising personnel costs and unfavorable currency rates. In our case, most of the products we manufacture in the PRC are sold to Chinese companies, including subsidiaries of Japan-based enterprises, so our business model is different from that of companies that are primarily dependent on exports. Looking ahead, we will accelerate the implementation of our global business strategies, which include exploring the investment of management resources to reinforce our ability to market our products to customers in the PRC.

We are working to expand our operations to respond to evolving market requirements.

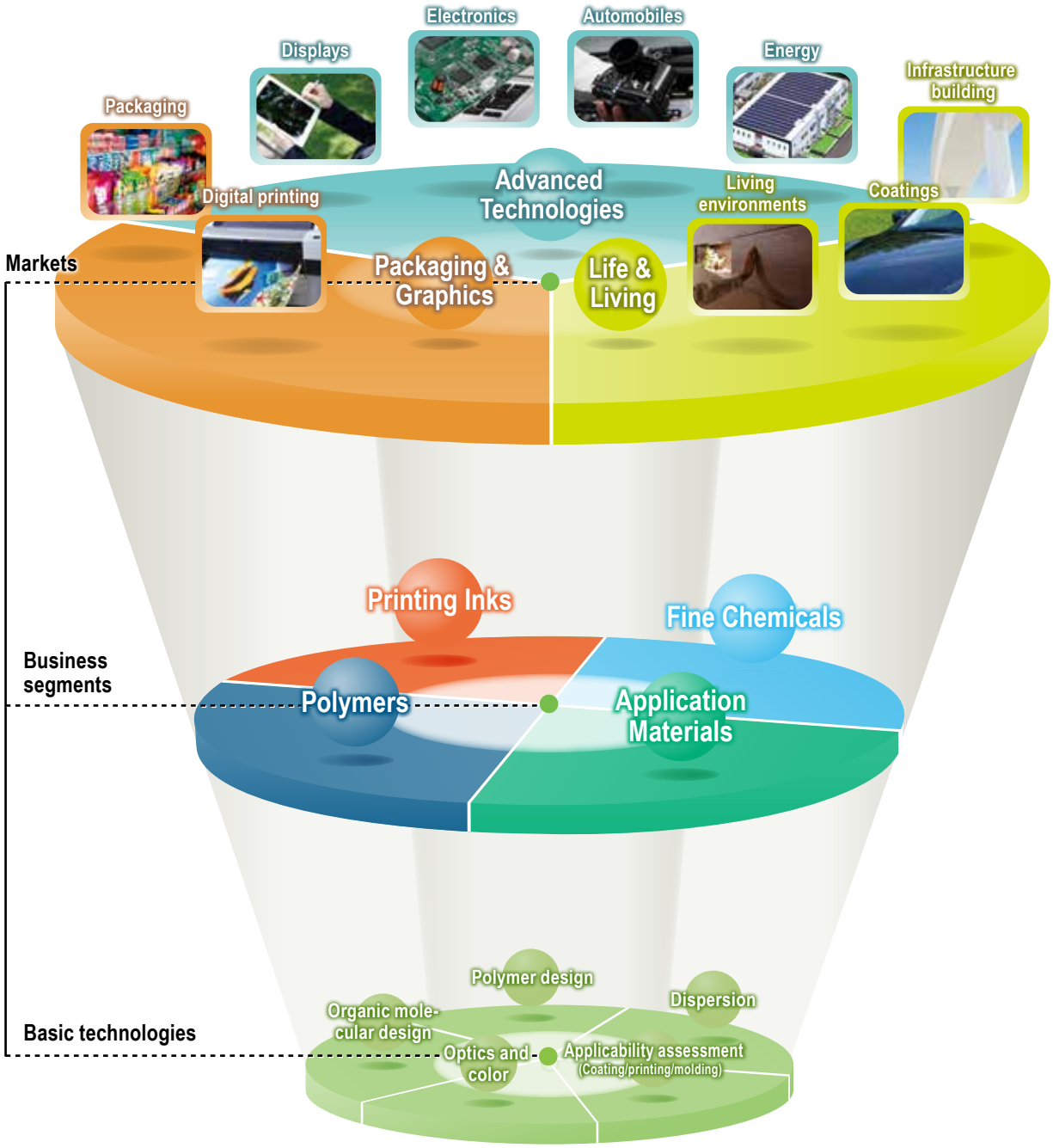
DIC (China) Co., Ltd.

Chairman and General Manager
Hideki Inouchi

An Efficient Corporate Organization that Leverages DIC Group Strengths to Respond Swiftly and Accurately to Evolving Social Imperatives

Target Markets and Business Development

The DIC Group has capitalized on its capabilities in organic pigments and synthetic resins, the principal material for printing inks, to build a broad portfolio. Today, the Group classifies its products in four business segments: Printing Inks, Fine Chemicals, Polymers and Application Materials. Through its Advanced Technology Sales Administrative Div., Life & Living Sales Administrative Div. and Packaging & Graphics Sales Administrative Div.—three sales administrative divisions organized in line with three key market categories—and its affiliated companies, the DIC Group works to provide products that respond to the needs of society and its customers.

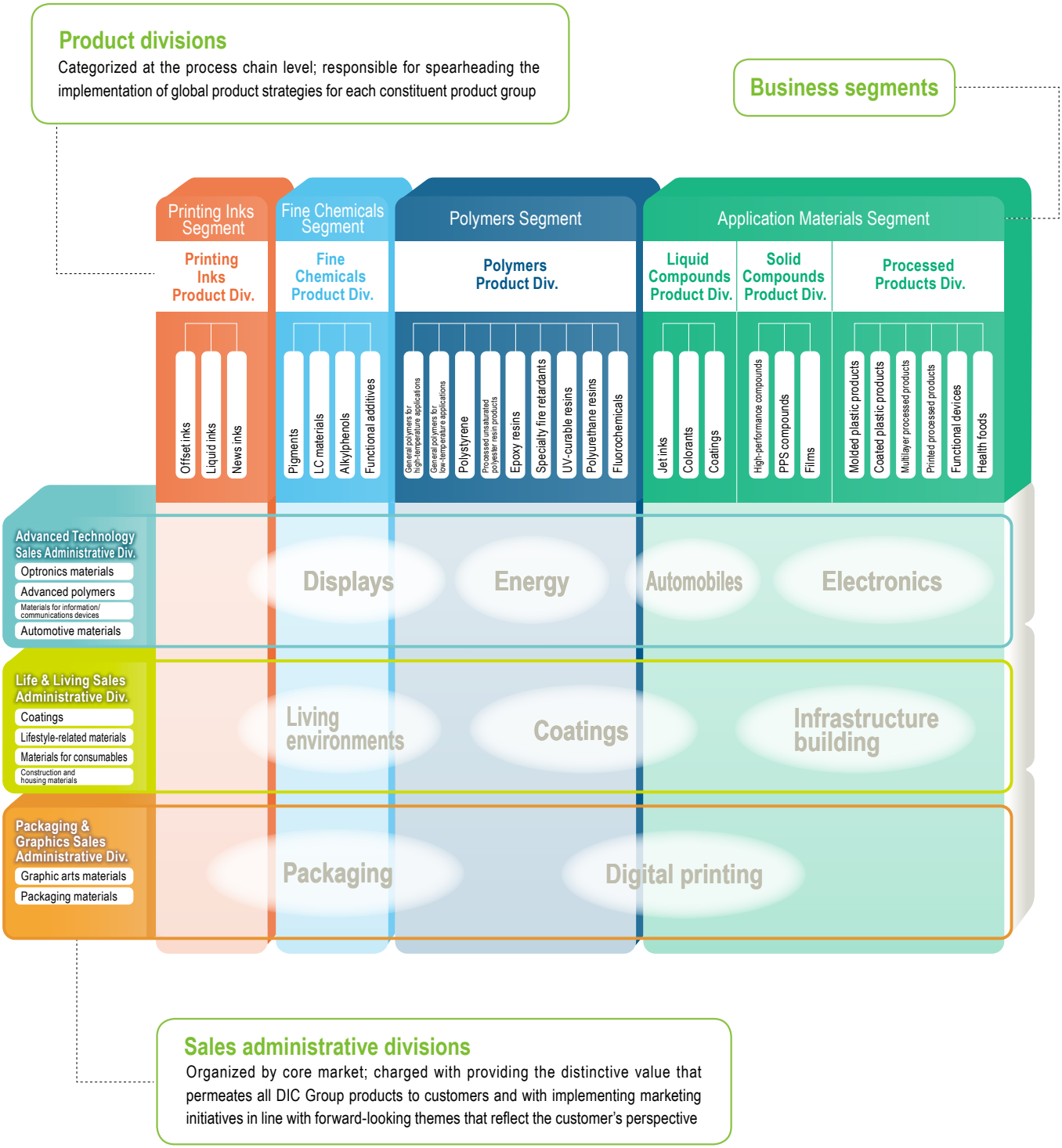


The DIC Group's Basic Technologies

The DIC Group strives constantly to contribute to a materially and spiritually affluent society through the development and provision of environment-friendly technologies and products. To this end, the Group is leveraging its basic technologies in the areas of optics and color, organic molecular design, polymer design, dispersion and applicability assessment to promote the development of products in key target markets.

A Matrix-Like Corporate Organization that Leverages Comprehensive Capabilities

With the aim of facilitating concentrated efforts to grow core products, as well as a shift toward market-focused business development, the DIC Group has created a matrix-like corporate organization. This organization centers on six product divisions, which are responsible for spearheading the implementation of global product strategies, and three market-oriented sales administrative divisions. The DIC Group is confident that this format will enhance agility—enabling it to respond swiftly to evolving social imperatives—and improve the internal sharing of information, thus underpinning efforts to leverage its comprehensive capabilities.



Printing Inks

A stable business since the start

This segment focuses on printing inks, DIC's mainstay business since its establishment.

A global market leader, DIC boasts an extensive product portfolio ranging from publishing inks to inks and adhesives for packaging, enabling it to respond to the needs of customers worldwide.

Printing inks

- Offset inks
- Gravure inks
- Flexo inks
- Can coatings
- News inks
- Packaging adhesives
- Printing supplies

Outstanding color reproduction, reduced energy consumption

***DAICURE HR* series**
(High-sensitivity UV-curable offset inks)

DAICURE HR offset inks contain no volatile organic compounds (VOCs) and facilitate high-speed drying, properties that help improve working environments and workability and that continue to support market expansion. Recent years have seen a sharp increase in the popularity of high-sensitivity ultraviolet (UV)-curable offset inks, which facilitate the use of low-watt or light-emitting diode (LED) lamps in UV curing systems, thereby contributing to the reduction of energy used. As well as suitability for use with low-power UV printers, DIC's innovative *DAICURE HR* high-sensitivity UV-curable offset inks deliver outstanding color reproduction, thus responding to the needs of customers seeking to switch from printing with oil-based inks to UV-curable printing.

Ensuring safety for food and the environment

***FINART* series**
(Gravure inks for food packaging)

In recent years, growing concern for food safety and increased awareness of environmental issues has hastened demand for the reduction or elimination of solvents in food packaging materials. With *FINART*, DIC has developed a series of gravure inks for food packaging that combines consideration for food safety and the environment with the superb image quality and suitability for high-speed printing demanded of gravure inks. In addition to conforming to the Japan Printing Ink Makers Association's voluntary regulations concerning the use of chemical substances in printing inks, these environment-friendly inks, which balance superior safety with excellent printability, also comply with food packaging regulations in Europe.

Fine Chemicals

Optronics materials and other high-value-added products

Products in this segment include a wide variety of materials indispensible to digital devices, including LC materials and organic pigments for color filters, which are expected to drive growth for DIC in the years ahead.

Fine chemicals

- Organic pigments
- Special effect pigments
- LC materials
- Alkylphenols
- Metal carboxylates
- Sulphur chemicals (lubricant additives)

A marked increase in brightness and reduced LCD energy consumption

_G58_ series
(Green pigments for color filters)

In addition to pigments for printing inks and coatings, DIC—the world's leading manufacturer of organic pigments in terms of market share—produces high-performance pigments for color filters used in LCDs. In manufacturing its *G58* series of green pigments for color filters, DIC defied conventional wisdom by using zinc, rather than copper, as the central metal in the chemical composition, thereby achieving a marked increase in brightness.

The highest-grade product in the *G58* series, *FASTOGEN GREEN A310*, is particularly noted for its exceptional brightness and contrast. *FASTOGEN GREEN A310* has been adopted widely for use in LCDs with LED backlights—the dominant format for LCDs used in televisions and smartphones—contributing to improved picture quality and reduced energy consumption.

Responding to the evolution of LCDs

TFT LCs

TFT LCs demand sophisticated expertise in molecular design, as well as advanced technologies for synthesis, mixing and the removal of minute impurities. DIC is one of only a few companies in the world capable of manufacturing TFT LCs. The ability of DIC's TFT LCs to satisfy customers' needs for higher brightness, faster response times and greater long-term reliability is evidenced by the fact that they have been adopted for use by liquid crystal display (LCD) manufacturers worldwide. DIC continues to see sales of these products expand, particularly in the PRC and elsewhere in Asia. In addition to responding to customer needs arising from demand for larger LCD television screens and higher picture quality, DIC is promoting the production of TFT LCs for use in smartphone and tablet computer displays.

Polymers

DIC's second core business

Capitalizing on DIC's world-class technologies and know-how, this segment provides synthetic resins and resin-related products to a wide array of industries.

Polymers

- Acrylic resins
- Alkyd resins
- Amino resins
- Epoxy resins
- Fluorochemicals
- Methacrylate resins
- Phenolic resins
- Plasticizers
- Polyester resins
- Polystyrene
- Polyurethane resins
- Processed sheet molding compounds (SMCs) and bulk molding compounds (BMCs)
- Unsaturated polyester resins
- UV-curable resins
- Waterborne resins

Shielding houses and other structures from rain and air pollution

***CERANATE* series**
(Waterborne hybrid resins for coatings)

Coatings for housing, public structures, iron bridges, roads, automobiles and other objects must provide protection against rain and UV rays, as well as oily or acidic particulates from vehicle and factory emissions. In response, DIC has developed the *CERANATE* series of waterborne hybrid acrylic–polysiloxilane (organic–inorganic) resins, which use nanotechnology to control dispersion. Hybrid molecules fuse together with the evaporation of moisture to form an exceptionally durable coating that boasts superior gloss retention and excellent resistance to oily stains, as well as a self-cleaning capability whereby it uses rainwater to wash off dirt. Demand for *CERANATE* resins continues to rise in emerging economies, where construction is still booming.

Exceptional heat resistance facilitates use in precision instruments

***EPICLON* series**
(Epoxy resins for electronics substrates)

Epoxy resins are UV-curable synthetic resins that cure when combined with curing agents, achieving exceptional moldability, heat resistance, electrical insulating properties and adhesive properties. These resins are used by manufacturers of electronics substrates and in a broad range of other industries.

As Japan's largest manufacturer of epoxy resins, DIC supplies the *EPICLON* series of environment-friendly, high-performance epoxy resins, which combine outstanding heat and flame resistance. Applications for *EPICLON* epoxy resins are diverse and include smartphones and computers.

Application Materials

Key applications of basic technologies

This segment encompasses a diverse range of applied products, including jet inks, engineering plastics and industrial adhesive tapes, which are made possible by the integration of DIC's synthesis, dispersion, coating and molding technologies.

Liquid compounds

- Jet inks
- Fiber and textile colorants
- Artificial leather colorants
- Coatings for optical films
- UV-curable coatings and bonding adhesives for optical discs
- Coatings for building materials
- High-performance coatings and adhesive materials
- Inks for printed electronics

Solid compounds

- PPS compounds
- High-performance compounds
- Plastic colorants
- High-performance optical materials
- Coextruded multilayer films

Processed products

- Industrial adhesive tapes
- Label stock for printing
- Hollow-fiber membranes and modules
- Magnetic tape and coated sheets
- Plastic pallets and containers
- Decorative boards and interior housing products
- Decorative interior sheets
- Health foods

Responding to the rapid evolution of smartphones

***DAITAC WS#84* series**
(Double-sided adhesive tape for waterproof mobile communications devices)

The *DAITAC WS#84* series, one of the first series of waterproof tapes to be developed and marketed for waterproof smartphone construction, qualifies for IPX7, an international standard for protection against water ingress, earning it an unrivaled position in this market. The thin foam substrate of *DAITAC WS#84* series' tapes is soft, with a fine closed pore structure similar to that of a sponge. The substrate and the adhesive layer form a single tape that adheres tightly regardless of minute surface irregularities, thereby preventing water from penetrating. DIC continues to promote the development of adhesive tapes and other products in response to the trend toward lighter and more sophisticated mobile communications devices.

Contributing to the realization of lighter, more fuel-efficient vehicles

***DIC.PPS* series**
(PPS compounds)

PPS polymer is an engineering plastic that boasts high resistance to heat—it has a melting point of approximately 280°C—and chemical substances. In addition to delivering outstanding heat and chemical resistance, PPS compounds in the *DIC.PPS* series maintain excellent rigidity, strength and electrical insulating properties, are lighter than iron and can be molded into more complex shapes, as a result of which these compounds have found application in components for hybrid, electric and other environment-friendly vehicles as a lighter, high-performance alternative to metal materials. As the world's leading manufacturer of PPS compounds in terms of market share, DIC enjoys a solid global presence, with bases in Asia, North America and Europe.

Developing Innovative Products that Address Key Social Imperatives

Climate change, energy, food and disaster prevention are just a few of the urgent issues that the world needs to address.
The DIC Group is leveraging the power of chemistry to provide products that can help resolve such issues and drive social sustainability.

Adhesive with Oxygen Barrier Properties (*PASLIM*)

Adhesive for packaging film that prevents oxygen permeation and keeps foods fresh longer

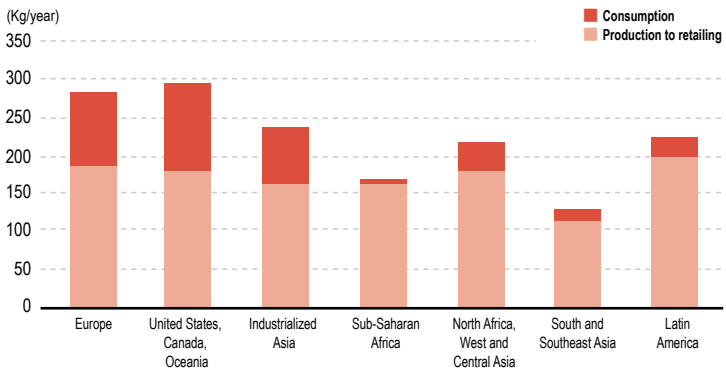
Social Imperative >

Reduce food loss and conserve packaging resources by realizing more functional packaging materials

Millions of people the world over suffer from malnutrition, yet one-third—approximately 1.3 billion metric tons—of the food produced globally for human consumption is wasted annually, accordingly to an estimate made by the Food and Agriculture Organization of the United Nations in its 2011 report. Efforts are being made in many areas to help resolve this paradox, including through the use of high-performance packaging materials to prolong shelf life, thereby minimizing food loss in distribution, retailing and consumption. Particularly notable among these is flexible plastic film with oxygen barrier properties, which, as its name indicates, keeps oxygen—a key cause of bacterial growth—away from food. By preventing oxidization, these materials help extend expiration dates.

A key issue with oxygen barrier packaging films is that they are generally made from multiple layers of film that must be laminated together, which makes manufacturing difficult and discourages market acceptance in many places. Simplifying the laminated structure of such films would thus help reduce both food waste and resource consumption.

Per Capita Food Losses and Waste, at Consumption and Pre-Consumption Stages, in Different Regions



Source: *Global Food Losses and Food Waste*, Food and Agriculture Organization of the United Nations, 2011

Source: *Global Food Losses and Food Waste*, Food and Agriculture Organization of the United Nations, 2011

DIC's Response >

An adhesive that prevents oxygen permeation, facilitating the reduction of packaging film weight

DIC has developed an adhesive that can be used instead of oxygen barrier film to minimize food loss

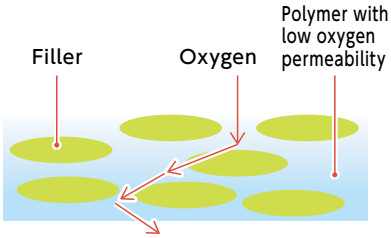
A supplier of diverse, highly functional products, including printing inks, films, adhesives and coatings, in packaging markets around the world, DIC is working to improve the oxygen barrier properties of food packaging materials with two aims—to prolong the shelf life of food, thereby reducing food loss, and to promote the efficient use of the resources from which such materials are manufactured.

In summer 2013, these efforts led to the development of *PASLIM*, an adhesive with oxygen barrier properties. DIC realized this innovative, multifunctional material by combining a polymer with low oxygen permeability and an inorganic compound filler, thereby lengthening the distance to the food (the "maze effect"). *PASLIM* thus imparts an oxygen barrier performance equivalent to that of conventional laminated packaging films, which are several times thicker.

Because it eliminates the need for a conventional oxygen barrier film layer, *PASLIM* facilitates the manufacture of dramatically thinner and lighter laminated packaging films. As well as preventing food deterioration, *PASLIM* reduces the volume and the cost of film used, emissions of CO_2 during product transport and the amount of packaging film disposed of post-consumption. DIC estimates overall CO_2 emissions attributable to the production, use and disposal of *PASLIM* are around 30% lower than for conventional oxygen barrier films.

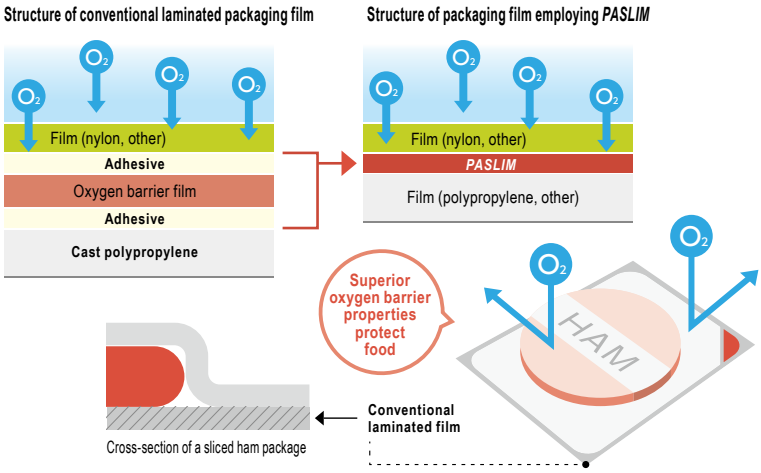
The first customer to adopt *PASLIM* was a livestock farming and processing company in the PRC, which chose the product for use in packaging for hams and sausages. The product has also been well received at numerous international packaging exhibitions. DIC continues to receive inquiries from interested food and packaging companies worldwide.

Structure of *PASLIM*



Maze effect : The filler blocks oxygen molecules from passing through, forcing them to change their path and lengthening the distance to the food, making it difficult for oxygen to penetrate the adhesive. This creates an oxygen barrier comparable to that of laminated packaging films, which are considerably thicker.

Examples of Structures of Laminated Oxygen Barrier Films



Packages of sausages employing oxygen barrier adhesive

KEY PERSON from DIC

We are establishing a business model in the PRC and expanding its application worldwide.

In addition to our usual packaging materials customers, we have proposed a *PASLIM*-based food packaging solution directly to a Chinese food manufacturer. This is a successful example of a solution realized thanks to the provision of technical assistance to a local company, which encouraged the company to adopt *PASLIM* for use in its food packaging. Looking ahead, we plan to apply this business model worldwide by leveraging DIC's technologies and networks to propose solutions tailored to market conditions and requirements across various countries and regions.

Manager in Charge, Adhesives Project **Gen Suehiro**

KEY PERSON from DIC

Our goal is to achieve harmony between basic research and applied technology.

In addition to synthesis technologies, which facilitated the creation of a resin with oxygen barrier properties, and dispersion technologies, used to separate out selected substances from a myriad of fillers, *PASLIM* harnesses a compounding technology that imparts superior adhesiveness. Collaboration between the Corporate R&D Division and the Technical Administrative Division was instrumental in commercializing this well-balanced high-performance adhesive.

Head Researcher, Adhesive Technical Group 1, Adhesives Technical Division **Mutsuhiro Shimoguchi**

KEY PERSON from DIC

We are contributing to social sustainability through the enhancement of barrier properties.

SAVE FOOD is a global initiative aimed at promoting sustainability by reducing global food loss and waste that spearheads efforts involving members from various sectors, primarily in Europe and North America. Imparting oxygen barrier properties to packaging film is attracting considerable attention as one solution to the problem of food waste. We are working to help address this issue by developing products that capitalize on our polymer synthesis and other elemental technologies and by leveraging our connections with converting companies around the world. By further expanding our lineup of oxygen barrier adhesives and other solutions, we will continue working to contribute to global sustainability.

Manager in Charge, Packaging & Graphics Marketing Department **Susumu Nishimura**

Epoxy Resin and Curing Agent for Infrastructure Renovation (*EPICLON* with *LUCKAMIDE*)

Superior adhesiveness, even on damp surfaces, shortens repair times and improves workability

Social Imperative >

Address the urgent need to repair aging roads, bridges and other infrastructure elements

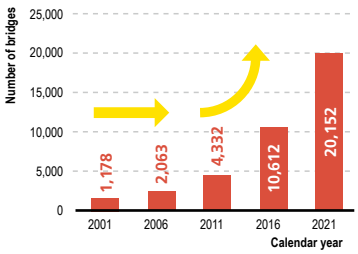
Many of Japan's roads and bridges were built in the 1960s, a period of rapid economic growth for the country. Over the past 50 years, increasing traffic volume, larger vehicles, the use of deicing agents and other factors have led to the deterioration of such structures. Despite the exigency of the situation, tight national and local government finances have hindered the progress of renovation, resulting in an upsurge in road and bridge closures due to safety concerns.

Given these circumstances, countermeasures centered on safe, affordable repair techniques that prolong the useful life of existing infrastructure are garnering considerable attention. Because such repair works primarily involve roads, railways, bridges and other outdoor structures, rainfall and river conditions can cause major delays. Accordingly, the materials used must work well in rainy or humid environments.

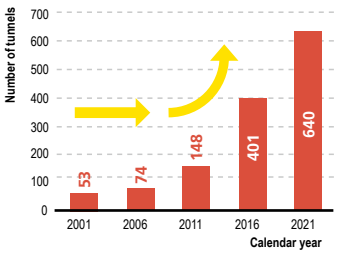
With only five years remaining until the 2020 Summer Olympic and Paralympic Games in Tokyo, infrastructure renovation—including a major overhaul of Tokyo's freeway system and the repair or replacement of bridges—is an urgent priority for local governments across the country. At the same time, there is a growing need worldwide for superior repair agents. This is also true in the United States, where infrastructure decay has long been an issue, and in the PRC, which will likely face the same challenges in the years ahead.

The deterioration of Japan's aging roads will progress dramatically in the next 10–20 years

Number of bridges in use for more than 50 years (national roads and roads managed by four public highway corporations)



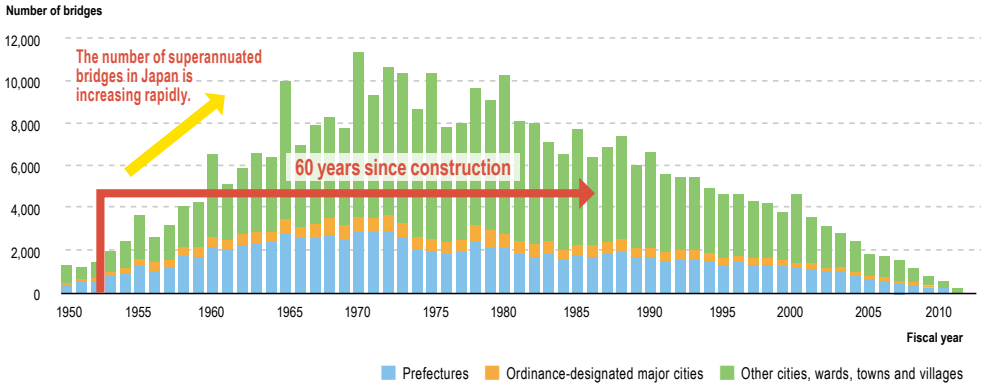
Number of tunnels in use for more than 50 years (national roads and roads managed by four public highway corporations)



Source: Ministry of Land, Infrastructure, Transport and Tourism, and four public highway corporations

Source: Ministry of Land, Infrastructure, Transport and Tourism, and four public highway corporations

Number of structures constructed annually



Source: Materials on road repairs and renovations prepared by Ministry of Land, Infrastructure, Transport and Tourism (available in Japanese only)

DIC's Response >

A revolutionary curing agent that dramatically improves adhesiveness on damp surfaces

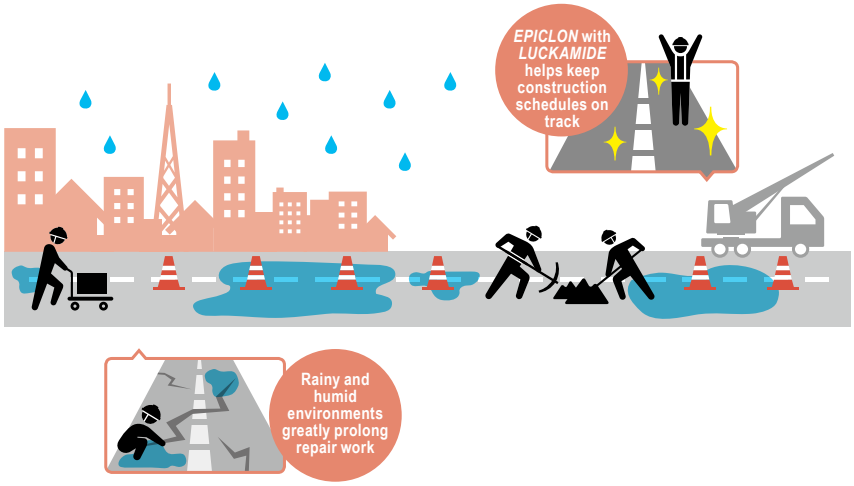
DIC's new curing agent shortens construction delays due to rain and improves workability

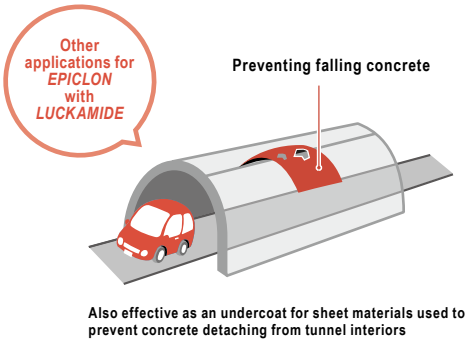
DIC develops and sells diverse materials for various civil engineering repair applications and methods. Drawing on our expertise in these areas, in June 2014 we responded to the need for solutions to construction delays due to rain by developing an innovative new version of thermosetting epoxy resin *EPICLON* with excellent adhesiveness, even on damp surfaces, combined with *LUCKAMIDE*, a revolutionary new curing agent that cures at ambient temperatures.

For example, repairs involving aging concrete structures usually require the bonding of new concrete. If it rains during this process, work must be suspended until the wet concrete is fully dry. To address this problem, DIC sought not only to develop a new version of *EPICLON*, the base material, with enhanced bonding properties but also to improve the water resistance of the curing agent added to harden the resin. These efforts, which focused on leveraging proprietary polymer design and compounding technologies to realize a new formulation, led to the development of *LUCKAMIDE*, which boasts groundbreaking water resistance and cures at ambient temperatures, setting it apart from conventional water-resistant epoxy resin curing agents, which must be heated to cure, and facilitating its use outdoors.

The interaction between *EPICLON* and *LUCKAMIDE* results in dramatically increased adhesiveness to damp concrete and improved workability in rainy or humid environments, reducing project delays and shortening repair times.

Superb water resistance and ambient-temperature curing reduce construction lead times





In addition to this new epoxy resin and curing agent combination, DIC recently developed *DIOVAR*, a tough new methacrylate resin repair material that cures quickly in low-temperature environments and boasts excellent adhesiveness, even on damp surfaces. This new offering improves workability and reduces construction delays in winter and in cold regions.

DIC produces customized resin and curing agent mixes to accommodate regional road standards and diverse construction techniques, including cylinder injection and spray application, which it supplies to contractors and other customers.

KEY PERSON from DIC

Ambient-temperature curability and superb water resistance underscore *LUCKAMIDE*'s significant potential.

Developing an agent with enhanced water resistance and adhesiveness that didn't need heat to cure was a particularly daunting challenge. It was a process of trial and error, but in the end the success of our efforts was immediately obvious. The resin in which it is used expands smoothly on wet concrete almost as it if is pushing the water out of the way, at the same time demonstrating strong adhesiveness. A number of contractors are currently using the resin in trials to verify long-term durability. I am excited about *LUCKAMIDE*'s potential.

Head Researcher, Polymer Technical Group 1, Polymer Technical Division 1 **Tsugio Tomura**

KEY PERSON from DIC

We will expand our focus to include global markets after establishing a solid track record in Japan.

We exhaustively customize repair agents to accommodate regional road standards and diverse construction techniques. For this reason and others, it is important for us to collaborate closely with contractors to encourage the adoption of these products. There is strong business potential for repair agents that work on damp surfaces. After establishing a solid track record in Japan, we will capitalize on our manufacturing bases in the PRC and the Asia−Pacific region to begin offering these products in global markets.

Manager of Life & Living Epoxy Sales Department, Coating Materials Sales Division **Masanori Suzuki**

Firefighting Foam (*MEGAFOAM*)

Foam extinguishing agent quickly extinguishes fires involving hazardous substances, thereby minimizing damage

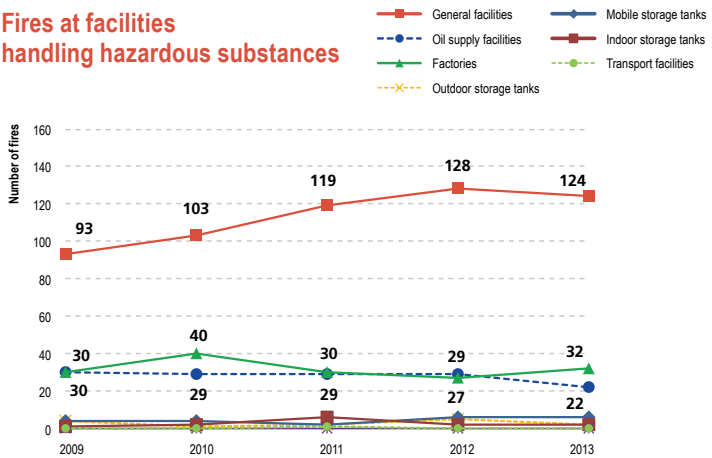
Social Imperative >

Effectively extinguish dangerous fires at facilities handling hazardous substances

Fires at petrochemical complexes, chemical plants and other facilities handling hazardous substances designated under Japan's Fire Service Act have the potential to cause massive damage. In addition to human casualties, such fires can result in the loss of machinery and equipment, and of raw materials and products, the release of environmentally damaging substances and the suspension of production and resulting disruption of supply chains. Accordingly, it is vital to extinguish such fires as quickly as possible.

Unlike regular structural fires, chemical fires—notably those involving water-insoluble flammable liquid materials such as gasoline and water-soluble flammable liquid materials such as alcohol—cannot be extinguished by water alone. For such fires, it is imperative to blanket burning surfaces with a firefighting foam containing a fire extinguishing agent diluted with fresh water or seawater, which prevents contact with oxygen while cooling the fire. The foam must coat the burning surface quickly without being broken down by the heat and be able to suppress fires involving a variety of chemicals.

Fires at facilities handling hazardous substances



Source: Fire and Disaster Management Agency report on fires in 2013 involving hazardous substances

Source: Fire and Disaster Management Agency report on fires in 2013 involving hazardous substances

DIC's Response >

A firefighting foam with a superior extinguishing performance that has earned it the top share of the Japanese market

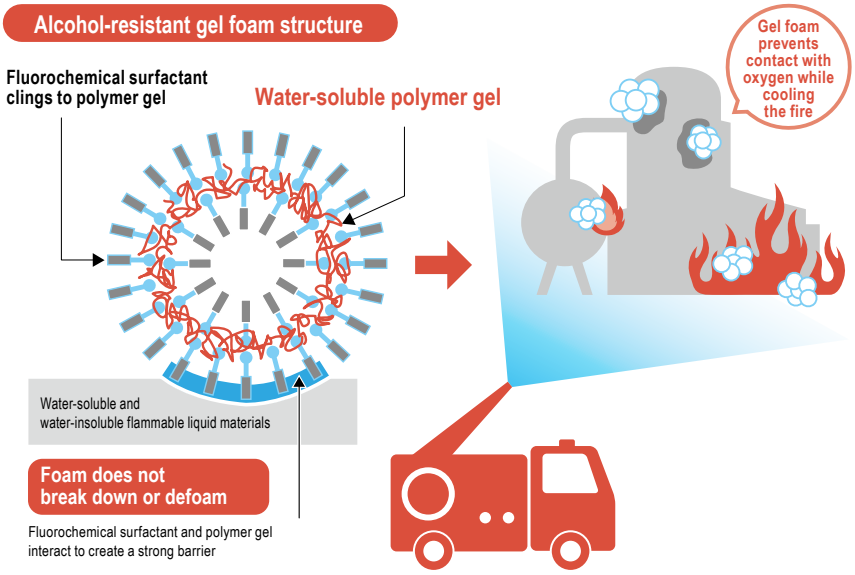
DIC has developed a firefighting foam with a wide range of applications

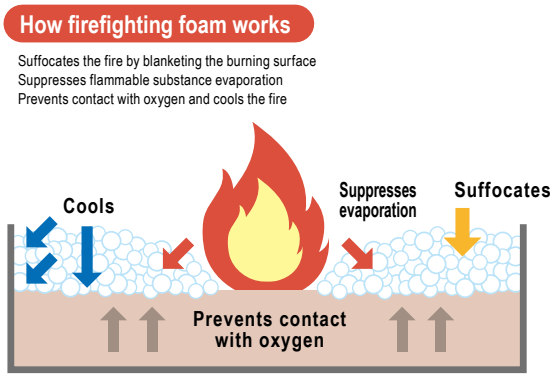
Developed in 1982, *MEGAFOAM* is Japan's first aqueous film-forming firefighting foam, an innovative product that leverages DIC's molecular design and mixing technologies in the area of fluorochemical surfactants. Surfactants form a thin aqueous film at the interface between two materials with hydrophilic and lipophilic properties, thereby transforming the material surfaces. Common surfactants include soap and shampoo. Aqueous film-forming surfactants lower surface tension, making it easier to form films and preventing the foam generated from breaking down. Firefighting foams harnesses this capability.

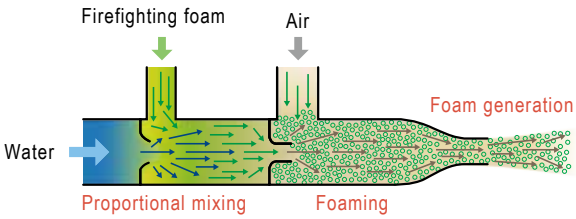
Since its launch, *MEGAFOAM* has earned an outstanding reputation for its fire extinguishing capabilities. In addition to being adopted by the Japan Self-Defense Forces and fire departments, *MEGAFOAM* is currently in use at numerous airports, facilities handling hazardous substances, tunnels, underground parking lots and other facilities. Owing to the revision of pertinent legislation, corporate sites and areas with floating roof storage tanks the diameter of which exceed 34 meters are obliged to install large-capacity foam monitor systems. As a consequence, the use of firefighting foam systems by industrial complexes and fire departments across the country has expanded rapidly. *MEGAFOAM* is currently the leading firefighting foam in Japan in terms of market share.

MEGAFOAM can be adapted to extinguish fires involving water-soluble flammable liquid materials

Unlike fires involving gasoline and other water-insoluble flammable liquid materials, fires involving water-soluble flammable liquid materials such as alcohol, ketones, esters and amines are extremely difficult to put out because firefighting foam reacts with water and dissolves. In the mid-1980s, DIC capitalized on its polymer gel formation technologies to develop a robust foam structure. This led to the commercialization of an alcohol-resistant version of *MEGAFOAM*. As it is also effective in extinguishing fires involving gasoline, oil and other water-insoluble flammable liquid materials, this version of *MEGAFOAM* is particularly prized by fire departments, which often must deal with fires involving unspecified materials.







Foam is generated by combining air with an aqueous solution comprising a mix of water and extinguishing agent in fixed proportions.

Applications range from fire trucks to fire extinguishing systems for industrial complexes

Chemical fire engine

Discharge from large-capacity foam water cannon

Fire extinguishing equipment for oil tanks

KEY PERSON from DIC

Easily diluted and resistant to breaking up, *MEGAFOAM* combines numerous DIC technologies.

With firefighting foam, you can alter expansion and choose a foam shower, nozzle or other discharge format according to the nature of the fire to be extinguished. In addition to its superior fire extinguishing performance, *MEGAFOAM* has garnered praise for its manageability and suitability for diverse applications, both attributable to foam generating capabilities that reflect our high-precision polymer design and mixing technologies.

Head Researcher, Polymer Technical Group 10, Polymer Technical Division 2 **Jiro Matsuo**

KEY PERSON from DIC

DIC's surfactant technologies are also attracting attention overseas.

A late entrant into the firefighting foam market, DIC took a different approach to market development than existing players. This included collaborating with fire extinguishing equipment manufacturers and focusing on ease of use at fire sites. *MEGAFOAM*'s performance has been proven in various fires and its use at industrial complexes, airports, tunnels and other facilities continues to expand. Our proprietary fluorochemical surfactant technologies are also attracting considerable attention from firefighting foam manufacturers overseas.

General Manager in Charge of Fluorochemical Sales Department, Advanced Polymer Sales Division **Kouichi Jinba**

Groundbreaking Sun Chemical Solution Enhances the Recyclability of Shrink Sleeve-Labeled PET Bottles

The Sun Chemical Group, a core member of the DIC Group, is the leading manufacturer of printing inks in terms of market share in both the Americas and Europe.

Social Imperative

Shrink wrap is a material made of thermoplastic film that shrinks tightly to conform to the shape of whatever it is covering when heat is applied. In recent years, shrink sleeves—printed tube-shaped shrink wrap for full-coverage labeling of containers—have come into wide use for labeling polyethylene terephthalate (PET) bottles. Shrink sleeve labels have been extremely successful in terms of marketing and package appeal, which has driven up demand, spurring growth in the overall market for shrink wrap products. However, in the United States and Europe, sorting and separation issues have had a significant negative impact on the recycling of PET bottles. During the recycling process, granulated PET bottles go through a separation tank, where the density of water is used to remove contamination in the form of non-PET materials, such as caps and labels. Problems arise because shrink sleeve labels made from common current materials (i.e., PET-G) typically do not separate completely, causing the recycled PET material to be contaminated, residual label material or discolored by inks bleeding into the washing or flotation solutions. As a consequence, recycling efficiencies are impacted (lower yields) and/or the resultant poorer quality recycled PET must be downcycled into carpet fibers and pallet stripping, for example, rather than upcycled into food-grade recycled PET for new bottles.

Sun Chemical's Response

Stockpiles of PET bottles with shrink sleeves

Sun Chemical has addressed this imperative by developing a pioneering solution that facilitates the complete separation of shrink sleeve labels from PET bottles. This solution centers on a breakthrough de-seamable composition that is applied to the shrink sleeve, as a result of which it detaches easily and completely from the bottle during the full bottle washing step that uses a hot caustic solution. Bottles simply emerge from the washing process without labels, improving the efficiency of optical sorting and also sink/float separation. This new de-seamable composition is attracting considerable attention from the entire value chain involved in PET containers as a solution that will improve the quality and efficiency of recycling and expand applications for recycled PET.

VOICE from the DIC Group

Field Marketing Manager, Sun Chemical Corporation **Jeremy Teachman**

We have developed a solution that improves the recyclability of PET bottles.

Sun Chemical has explored numerous ways to improve the recyclability of PET bottles, focusing primarily on the development of inks and coatings suitable for use on floatable shrink sleeve label materials, which make it easier to remove contaminants in the separation tank. However, challenges always remained. Our new de-seamable composition can be applied to shrink sleeves at the same time they are seamed and as a seaming adhesive using seaming equipment common in industry today. We are excited about the global potential for this innovative new product.

The DIC Group's Sustainability Program

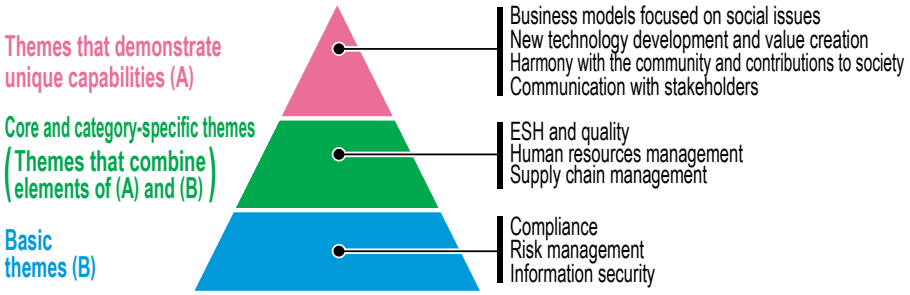
In recent years, the need to achieve sustainability in a manner that takes into account, among others, the environment, ecosystems and socioeconomic issues, including global warming and the depletion of natural resources, has gained increased recognition worldwide. The DIC Group launched its corporate social responsibility (CSR) program in fiscal year 2007, identifying 10 key themes as a framework for its efforts. Having further clarified the overall direction of its sustainability-related initiatives, effective from fiscal year 2014 the Group changed the designation used across its program from "CSR" to "sustainability," which it feels is more appropriate for a globally active corporate entity.

Basic Sustainability Policy

Corporations today are expected to operate in a manner that shows concern for the global environment and conforms with global business rules. The DIC Group is dedicated to conducting its business while retaining a strong commitment to five key concepts: preserving safety and health, ensuring fair business practices and respect for human rights, maintaining harmony with the environment and advancing its protection, managing risks, and creating value for society through innovation. DIC Group employees will continue working to deliver the value that its stakeholders—including its customers, suppliers, local communities, shareholders and investors, and employees—expect, showing ingenuity and a sense of responsibility. The Group itself will strive to remain an organization that contributes to sustainability for society and the global environment by capitalizing on its businesses to achieve unfaltering growth, thereby enhancing its own sustainability.

Sustainability Framework and Themes

To foster concrete CSR measures, in fiscal year 2007 the DIC Group examined social imperatives, the activities of other companies and key relevant materials, including the results of a survey conducted by the *Keizai Doyukai* (Japan Association of Corporate Executives). Based on its findings, and to ensure the compatibility of such measures with its operations, corporate organization and functions, the Group identified 12 key themes as a framework for implementing its CSR program. Subsequently, the Group partially revised these themes in response to changes in the external environment and the progress of its efforts. Today, the Group's sustainability framework comprises 10 themes. The Group has introduced a system whereby these are categorized as basic themes, themes that demonstrate unique capabilities and themes that combine elements of the previous two classifications, and clarified the positioning thereof. Each fiscal year, the Group formulates targets and activity plans for each of these themes.



Expanding the Scope of Sustainability Initiatives

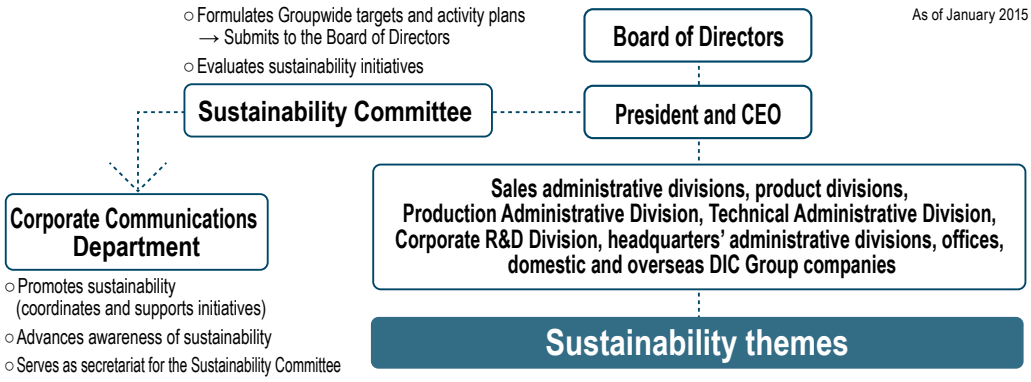
To guide its efforts to promote sustainability as an integral part of its business activities, the DIC Group formulates theme-specific medium-term targets in line with its basic sustainability policy and creates annual Group activity plans. Individual sales and technical administrative divisions, product divisions, business sites and overseas and domestic DIC Group companies are then charged with pursuing effective sustainability programs by formulating their own annual activity plans, ensuring that the Group's basic sustainability policy and targets permeate their organizations and labor forces and linking sustainability activities to business targets.

System for Promoting Sustainability

The DIC Group's system for promoting sustainability centers on the Sustainability Committee, which answers directly to the president and CEO and is tasked with reporting on the status of sustainability themes, as well as with proposing policies and programs for advancing sustainability and deliberating on related matters as a vital component of corporate management.

Members of the Sustainability Committee

Executive officer in charge of the Finance and Accounting Division, Executive officer in charge of the Corporate Strategy Division, Executive officer in charge of the General Affairs and Legal Division, Executive officers in charge of product segments, General Manager of the Production Administrative Division, General Manager of the Technical Administrative Division, General managers of sales administrative divisions, CEOs of overseas regional headquarters, Corporate auditors



Ensuring DIC Remains a Globally Trusted Corporate Citizen with a Proud Reputation

Leveraging its Position as a Global Manufacturer of Fine Chemicals to Support the UNGC

Seeking to fulfill its responsibilities as a member of the international community in a more proactive manner, in December 2010 the DIC Group pledged its support for the 10 principles put forth by the United Nations (UN), as well as for the UN's Millennium Development Goals (MDGs), and became a signatory to the United Nations Global Compact (UNGC).

Inaugurated in 2000, the UNGC is a voluntary initiative for companies that seek to achieve sustainable development worldwide. More than 13,000 companies and organizations have pledged their support for the UNGC in the belief that global sustainable development is possible if companies align their business practices with, and fulfill their social responsibilities in, 10 globally accepted principles in the areas of human rights, labor, the environment and the prevention of corruption.

Applying the 10 Principles of the UNGC's Global Compact

The DIC Group Code of Business Conduct conforms with the 10 principles of the UNGC. The Group is capitalizing on its participation in this program to advance its operations around the world, while at the same time giving ever-greater consideration to the environment and human rights, with the aim of ensuring sustainability for global society.

10 Principles of the UNGC (official version)

Human rights	Principle 1	Businesses should support and respect the protection of internationally proclaimed human rights; and
	Principle 2	make sure that they are not complicit in human rights abuses.
Labour	Principle 3	Businesses should uphold the freedom of association and effective recognition of the right to collective bargaining;
	Principle 4	the elimination of all forms of forced and compulsory labour;
	Principle 5	the effective abolition of child labour; and
	Principle 6	the elimination of discrimination in respect of employment and occupation.
Environment	Principle 7	Businesses should support a precautionary approach to environmental challenges;
	Principle 8	undertake initiatives to promote greater environmental responsibility; and
	Principle 9	encourage the development and diffusion of environmentally friendly technologies.
Anti-corruption	Principle 10	Businesses should work against corruption in all its forms, including extortion and bribery.

Complying with ISO 26000

The DIC Group operates in a manner that is consistent with ISO 26000, released in November 2010, which provides businesses and organizations with guidelines for operating in a socially responsible manner.

Corporate Governance

Basic Approach to Corporate Governance

The DIC Group identifies the purpose of corporate governance as being to ensure effective decision making pertaining to its management policy of achieving sustainable corporate growth and expansion through sound and efficient management, while at the same time guaranteeing the appropriate monitoring and assessment of and motivation for management's execution of business activities. With the aim of achieving a higher level of trust on the part of shareholders, customers and other stakeholders and enhancing corporate value, DIC promotes ongoing measures to reinforce its management system and ensure effective monitoring thereof.

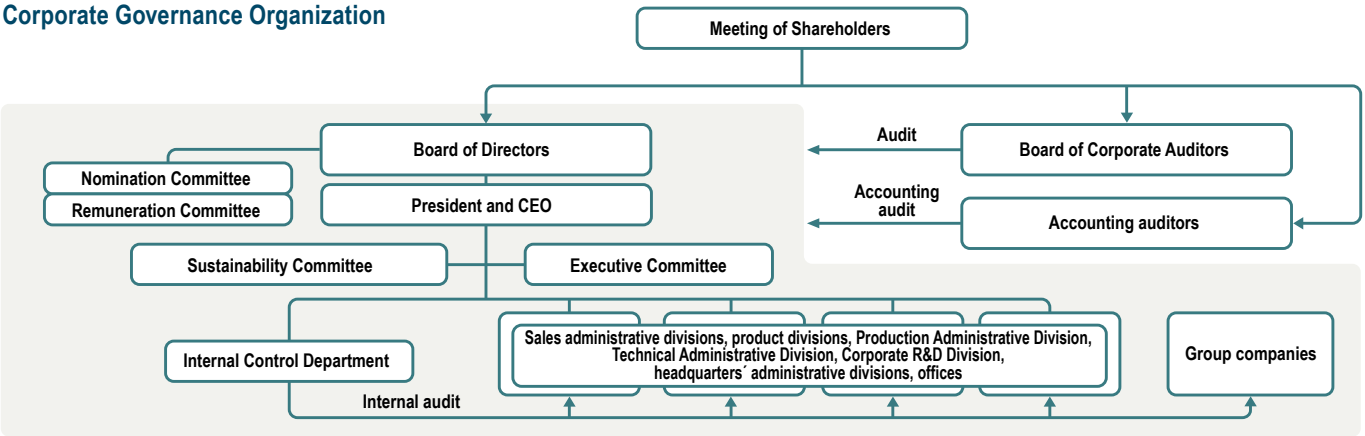
Corporate Governance System

A company with internal auditors, DIC maintains a Board of Directors and a Board of Corporate Auditors. As well as appointing two highly independent outside directors, DIC has instituted an executive officer system, a move aimed at separating decision making and implementation and thereby accelerating business execution and clarifying responsibilities. DIC also has a Nomination Committee and a Remuneration Committee, which include the two outside directors, to ensure objectivity in the nomination and selection of, and determining remuneration for, directors and executive officers. The four-member Board of Corporate Auditors, which includes two individuals—one a lawyer and the other an accounting scholar—as outside auditors, liaises with the accounting auditors and the internal auditing department.

System of Internal Control

To ensure fair business practices, the Board of Directors has set a basic policy on internal control that encompasses, among others, compliance with laws and regulations and DIC's Articles of Incorporation, risk and information management and the creation of systems to foster business efficiency. Specific initiatives to date have included formulating a code of business conduct that encompasses a whistle-blowing system, various risk management initiatives implemented by the Sustainability Committee, the establishment of various internal rules and monitoring (internal control audits and environment and safety audits). The Board of Directors also hears annual reports on measures implemented in line with the policy on internal control.

Corporate Governance Organization



Toward Fair and Transparent Corporate Activities

Goals and Achievements of Major Initiatives

Objectives of initiatives	Goals for fiscal years 2014–2015	Achievements in fiscal year 2014	Evaluation	Goals for fiscal year 2015
Raise awareness of compliance.	Complete a Chinese-language version of the DIC Group Code of Business Conduct, in addition to the Japanese- and English-language versions, and use presentations and e-learning to promote awareness.	Versions of the DIC Group Code of Business Conduct in multiple other languages were completed, and explanatory meetings were held in Japan and at the majority of subsidiaries in the Asia–Pacific region and Greater China.	★★★	Hold explanatory meetings for the DIC Group Code of Business Conduct in local languages and set up an e-learning system to educate employees about the code.
Conduct business fairly.	Complete subsidiary director checklists and promote the use thereof by providing legal training.	Subsidiary director checklists were completed, and legal training pertaining to the list, as well as to antitrust and anti-corruption legislation, was provided to executives at overseas subsidiaries.	★★★	Continue to provide legal training pertaining to antitrust and anti-corruption legislation and establish a system to confirm compliance.

Basic Approach to Compliance

Compliance in the DIC Group encompasses not only obeying laws but also acting in a manner that is in keeping with social norms and the expectations of customers, communities and other stakeholders. With the aim of ensuring sustainable growth of businesses that are both fair and transparent, DIC formulated the DIC Group Code of Business Conduct, a unified set of guidelines the adherence to which it considers to be the foundation of compliance. DIC compels all DIC Group employees to conduct themselves in accordance with the code.

The DIC Group Code of Business Conduct

The DIC Group completed the DIC Group Code of Business Conduct in July 2014 and subsequently distributed it to all DIC Group employees. The code not only mandates compliance with national laws and international rules but also presents 10 principles essential to the professional conduct of DIC Group employees.

The DIC Group Code of Business Conduct requires DIC Group employees worldwide to share the Group's values and commit themselves to doing what is right, as well as to acting with common sense and an understanding of individual responsibilities, in all aspects of their work.

Basic Outline of the DIC Group Code of Business Conduct

Principles essential to business practices

1. Your Rights as an Employee: Respect, Dignity, Privacy
2. Environment, Health, and Safety
3. Your Responsibility to Avoid Potential Conflicts Of Interest And To Protect Group Property
4. Anti-Corruption and Anti-Bribery Policy
5. Your Relationships With Governments and Government Officials
6. Your Relationships With Customers, Suppliers, and External Third Parties
7. Money Laundering and Anti-Terrorism
8. Forced Labor, Child Labor, Conflict Minerals
9. Insider Trading
10. Proper Accounting and Internal Control Relating to Financial Reporting

In fiscal year 2014, the DIC Group held 114 explanatory meetings on the DIC Group Code of Business Conduct in Japan and 32 in the PRC, Southeast Asia and other parts of Asia. In Europe and the United States, the Group mainly used e-learning to keep employees informed about the code. The Group also translated the code into 25 languages to foster understanding among employees around the world.

Initiatives to Promote Compliance

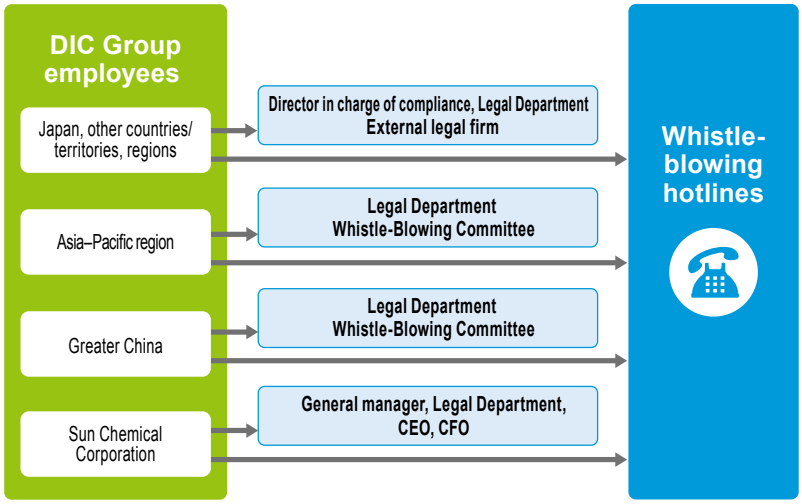
In addition to the DIC Group Code of Business Conduct, the Group promotes compliance through the following initiatives:

1. Provision of training focused on legal issues to improve compliance awareness
   For employees at point of hire, when promoted and before overseas transfers
2. Appointment of compliance officers at all regional headquarters—DIC Corporation (Japan), Sun Chemical Corporation (the Americas and Europe), DIC (China) Co., Ltd. (the PRC) and DIC Asia Pacific Pte Ltd (Asia and Oceania)—to spearhead global compliance efforts
   The DIC Group vows that it will not violate the principles of the DIC Group Code of Business Conduct, even if such a violation would appear to profit the Group. As a corporate citizen, the Group also pledges to respect social norms and act in a sound and socially acceptable manner.

Establishing and Operating a Whistle-Blowing System

The DIC Group has established a whistle-blowing system through which one can directly report an issue or question regarding compliance to the division which is responsible for compliance. Since fiscal year 2014, the Group has maintained whistle-blowing hotlines that can handle reports in the languages of more than 160 countries. The Group has also devised strict rules under this system to protect whistle-blowers from retaliation, and is working to ensure the system functions in a proper manner.

When a report is received, the Group responds swiftly and appropriately, giving due consideration for pertinent laws while also incorporating internal and external opinions, to promptly identify and correct misconduct and other compliance violations as quickly as possible.



Antitrust and Anti-Corruption Legislation

The DIC Group has formulated a basic policy to comply with antitrust legislation and made Groupwide efforts to ensure fair business practices. The DIC Group Code of Business Conduct includes rules for complying with antitrust legislation and prohibits involvement in bribery or corruption. In fiscal year 2014, the Group held 110 explanatory meetings about antitrust and anti-corruption legislation for relevant employees to ensure strict compliance with the laws of the countries in which it operates.

Reducing Business Risks and Preventing the Recurrence of Incidents

Goals and Achievements of Major Initiatives

Objective of initiatives	Goals for fiscal years 2014–2015	Achievements in fiscal year 2014	Evaluation	Goals for fiscal year 2015
Ensure business continuity for the DIC Group.	Promote product division-led efforts to revise/maintain business continuity plans (BCPs) for main products; abstract and evaluate potential risks related to the operating environment, society, economy and governance; and identify risks of which the DIC Group must be mindful. Conduct systematic training based on revised task force response manuals. Acting through the Risk Management Conference, promote the preparation and use of task force response manuals by pertinent departments.	After evaluating the DIC Group's risk management approach and the role of the Risk Management Conference, the DIC Group formulated a Group risk management policy. These developments were conveyed to Group employees through the in-house portal site.The Group also designated priority risks and began formulating response measures. The Group continued to provide support for the formulation of BCPs for each product division and the deployment thereof. However, achievements did not extend to the preparation of task force response manuals based on the risk management policy or the implementation of planned training.	★★	Encourage awareness of the new risk management policy across the DIC Group. Explore realistic and effective ways to operate the risk management system. Ensure product division BCPs align with systematic training based on task force response manuals.

Basic Approach to Risk Management

The DIC Group undertakes risk management initiatives with the aim of appropriately and flexibly addressing changes in its operating environment and the diversification of risks, and of swiftly mitigating damage. The Group recognizes risks in three principal categories: externally caused risks that are beyond its control, corporate risks that can be prevented and business risks that should be handled by the relevant departments. The Risk Management Conference works to ensure effective risk management in and an effective division of responsibilities with individual businesses.

Risk Management Policy

The DIC Group first introduced risk management initiatives in 2001 by creating the Compliance Committee and setting up reporting channels. Following the establishment of the Risk Management Subcommittee in May 2012, the Group undertook initiatives aimed at responding to serious natural disasters and promoting business continuity management (BCM). Since fiscal year 2014, the Risk Management Subcommittee has focused its attention on establishing a risk management policy and a risk management system, efforts that are designed to further enhance corporate value Groupwide. In a bid to ensure the effective and sustainable implementation of initiatives, in January 2015 the Group introduced a newly formulated risk management policy.

Risk Management Policy

❶ Risk management objectives

The DIC Group undertakes risk management initiatives with the aim of appropriately and flexibly addressing changes in the operating environment and the diversification of risks and of swiftly mitigating damage.

❷ Definition of risks and risk management

The DIC Group's definition of risk and risk management is as follows:

1. Risk: All uncertainties that threaten the DIC Group's sustainability and business goals.
2. Risk management: Initiatives to enhance corporate value by managing all risks to the DIC Group from a Groupwide perspective.

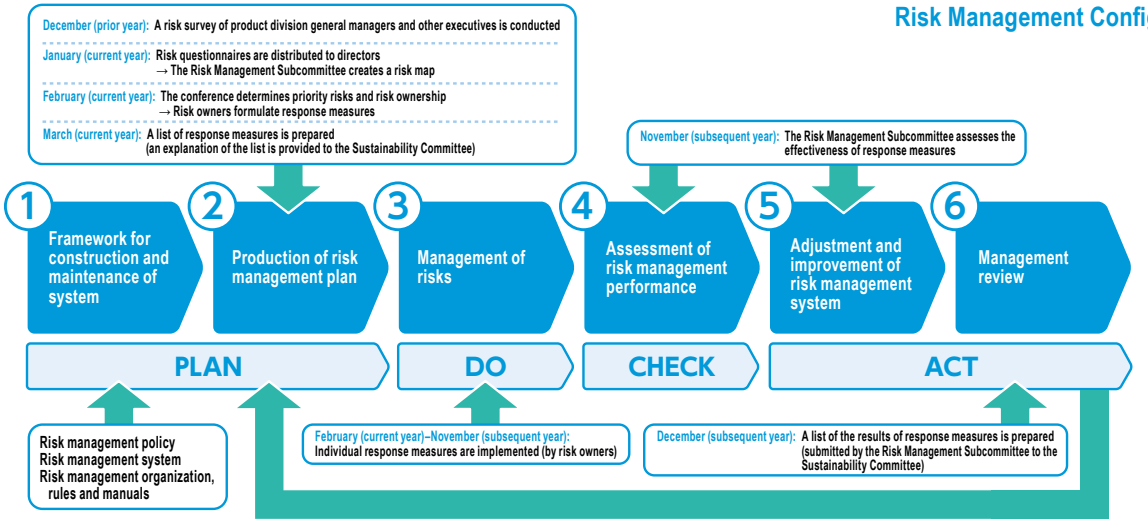
❸ Risk management initiatives

1. The DIC Group comprehensively evaluates all risks based on their potential impact on operations and likelihood of occurring, among others, and prioritizes systematic and effective responses.
2. The DIC Group constructs and validates risk management systems by repeating the plan–do–check–act (PDCA) cycle.
3. The Risk Management Conference shares responsibilities with the risk management teams of individual businesses to properly deploy risk measures within the DIC Group. The conference regularly reports on its activities to the Sustainability Committee.

Risk Management System

The DIC Group risk management system was established to reflect the Group's new risk management policy. The system reduces risks by promoting use of the PDCA cycle to implement risk management plans. The Group has positioned fiscal years 2014 and 2015 as the first phase of Groupwide risk management initiatives predicated on the new system. Subsequent phases will also last two years. The Group has commenced the implementation of initiatives based on the system in Japan and will consider rolling them out globally if the nature of risks faced warrants doing so. Administrative divisions at DIC's corporate headquarters in Japan and other divisions/departments, which are organized vertically by function, will independently undertake such initiatives through direct collaboration with pertinent departments.

Risk Management Configuration



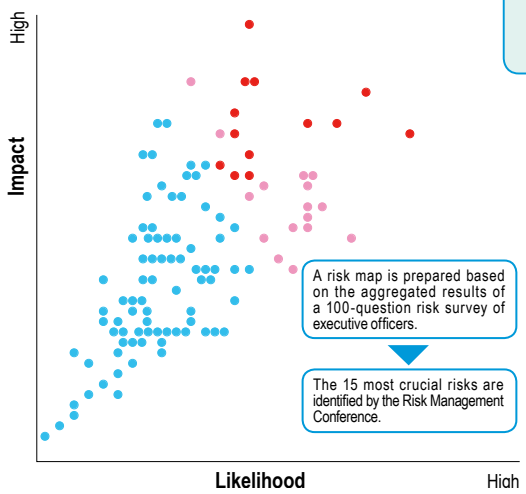
The DIC Group's Perspective on Risk

Risk Definition and Risk Owners

The DIC Group recognizes risks in three principal categories. The Group manages these risks by clarifying risk owners, that is, the divisions/departments responsible for implementing responses.

	Risk categories	Main risk owners
Business activities	**Risks that should be dealt with by relevant departments** These are risks to be considered in the course of conducting business, including those that affect production, development, investment and procurement.	• Product divisions • Production, sales and technical administrative divisions • Purchasing departments
Corporate risk management activities	**Risks that should be dealt with by specialized departments** Unlike risks that should be dealt with by relevant departments, these are risks that affect all Group business activities and can be addressed at the corporate level. Examples include risks related to information management and legal and regulatory compliance.	• Corporate headquarters' administrative divisions • Corporate planning departments
	Risks beyond control These are risks arising from natural events and social circumstances.	• Risk Management Conference • Corporate headquarters' administrative divisions • Sites

Risk Map



12 Major Risks for which the Risk Management Conference has Adopted Response Measures

1. Currency and interest rate fluctuations
2. Intellectual property
3. Governance of subsidiaries
4. Product liability
5. Pandemics
6. Economic swings
7. Decline in debt ratings
8. Information security
9. Operations of overseas business units
10. Significant natural disasters
11. Facility-related accidents
12. Ability to foster human resources and pass on skills

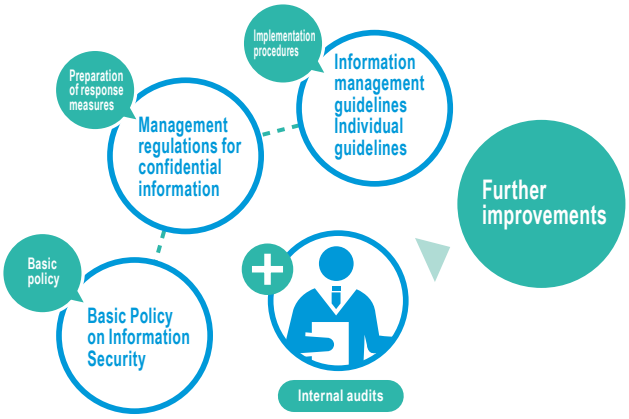
Initiatives to Ensure Information Security

Goals and Achievements of Major Initiatives

Objective of initiatives	Goals for fiscal years 2014–2015	Achievements in fiscal year 2014	Evaluation	Goals for fiscal year 2015
Establish a global information security framework.	• Optimize information management by formulating and enforcing a global security policy and guidelines. • Secure and reinforce information security by maintaining/enhancing the information security system.	• Regional headquarters in the Asia–Pacific region and Greater China enforced rules and guidelines. • In Japan, antivirus utility upgrades were completed and security levels maintained/reinforced thanks to the streamlining and compulsory implementation of measures to eliminate computer vulnerabilities.	★★	• In the Asia–Pacific region and Greater China, have regional headquarters deploy rules and guidelines for the subsidiaries they oversee. • Identify fits and gaps for basic information security policies between the Sun Chemical Group and DIC and consider ways to deploy policies. • Maintain/improve rules and guidelines in Japan by considering revisions and making updates to key rules.

Basic Approach to Information Security

The DIC Group has positioned information security as a key management priority, and established a Basic Policy on Information Security, which is founded on its recognition that protecting information assets that belong to or are managed by the Group is essential to its ability to conduct business. In line with this policy, the Group formulated management regulations for confidential information, information management guidelines and individual guidelines. These were prepared to ensure that individual directors and employees fully understand the importance of information assets and manage them responsibly and appropriately as a matter of course, enabling them to optimize confidential information and make effective use of information assets. Looking ahead, the Group will pursue further improvements by conducting internal audits and confirming current issues.



Globally Maintaining and Enhancing Information Security

Regional headquarters in the Asia–Oceania region*—located in Singapore and the PRC—formulated management regulations for confidential information and information management guidelines, which were deployed in fiscal year 2014 after being approved by the Information Security Conference. In fiscal year 2015, subsidiaries overseen by these regional headquarters will enforce these regulations. The DIC Group will continue to identify fits and gaps between information security policies in Europe and Japan and consider approaches to global deployment policies. In Japan, DIC will continue to maintain and improve rules and guidelines by reviewing rules for implementation, particularly those pertaining to information and communications technology (ICT)-related systems.

* As used here, the Asia–Oceania region includes China but excludes Japan.

Educating about Information Security through Antivirus Utility Upgrades and Explanatory Meetings

The antivirus utility previously used by DIC Group companies in Japan put the onus on users to install and run remedial programs for operating systems-related and other vulnerabilities, as a result of which timely implementation was an issue. To prevent exposure to targeted cyber attacks, the Group has introduced a system for connecting safely to in-house networks after scanning for client PC vulnerabilities. Implementation of the upgrade was made compulsory and procedures for installation and use reduced. To enhance the security-consciousness of employees, as well as to facilitate a smooth shift to the new system, the Group held 25 explanatory meetings at 21 locations in Japan, including at headquarters and branch offices, prior to implementation. Both the explanatory meetings and the security system upgrade were completed successfully.

VOICE from the DIC Group

Corporate IT Director, DIC (China) Co., Ltd. **Tylone Zhou**

We are working to improve information security in Greater China.

We are tackling the rapid development of virtualization technology and cloud computing by promoting a network integration plan in Greater China. We are also deploying the Basic Policy on Information Security, management regulations for confidential information and information management guidelines at regional subsidiaries with the aim of creating an internal management system that will ensure the security of all information. This is one of several key medium- to long-term projects and will enable us to develop global and regional information systems that meet our business needs as well as satisfy Group security requirements.

Toward the Achievement of a Sustainable Society

Promoting Responsible Care

Basic Philosophy

As a company that manufactures and sells chemical substances, DIC sets standardized safety regulations for ESH initiatives. The Company is working to exceed regulatory standards and fully disclose results. Annual measures augment its core policy.

Initiatives to Date

Having established its Principle and Policy for the Environment, Safety and Health in 1992, DIC pledged to implement the precepts of Responsible Care in 1995. Since reaffirming its support for Responsible Care management in January 2006 by signing the CEO's Declaration of Support for the Responsible Care Global Charter, the Company has promoted constant improvements. In 2014, DIC renamed its Principle and Policy for the Environment, Safety and Health the Policy for the Environment, Safety and Health. The name was subsequently revised to the Environment, Safety and Health Policy.

DIC is a signatory to the International Council of Chemical Associations' Responsible Care Global Charter

Environment, Safety and Health Policy

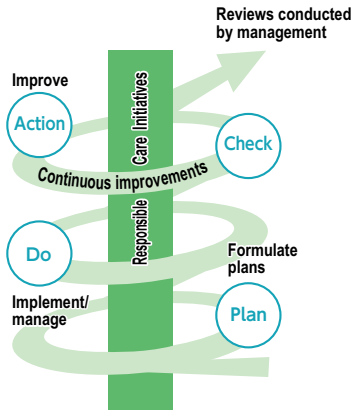
As a responsible corporate citizen and as a company that manufactures and sells chemical substances, DIC recognizes that care for the environment, safety and health is fundamental to the management of the Company. DIC is committed to the concept of sustainable development in all aspects of its businesses and contributes to the global environment, including biodiversity, by creating environmentally sound products and technologies.

1. We take responsibility for the environmental, safety and health implications of products throughout their life cycles.
2. We continuously set goals and targets for environmental, safety and health improvements.
3. We comply strictly with laws, regulations and agreements relative to the environment, safety and health. For countries lacking such laws, we prioritize safe operations and protection of the environment.
4. We systematically provide education and training on the environment, safety and health.
5. We prepare systems and audit internally to benefit the environment, safety and health.

We disclose these policies internally and externally and ask that all DIC Group companies observe them. The abovementioned "safety" also encompasses security and disaster prevention.

Applying the PDCA Cycle to Eight Responsible Care Codes

The DIC Group manages its Responsible Care initiatives in a uniform manner using a management system comprising eight codes, six of which are mandated by the Japan Responsible Care Council (the first six codes listed) and two of which were devised internally (the seventh and eighth codes listed.) In promoting these initiatives, DIC and DIC Group companies make use of the Group's ISO 14001-certifed environmental management system and an ISO 9001-certifed quality management system. In addition to using these two systems, certain overseas Group companies are also working to secure ISO certification for their occupational health and safety management systems through ongoing efforts to enhance their Responsible Care capabilities.



1. Environmental protection (continuous reduction of chemical emissions)
2. Process safety and disaster prevention (prevention of fires, explosions and the discharge of chemicals)
3. Occupational safety and health (protection of the safety and health of employees)
4. Chemical and product safety (management of risks associated with chemicals)
5. Safety in logistics (reduction of chemical risks associated with the distribution of chemicals)
6. Dialogue with society (communication with local communities regarding the environment, safety and health)
7. Quality management (customer satisfaction) (reinforcement of ability to grasp customer quality expectations and of quality coordination)
8. Compliance (strengthening export security control and detection framework and fostering of officers responsible for chemical substance regulatory information)

Annual Activity Plans

The DIC Group formulates annual Responsible Care activity plans, translating them into English and Chinese. We have declared that we will push ahead with corporate initiatives that help maintain and enhance society and the environment in keeping with a slogan that states, “Each employee will grow and help create a healthy environment through Responsible Care activities.”

Initiatives in Fiscal Year 2014

The DIC Group established the following policy for Responsible Care initiatives in fiscal year 2014:

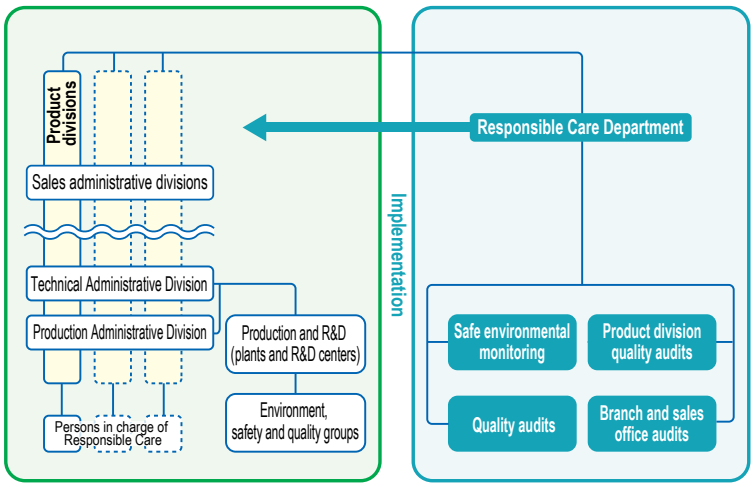
- Promote Responsible Care activities across DIC’s global network.
- Establish a safety culture oriented toward “zero accidents.”
- Set targets to reduce environmental impact through business activities and openly report performance and achievements.
- Manage chemical substance information in an appropriate manner, providing it to customers and using it in DIC Group activities.

The DIC Group also expanded its management by objectives (MBO) system beyond the parent company and Group companies in Japan to encompass Group companies in other areas. As a result, effective from fiscal year 2015 all Group companies in Japan, Greater China, the Asia–Pacific region, and the Americas and Europe (the Sun Chemical Group) set specific goals for disaster mitigation, occupational safety and health and environmental protection and determine key initiatives in line with the eight codes of the DIC Group’s Responsible Care management system, enabling the entire global Group to work as one to raise the level of its Responsible Care initiatives.

Framework for Promoting Responsible Care

Each year, the DIC Group defines priority issues to address and uses PDCA cycles in voluntary initiatives at the business company, plant and research laboratory levels. The Responsible Care Department makes various efforts to help these activities to progress well and regularly audits them to ensure compliance and enhance safety, environmental and quality efforts.

Framework for Promoting Responsible Care



Responsible Care implementation framework **Responsible Care auditing framework**

Support for Group Company Initiatives

The Responsible Care Department provides a wide range of support for both domestic and overseas DIC Group companies (a total of 49 business sites), regardless of size, with the aim of enhancing Responsible Care initiatives Groupwide.

Information Disclosure and Dialogue with Stakeholders

The DIC Group strives to increase the transparency of its activities through the active disclosure of information while at the same time promoting dialogue with stakeholders by, among others, presenting safety- and environment-related data on the DIC website, in reports and through other media. The Group also undertakes initiatives to promote communication with society, including through community meetings.

Responsible Care Auditing

Basic Approach

Responsible Care Department specialists with expertise, experience and auditing capabilities regularly visit DIC Group companies to assess the status of Responsible Care initiatives. In addition, top management ESH audits, which include participation by DIC's President and CEO, as well as by senior executives and executive officers, are conducted at multiple sites each year with the goal of enhancing Responsible Care performance levels across the domestic DIC Group.

Overseas, Responsible Care Department specialists and regional ESH officers assess the progress of efforts at production sites and work together to enhance the effectiveness of Responsible Care initiatives.

Audits in Fiscal Year 2014

In line with its goal of strengthening Responsible Care management across the DIC Group, in fiscal year 2014 DIC inaugurated a program whereby responsible care officers audit relevant domestic consolidated Group companies to verify efforts and provide support for improvement activities. Audits equivalent in level to parent company audits were conducted at two domestic Group companies. DIC will gradually expand this undertaking to include other Group companies.

Similar efforts are also under way at overseas Group companies. Fiscal year 2014, saw Responsible Care audits conducted at four companies in Greater China. This process entails target companies conducting self-evaluations using a common checklist. The Responsible Care Department examines the appropriateness of self-evaluations from a third-party perspective and proposes improvements and the implementation of more advanced initiatives.

DIC President and CEO Yoshiyuki Nakanishi participates in a fiscal year 2014 top management ESH audit at the Tohoku plant of DIC Kitanihon Polymer Co., Ltd.

Occupational Safety and Health, Security and Disaster Prevention

Goals and Achievements of Major Initiatives

Objectives of initiatives	Goals for fiscal year 2014	Achievements in fiscal year 2014	Evaluation	Goals for fiscal year 2015
Ensure occupational safety and health. Promote hands-on safety training.	• Continue to promote the improvement of risk assessment skills. • Share and make effective use of accident-related information across the DIC Group. • Establish hands-on safety training as a permanent component of employee education and make effective use thereof across the DIC Group.	• Assessments were promoted at domestic DIC Group companies in line with risk assessment guidelines. • Causes of accidents were analyzed and information was provided in a timely manner. • The Saitama Hands-on Safety Training Center was opened. The new facility provided hands-on safety training for new recruits.	★★★	• Continue to promote the improvement of risk assessment skills. • Share and make effective use of accident-related information across the DIC Group. • Establish hands-on safety training as a permanent component of employee education and make effective use thereof across the DIC Group.
Promote the sharing of information on safe working environments among DIC Group companies in Japan and overseas.	• Continue the activities of the Safe Corporate Climate Cultivation Working Groups. • Share safety information at working group meetings.	• An illustrated version of *Principles of Safe Conduct* was produced (for workplace reading circles established to enhance employee awareness). • Various types of safety information were exchanged.	★★★	• Continue the activities of the Safe Corporate Climate Cultivation Working Groups. • Share safety information at working group meetings.
Ensure the safe management of chemical substances during transport.	• Formulate measures for preventing problems during transport and deploy across the DIC Group. • Promote safety management in the transport of chemical substances.	• The code framework was reviewed to facilitate the identification of Yellow Card numbers on delivery slips. • Training based on potential problems during transport was offered.	★★★	• Formulate measures for preventing problems during transport and deploy across the DIC Group. • Promote safety management in the transport of chemical substances.
Encourage the safety and environmental management initiatives of Group companies in the Asia–Pacific region.	• Expand the number of sites offering hands-on safety training. • Continue to hold meetings for personnel in charge of safety. • Continue to conduct safety and environmental audits.	• Greater China: One subsidiary introduced hands-on safety training. • Asia–Pacific region: A meeting was held for personnel in charge of safety at regional Group companies in February 2014; 16 Group companies participated. • Safety and environmental audits were conducted at 16 companies in the PRC, three companies in Taiwan and eight companies in the Asia–Pacific region.	★★★	• Expand the number of sites offering hands-on safety training. • Continue to hold meetings for personnel in charge of safety. (Switch from biennial to annual meetings in Greater China and the Asia–Pacific region.) • Continue to conduct safety and environmental audits and enhance the competence of ESH coordinators. • Provide support for autonomous ESH management efforts.
Manage safety and environmental data.	• Collect and analyze data from all overseas Group companies. • Continue to assist the efforts of three subsidiaries in the Asia–Pacific region and four subsidiaries in Greater China designated as being in need of special safety-related support.	• An index was drawn up based on safety and environmental data collected from overseas Group companies (Greater China and the Asia–Pacific region, Sun Chemical Group), and targets were set. • Efforts to assist three Group companies in the Asia–Pacific region and four in Greater China positioned as sites in need of special safety-related support continued.	★★★	• Continue to assist the efforts of subsidiaries in the Asia–Pacific region and in Greater China designated as being in need of special safety-related support.

Occupational Safety and Health

Prioritizing Safe Operations

The DIC Group recognizes that operational safety is fundamental to its operations, as well as a core component of Responsible Care. Accordingly, the Company undertakes occupational safety and health, security and disaster prevention method measures to foster a "safety first" philosophy Groupwide and in the mind of every employee.

Because its manufacturing operations span diverse fields, the DIC Group has numerous production processes that use hazardous and toxic materials and rotating devices, including ones that do not involve chemical reactions. Any accident involving such materials or devices has the potential to significantly impact society in general and damage the health of the Group and partner company employees and of local residents.

With the aim of preventing such accidents, the DIC Group places a high priority on reducing risks in the workplace by enhancing awareness of *Principles of Safe Conduct* and training safety personnel. The Group strives to enhance safety through efforts to reinforce its safety infrastructure and create a safety-oriented corporate culture.

Basic Approach

As a responsible member of society and a company that manufactures and sells chemical substances, the DIC Group recognizes that proper consideration for ESH is fundamental to its operations and works to incorporate this awareness into all of its business activities.

Guided by this philosophy, the DIC Group analyzes accidents and communicates information thus derived, based on which it undertakes risk assessment with the aim of ensuring occupational safety and health.

Initiatives in Fiscal Year 2014

❶ Promoting Appropriate Regional Benchmarks

The DIC Group conducts its diverse businesses in accordance with a wide range of national and regional legal systems, working environments and practices. The risk of accidents and disasters varies from one industry to another because of differences in the facilities, machineries and raw materials used. For Group companies to work as one to improve occupational safety and health, it is therefore crucial to establish appropriate benchmarks for each region (Japan, Greater China, the Asia–Pacific region and the Americas, and Europe).

In fiscal year 2014, DIC defined accidents, disasters and reporting procedures for each region, as well as gathered and shared statistical information related to occupational safety, including employee numbers, working hours, number of accidents leading to workdays lost, number of accidents not leading to workdays lost, number of accidents involving fires/explosions, workdays lost, workdays lost before restart of operations, occupational accident frequency rate, occupational accident severity rate, work days lost per thousand employees and workdays lost per million work hours.

This approach made it possible to objectively compare the operational safety of individual Group companies, establish more precise targets and facilitate improvement programs to assist overall Group management. The DIC Group has used these benchmarks to formulate specific regional targets for fiscal year 2015 and will continue working to improve its performance.

VOICE from the DIC Group

General Manager, Responsible Care Department (as of March 2015) **Shinichi Irumagawa**

We are working to create a suitable condition to pursue more ambitious targets.

The ability of Group companies in different countries and operating environments to objectively assess their own activity levels influences their ability to set new targets and their motivation. For this reason, the establishment of benchmarks based on statistical data gathered in fiscal year 2014 is particularly significant in that it has ensured consistency between initiatives implemented by individual Group companies and overall Group objectives and put both Group companies and the parent company firmly on the same page in terms of seeking to enhance capabilities.

Looking ahead, DIC and regional DIC Group companies will step up collaboration and work to incorporate benchmarks into specific improvement efforts. This will enhance the effectiveness of occupational safety and health and other Responsible Care initiatives.

❷ Reducing Risks

By understanding potential risks in production processes, facilities and devices, and the hazards of chemical substances, the DIC Group systematically also prepared initiatives to prevent accidents and occupational injuries. The Group also creates risk assessment guidelines when deploying new or modified equipment or changing production processes, informs business sites about the guidelines and conducts training workshops.

In line with its commitment to reduce risks, management has mandated that domestic DIC Group companies and affiliates identify risk assessment targets and conduct assessments, setting a deadline of three years from the inauguration of this effort in 2014. To ensure a smooth process, the Responsible Care Department and Production Control Department held 27 Risk Assessment Workshops at 16 sites around Japan for approximately 400 participants. Production and business sites are formulating implementation plans and providing appropriate training to the individuals responsible for conducting the risk assessments.

❸ Training Skilled Safety Personnel to Predict Risks

The DIC Group regularly educates skilled safety personnel on how to handle chemical substances, using materials such as its *Principles of Safe Conduct* and *Environment and Safety Guidelines for the R&D Department*, as well as safety data sheets (SDSs) and its Occupational Accident Case Studies database. In recent years, the Group has focused especially on a risk prediction training technique called Kiken Yochi Training (KYT) ("hazard prediction training") and on hands-on safety training for employees of Group companies worldwide.

The Group also undertakes initiatives to enhance understanding of the importance of safe workplace conduct at production sites, particularly those in Greater China and the Asia–Pacific region. Local personnel have voluntarily translated *Principles of Safe Conduct*, as a result of which the document is now available in English, Chinese, Korean and Malay.

KYT is a constructive way to further increase safety awareness. Domestic DIC Group companies use the technique extensively, and the Group is working to accelerate its deployment in Greater China and the Asia–Pacific region.

❹ Promoting Hands-On Safety Training

Hands-on safety training is an effective alternative to classroom-based learning that uses actual equipment to simulate potential risks in the workplace, thereby heightening employees' awareness of the importance of proper safety. The DIC Group initiated a full-fledged hands-on safety training program in 2012. The majority of employees at Group companies in Japan and overseas have taken part in such training, which bases simulations on actual previous accidents, including those involving being caught in machinery or electrical discharges or fires from static electricity.

In fiscal year 2013, Group units in Japan added five new categories of hands-on training using three types of equipment to the program, which centers on a mobile initiative that travels from site to site. In fiscal year 2014, the program focused on preventing fires from static electricity, with additional equipment introduced in line with this theme.

In light of a high frequency of accidents at domestic production facilities involving young employees with less than three years of experience, in fiscal year 2014 the DIC Group included two days of safety training and KYT in the training curricula for new employees. As a result, there were no reported occupational accidents involving new employees for the year.

Number of Hands-On Safety Training Participants in Fiscal Year 2014

DIC	DIC Group (Japan)	DIC Group (including overseas operations)
727 (6 sites)	**895** (23 sites)	**1,419** (29 sites)

❺ Top Executives Appear in Posters Promoting the Principles of Safe Workplace Conduct

Poster featuring the president of DIC Decor, Inc. (Japan)

Poster featuring the president of PT. DIC Graphics (Indonesia)

Poster featuring the general manager of DIC Corporation's Komaki Plant (Japan)

In fiscal year 2013, the DIC Group produced posters featuring the president and CEO of DIC, Yoshiyuki Nakanishi, to highlight the importance of safe workplace conduct, underscoring DIC's commitment to reinforcing its safety infrastructure and creating a culture of safety. These posters were prepared in three languages—Japanese, English and Chinese—and hung at production and business sites in all countries and territories where the DIC Group has operations. In fiscal year 2014, this initiative expanded to include posters featuring Group company presidents and plant general managers from around the world reminding employees of the importance of putting safety first.

Topic 1

The new Saitama Hands-on Safety Training Center and its unique training techniques

In April 2014, DIC opened the Saitama Hands-on Safety Training Center, which is located adjacent to its Saitama Plant in Japan. The facility, which boasts a wide range of equipment and machines that allow employees to simulate an array of accidents, is used in new employee and skill-specific training programs to heighten safety awareness.

One of the features that both trainees and visitors find surprising at the center is that hands-on safety training does not provide absolute answers. Once trainees understand the horrible consequences of accidents through simulations, it is up to them to determine the best way to avoid causing or being involved in accidents in their particular workplaces. This is because DIC believes that safety begins with awareness and that awareness is not something that can be taught, but rather something that one gains through experience. In keeping with this approach, DIC's Chiba, Sakai, Hokuriku, Saitama, Kashima and other plants have established their own hands-on safety training equipment and curriculums with the purpose of fostering a culture of safety.


Entrance to Saitama Hands-on Safety Training Center


New employees presenting case studies


New employees simulating getting caught in a chucking apparatus

DIC is working to increase the number of sites in Japan and overseas that have permanent hands-on safety training facilities. In fiscal year 2013, facilities were established at two sites in Greater China (Nantong DIC Color Co., Ltd., a manufacturer of printing inks and organic pigments, and DIC Graphics (Guangzhou) Ltd., which manufactures printing inks, both in the PRC) and at two sites in the Asia–Pacific region (Taiwan-based DIC Graphics Chia Lung Corp., a manufacturer of printing inks, and DIC Compounds (Malaysia) Sdn. Bhd., which manufactures compounds). In fiscal year 2014, DIC installed hands-on safety training facilities at PT. DIC Graphics in Indonesia, a manufacturer of printing inks, and Changzhou Huari New Material Co., Ltd. in the PRC, which manufactures synthetic resins.

In addition to providing regular hands-on safety training for local DIC Group company employees, these sites provide education for safety instructors. These efforts play a key role in enhancing safety awareness and encouraging safe workplace practices.

Topic 2

DIC safety officers' conferences in Greater China and the Asia–Pacific region will be expanded from fiscal year 2015

DIC extends support for safety-related initiatives at overseas Group companies by holding biennial safety officers' conferences in Greater China and the Asia–Pacific region, which provide opportunities for DIC Group company safety officers in both regions to discuss issues and share information.

Conference participants exchange views on initiatives in such areas as safety performances, progress in deploying safety management systems, ways to enhance the effectiveness of safety training and education, and environmental protection initiatives. They also take part in hands-on safety training to gain experience that they can later apply when at their own workplaces.

A total of 24 officers from 16 companies (including participants from Japan) attended the fiscal year 2014 Asia–Pacific region safety officers' conference, which was held in Malaysia. In response to robust demand, it was resolved that such conferences would be held annually from fiscal year 2015 forward.

With the introduction of specific numerical targets for safety-related initiatives based on risk assessments in fiscal year 2015, these conferences will also be expanded to include reporting on the progress of priority items and action plans, the use of self-assessment check sheets, poster sessions introducing good practices and theme-specific group discussions, which the Company expects to facilitate more lively debates and a more in-depth exploration of key issues.

The DIC Group will continue to foster human resources with a keen awareness of safety, as well as to create a Groupwide culture of safety, through regional safety officers' conferences, the fundamental goal of which is to enhance the capabilities of Group companies and establish a mechanism for promoting autonomous, localized Responsible Care initiatives.


Plenary session of the fiscal year 2014 Asia–Pacific region safety officers' conference (Malaysia)


Hands-on safety training for participants in the fiscal year 2014 Asia–Pacific region safety officers' conference


Accident analysis training at the Greater China safety officers' conference in March 2015

Status of Occupational Accidents

In fiscal year 2014, the number of occupational accidents at DIC and DIC Group companies in Japan declined, as did the domestic DART rate*. The number of occupational accidents for the global DIC Group also decreased. These results reflected the thorough adherence to *Principles of Safe Conduct* and increased employee safety awareness, both attributable to the implementation of risk assessments and efforts to reinforce hand-on safety training. (Since fiscal year 2008, the DIC Group has deployed the DART rate, a common indicator used in various countries, with the aim of improving the effectiveness of its safety initiatives.) For fiscal year 2015, the Group has formulated specific targets based upon benchmarks set for each region, and will step up efforts to ensure the safety of its operations around he world.

* The Days Away, Restrictions and Transfers (DART) rate is calculated as N/EH x 200,000.
(N = total days away from work. EH = total annual hours worked by all employees.
The 200,000 hours in the formula represents the equivalent of 100 employees working 40 hours per week for 50 weeks per year.)

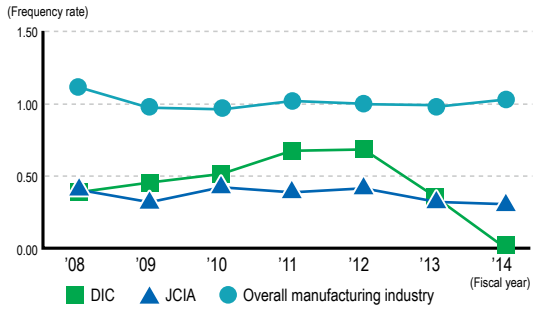
Workdays Lost Due to Occupational Accidents in Fiscal Year 2014

(Figures in parentheses are for fiscal year 2013)

	DIC	DIC Group (Japan)	DIC Group (global)
Number of workdays lost	0 (2)	4 (6)	80 (84)
Frequency rate	0.000 (0.338)	0.429 (0.622)	2.133 (–)
Severity rate	0.000 (0.001)	0.006 (0.018)	–
DART rate	0.1 (3.5)	9.6 (16.0)	20.3 (17.8)

Note: Effective from fiscal year 2014, the scope of "DIC Group (global)" was amended to include all DIC Group companies worldwide, including those in the Americas and Europe.

Frequency Rate

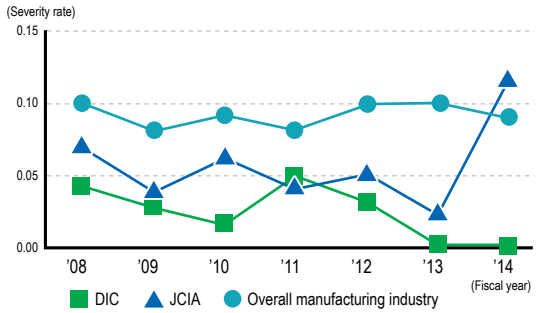


Frequency rate: This expresses the frequency of accidents resulting in lost time in a fiscal year, calculated as the number of deaths or injuries per million work hours.

$$\text{Frequency rate} = \frac{\text{Number of occupational deaths or injuries}}{\text{Total work hours}} \times 1{,}000{,}000$$

A frequency rate of 1.0 means one occupational accident resulting in workdays lost in one year at a site with 500 people.

Severity Rate



Severity rate: This expresses the number of workdays lost due to occupational accidents per 1,000 work hours.

$$\text{Severity rate} = \frac{\text{Total number of workdays lost}}{\text{Total work hours}} \times 1{,}000$$

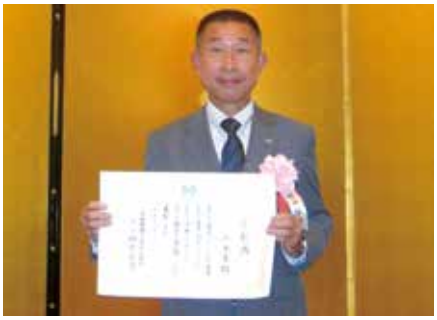
A severity rate of 0.1 means 100 workdays lost in one year at a site with 500 people.

Topic

DIC employee wins JISHA Green Cross Award

Yasuaki Oohira, senior manager of the Responsible Care Department and in charge of environmental and safety initiatives, received the Green Cross Award from the Japan Industrial Safety and Health Association (JISHA). JISHA bestows the award annually in recognition of individuals and groups who have helped advance occupational safety and health over many years and have made noteworthy achievements.

As one of the principal individuals responsible for occupational safety and health at DIC, Mr. Oohira has developed and deployed safety initiatives entailing full employee participation, spearheaded the formulation and revision of risk assessment guidelines and promoted hands-on safety training across the DIC Group. Mr. Oohira also participated in the establishment and promulgation of a safety assessment system for evaluating and enhancing the safety capabilities of industrial sites by the Japan Society for Safety Engineering (JSSE)'s Safety Competency Enhancement Center. These and other commendable endeavors encouraged the Japan Chemical Industry Association (JCIA)* to recommend Mr. Oohira for the Green Cross Award.



Mr. Oohira holding his Green Cross Award certificate

* JCIA is a general incorporated association. As one of Japan's major industry organizations, JCIA is a member of the International Council of Chemical Associations (ICCA) and pursues the healthy development of the chemical industry with other chemical-industrial organizations around the world.)

Safe Corporate Climate Cultivation Working Groups

Safe Corporate Climate Cultivation Working Groups comprise personnel in charge of safety at plants belonging to DIC and subsidiary DIC Graphics Corporation. These groups have been active since fiscal year 2010. Members meet regularly to discuss and exchange proposals regarding safety policies and measures. In fiscal year 2012, these groups presented recommendations on safety policies and produced warning stickers to enhance awareness of workplace hazards. In fiscal year 2013, the working groups prepared safety posters and proposed the reading out of key passages from *Principles of Safe Conduct* in the workplace as a measure to enhance employee awareness as part of efforts to reinforce worksite activities.

In fiscal year 2014, the groups produced an illustrated version of the *Principles of Safe Conduct* for workplace reading circles with the goal of promoting employee understanding. In fiscal year 2015, the groups edited the booklet into a tear-off calendar version for distribution at all workplaces to further strengthen the DIC Group's culture of safety. These materials will be translated into English and Chinese for use throughout the Group.

Pages from the illustrated version of *Principles of Safe Conduct* for workplace reading circles

Occupational Health

The DIC Group handles a broad range of chemicals, including specified chemical substances and organic solvents. The Group regularly carries out working environment measurements, in keeping with rules and guidelines, to safeguard the health of employees working in related businesses and modifies and improves working conditions as necessary. Occupational health physicians and other experts conduct specialized health checks and inspect workplaces as part of worker health management.

Initiatives in Fiscal Year 2014

Japanese laws and regulations mandate that companies handling specified chemical substances with the potential to cause serious health problems as a result of long-term exposure must maintain appropriate working environments as well as store work and health check records for 30 years. Companies must also maintain storage space for these records to minimize the risk of paper-based documents going astray or becoming lost.

In fiscal year 2014, the domestic DIC Group built a centralized data management system comprising an information network linking each work site, facilitating the electronic recording and storage of data for each employee and the review of information by supervisors and administrators. This approach ensures consistent recording formats at each site and helps eliminate the risk of records going astray while resolving the issue of storage space. Use of the system began at DIC's Tatebayashi and Komaki plants and at DIC Graphics' Kansai Plant and will be expanded to DIC's Kashima, Chiba and Hokuriku plants, DIC Graphics' Gunma Plant and other large facilities after briefings.

Security and Disaster Prevention

Basic Approach and Organization

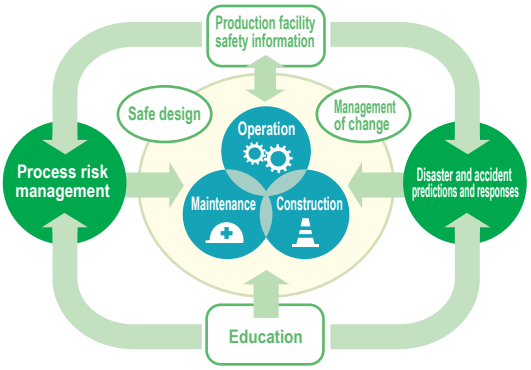
Any fire, explosion or leak of hazardous substances from a chemical plant could have a tremendous impact on local residents and the rest of the community and damage the health of employees, including those of partner companies.

In addition to establishing a security management system to prevent such accidents, the DIC Group operates and maintains its facilities in line with pertinent laws and regulations. The Group regularly conducts emergency drills and has earthquake and other response measures in place.

DIC also undertakes risk assessments to ensure its ability to construct safe production facilities. In 2013, the Group formulated the DIC Process Risk Management (PRM) Guidelines*, which consist of four assessment techniques and implementation timetables for each. The Group uses these tools to conduct regular risk assessments at each of its sites.

* The DIC PRM Guidelines outline timetables and implementation frameworks for assessing the handling of chemical substances, production processes, production formulas, machinery and work practices with the aim of comprehensively identifying and steadily reducing risks associated with production and R&D processes.

Conceptual Illustration of DIC's Safety Infrastructure



Facility Safety Assessment

❶ Assessment Procedures

DIC Group production facilities have a vast array of equipment, ranging from units where chemical reactions are conducted to machine presses and other processing equipment. When modifying processes or upgrading/replacing equipment, safety is assessed at every stage from process design and construction through to operation, maintenance and final disposal, in line with risk assessment guidelines for reaction processes and for equipment and facilities, to ensure higher safety levels for new processes and facilities.

❷ Accident and Disaster Analysis and Timely Information

DIC collects and compiles information on internal and external accidents, disasters and problems into its Occupational Accident Case Studies and Accident Case Studies databases. After identifying the causes of accidents or problems and establishing points to be checked, the Company incorporates database information into safety education for DIC and DIC Group companies in Japan and overseas.

❸ Initiatives to Enhance Safety Competency

A company's safety competency can be defined as its ability to maintain safety levels at its various sites. DIC's safety assessment system encompasses questions about safety infrastructure (technical considerations) and the Company's culture of safety (operation and management of organizational culture). DIC introduced this system in fiscal year 2013 as a means of objectively evaluating and enhancing its safety capabilities. This system was developed by the Japan Society for Safety Engineering (JSSE), and is a common benchmark for engineers in the petrochemicals industry. The system is currently used by the 19 major corporations in Japan that jointly established the Safety Competency Enhancement Center.

In fiscal year 2013, the DIC Group upgraded the system after testing, and in fiscal year 2014 voluntary safety assessments were conducted at the Hokuriku, Yokkaichi and Kashima plants. The Kashima Plant underwent a third-party assessment by an evaluator from the Safety Competency Enhancement Center. The plant formulated an improvement proposal based on the results, reflecting the contents in its activities policy for fiscal year 2015.

VOICE from the DIC Group

Senior Manager of the Responsible Care Department **Yasuaki Oohira**

I look forward to drawing on DIC's expertise in improving safety competency to assist companies in other industries.

As a supporting member of JSSE's Safety Competency Enhancement Center, DIC has participated in the establishment and promulgation of a safety competency assessment system. This focused initially on continuous process plants. In 2014, we set up a working group to create a safety assessment competency system for processing plants. I am in charge of this working group and am involved closely in planning and development.

We have recently received plant safety competency assessment requests from companies in industries outside the chemicals arena. I am happy to be able to draw on the expertise we have accumulated to help reinforce the safety infrastructures and safety cultures of companies in other industries.

Emergency Response Drills

DIC augments daily security patrols and periodic equipment checks with regular emergency response drills, especially at production sites in Japan and overseas, to ensure that it is prepared in the event of an emergency situation.

Topic

Comprehensive disaster drill with Hokuriku Plant neighborhood

On June 11, 2014, DIC's Hokuriku Plant, in Ishikawa Prefecture, held a large comprehensive disaster drill with the fire prevention and safety association and the fire department of the city of Hakusan–Nonoichi. The 50 participants included members of the plant's firefighting team and of the fire departments of neighboring companies.

The scenario for the drill was that a hazardous substance container in front of a multilevel storage facility had fallen over as a result of a strong earthquake and caught fire. One part of the drill involved the plant's in-house firefighting squad and the local fire department mobilizing to rescue the injured individuals and fight the fire. The other part, which involved petroleum being set alight, enabled participants from the local fire prevention and safety association to experience heat, flames and smoke firsthand and practice using firefighting agents.

The event served to remind employees of the importance of preventing accidents and disasters and maintaining operational safety and of its fundamental goal of achieving zero accidents.

Fire department in action

Practice in the use of firefighting foam

In-house firefighting squad

Safety Management in Logistics

The DIC Group commissions logistics firms to transport its chemical products. In Japan, these firms use containers that comply with the Fire Service Act and other transportation laws, as well as with related United Nations' standards. The Group supplies information needed to display labels complying with GHS*1 as well as provides SDSs, and other documentation to ensure safe shipping in Japan and overseas. DIC endeavors to maintain and enhance safety by requiring transport personnel to carry Yellow Cards*2 to ensure proper responses in the event of an emergency and by meeting monthly with representatives from logistics firms to discuss safety and transportation quality.

Yellow Card carried by transport personnel

*1 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
*2 Yellow Cards are part of activities recommended by JCIA. The cards contain information about the right actions to take if an accident occurs and provides contact details to ensure proper responses by transportation companies, firefighters and police officers if an accident occurs during the transport of chemical substances. Transport personnel must carry these cards at all times.

Preventing Global Warming

Goals and Achievements of Major Initiatives

Objectives of initiatives	Goals for fiscal year 2014	Achievements in fiscal year 2014	Evaluation	Goals for fiscal year 2015
Promote the prevention of global warming and advance energy-saving initiatives.	DIC Group (Japan) • Reduce energy consumption per unit of production 1% from the fiscal year 2013 level.	DIC Group (Japan) • Energy consumption per unit of production declined 3.4%.	★★★	DIC Group (Japan) • Reduce energy consumption per unit of production 1% from the fiscal year 2014 level.
	• Reduce CO_2 emissions 1% from the fiscal year 2013 level.	• CO_2 emissions fell 9.1%.	★★★	• Reduce CO_2 emissions 1% from the fiscal year 2014 level.
Reduce emissions of greenhouse gases during transport.	DIC Group (Japan) • Promote modal shift and improve transport efficiency with the aim of reducing energy consumed per unit of production.	DIC Group (Japan) • Energy consumed per unit of production declined 5.0%.	★★★	DIC Group (Japan) • Promote modal shift and improve transport efficiency with the aim of reducing energy consumed per unit of production.
	• Reduce CO_2 emissions from logistics.	• CO_2 emissions from logistics were down 5.2%.	★★★	• Reduce CO_2 emissions from logistics.

Note; Effective from fiscal year 2014, CO_2 emissions include emissions from non-energy sources (11,566 tons in fiscal year 2014)

Basic Approach

Climate change, a principal cause of which is global warming, is an increasingly pressing issue for the entire world. The Intergovernmental Panel on Climate Change (IPCC), a leading scientific body dedicated to the assessment of climate change, continues to urge its member countries to reinforce and expand the application of climate change countermeasures. With 19 of its 33 Group sites in Japan accorded Designated Energy Management Factory status, DIC has included initiatives aimed at reducing greenhouse gas emissions from its production facilities in its annual sustainability policy for fiscal year 2015. The Company is currently implementing initiatives to reduce its consumption of energy—and thus its emissions of CO_2—as well as promoting the active disclosure of related data.

1. Undertake energy-saving initiatives Groupwide.
2. Deploy effective strategies through working group activities.
3. Operate energy-saving cogeneration systems (combined heat and power generating facilities).
4. Employ energy from renewable resources (biomass, wind power and solar power) at suitable sites.

In fiscal year 2013, DIC inaugurated conservation efforts at overseas DIC Group companies, which consume approximately 1.6 times more energy than their domestic counterparts.

Framework for Promoting Energy-Saving Initiatives

DIC and DIC Group companies in Japan have established energy-saving promotion committees at each of their production and R&D sites. Committee activities include confirming the progress of initiatives, engaging in discussions and conducting patrols. DIC has also set up an energy-saving working group comprising members chosen from each production facility that fosters the exchange of information, research pertaining to new items and the Groupwide implementation of effective measures. This combination of site- and Group-level initiatives forms the framework under which the DIC Group works to reduce CO_2 emissions.

DIC Group companies overseas promote a wide range of independent energy-saving initiatives. The Production Control Department provides support on multiple fronts, including the deployment of management systems and the training of employees.

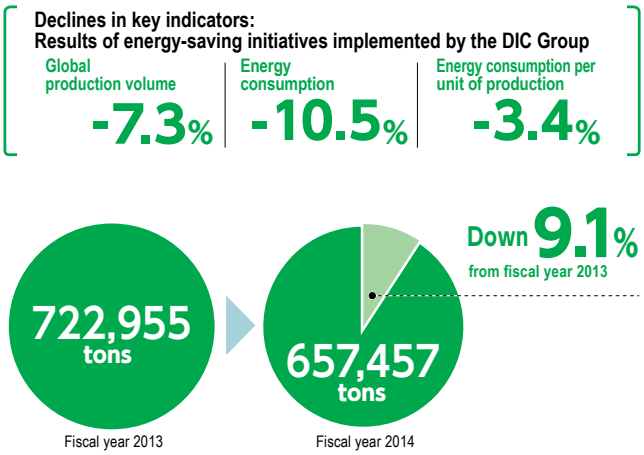
Principal Initiatives in Fiscal Year 2014

❶ Energy Consumption and CO_2 Emissions by the Global DIC Group

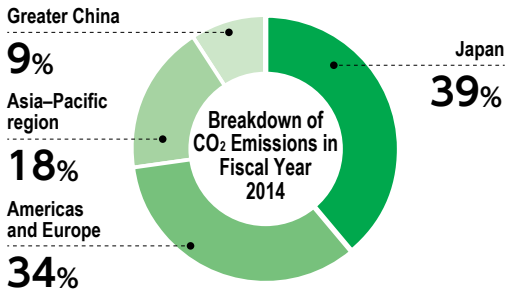
The DIC Group views energy consumption per ton of production as an important measure of its energy efficiency. Against a 7.3% decrease in global production volume, the volume of energy consumed by the global DIC Group in fiscal year 2014, calculated in kiloliters of crude oil, amounted to 288,452 kiloliters, down 10.5% from 322,210 kiloliters in the preceding fiscal year, while energy consumption per unit of production declined 3.4%, to 148.4 liters/ton, from 153.7 liters/ton in fiscal year 2013.

The Group also succeeded in reducing its global CO_2 emissions a remarkable 9.1% in fiscal year 2014, to 657,457 tons, from 722,955 tons in fiscal year 2013. This achievement was attributable to energy conversion and the installation of energy-efficient equipment at production facilities and other business sites worldwide, as well as to process improvements and the steady implementation of energy-saving initiatives.

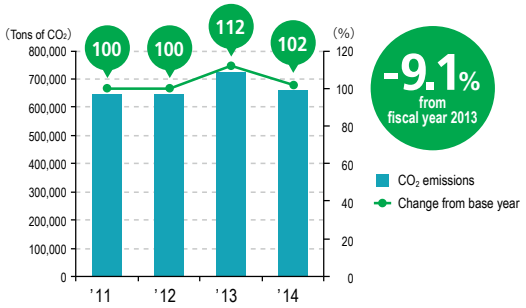
Global CO_2 Emissions in Fiscal Year 2014



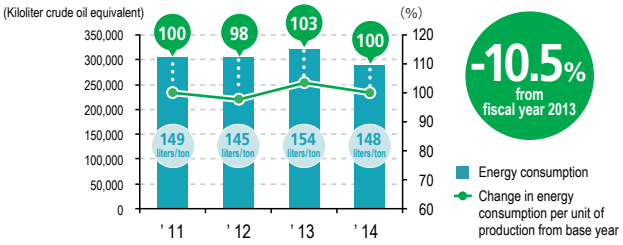
CO_2 Emissions in Fiscal Year 2014 by Region



Global CO_2 Emissions and Change from Base Year



Global Energy Consumption and Change in Energy Consumption Per Unit of Production from Base Year



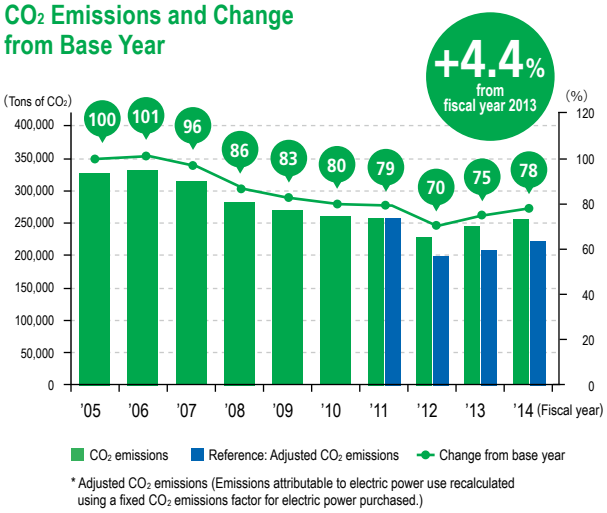
Note: Energy consumption per unit of production (liters per ton) is calculated as energy consumption divided by production volume

❷ Energy Consumption and CO_2 Emissions by the DIC Group in Japan

In fiscal year 2014, the DIC Group in Japan—which encompasses the 33 business sites of DIC and its domestic Group companies—reported a 3.6% decrease in production volume and a 1.4% decline in energy consumption. Nonetheless, energy consumption per unit of production rose 2.3%. The principal factor behind this result was a deterioration of energy efficiency resulting from high-mix/low-volume production and an increase in base load resulting from the installation of a clean room to further enhance product quality. In contrast, CO_2 emissions were up 4.4%, owing to the inclusion from fiscal year 2014 of emissions from non-energy sources (incinerators). If CO_2 emissions had been calculated on the same basis as in fiscal year 2013, the Group would have reported a 0.3% decline.

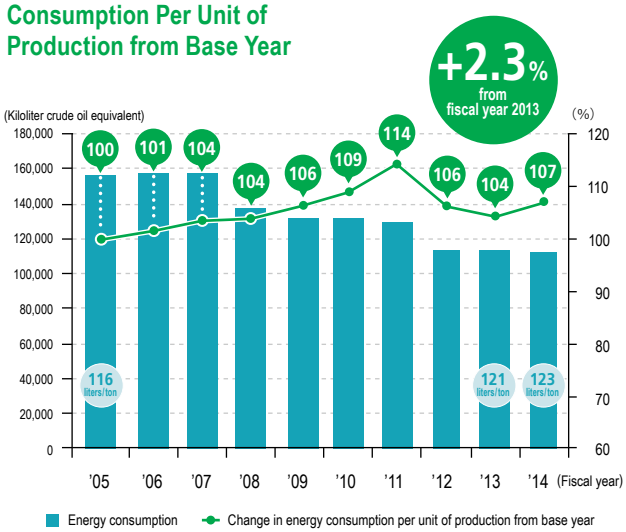
DIC Group in Japan

CO_2 Emissions and Change from Base Year



* Adjusted CO_2 emissions (Emissions attributable to electric power use recalculated using a fixed CO_2 emissions factor for electric power purchased.)

Energy Consumption and Change in Energy Consumption Per Unit of Production from Base Year



Principal Reason for Increase in Energy Consumption Per Unit of Production

The increase in energy consumption per unit of production by the DIC Group in Japan in fiscal year 2014 was primarily attributable to the start of operations by a new production facility for PPS neat polymer (an engineering plastic) at the Kashima Plant in Japan.

Factors Contributing to Increase in CO_2 Emissions by the DIC Group in Japan in Fiscal Year 2014

Factor	Impact on CO_2 emissions (tons)	Change in weight* (percentage points)	Notes
Impact of energy-saving initiatives	-6,883	-2.8	The implementation of 488 energy-saving initiatives accounted for a 2,677 kl reduction in energy consumption.
Changes in business portfolio	-3,250	-1.3	Changes were due to, among others, DIC taking over the business of an affiliate.
Increase in operation of facilities powered by renewable energy at the Kashima Plant	-3,184	-1.3	Heat and power generated using renewable energy (biomass boilers, wind power) increased 11% from fiscal year 2013, to 14,919 kl.
Reduction of production volume	-1,740	-0.7	
Others	5,990	2.5	
Start of full-scale operations at new PPS neat polymer production facility at the Kashima Plant	8,148	3.3	Energy consumption per unit of production at the new facility is high.
Inclusion of CO_2 emissions from non-energy sources from fiscal year 2014	11,566	4.7	CO_2 emissions from non-energy sources were included for the Chiba Plant only in fiscal year 2013. In fiscal year 2014, such emissions were included for all domestic plants.
Total	10,648	4.4	

* Increase or decrease in percentage of total CO_2 emissions from fiscal year 2013

❸ Energy-Saving Initiatives in Japan

The DIC Group promoted a number of highly successful energy-saving initiatives in Japan in fiscal year 2014. A total of 488 initiatives were implemented at domestic business sites, namely, plants and R&D sites. These included integrating production and replacing waste-heat boilers to reduce consumption of thermal energy, reconsidering refrigerants used in and the operating hours of air conditioning equipment to lower consumption of electric power, ensuring the efficient operation of air compressors and replacing existing lighting fixtures with LED lights to reduce the use of electricity. The Group also switched to clean energy, that is, to town gas from heavy oil, to fuel boilers at the Kashima Plant. These initiatives reduced energy consumption by 2,677 kiloliters (crude oil equivalent) (associated reduction in CO_2 emissions: 6,883 tons), equivalent to 13,385 200-liter drums of crude oil, or 2.8% of total energy consumption by the DIC Group in Japan in fiscal year 2013.

Results of Energy-Saving Initiatives in Japan in Fiscal Year 2014

	Number of initiatives	Reduction in energy consumption (kl)	Reduction in CO_2 emissions (tons of CO_2)
DIC Corporation	406	2,175	5,859
Domestic DIC Group companies	82	502	1,024
Total	488	2,677	6,883

488 energy-saving initiatives accounted for a reduction in energy consumption equivalent to 13,385 200-liter drums of crude oil.

Expanding Application of System to Enhance the Visibility of Energy Consumption

With the aim of optimizing the use of electric power on an individual facility basis, DIC has developed a system that measures, monitors and verifies waste and irregularities in use, thereby enhancing the visibility of energy consumption. Initially installed at the Hokuriku Plant in 2012, the system—which won the ECCJ Chairman's Prize at Japan's 2012 Energy Conservation Grand Prize awards, sponsored by the Energy Conservation Center, Japan (ECCJ)—has since been rolled out at DIC business sites across Japan. In fiscal year 2014, the system was installed at the Komaki Plant. To promote the further rationalization of energy use, a system for analyzing consumption during different production processes was installed on production floor B of the Sakai Plant. This is the third location to receive this system, which was also installed on production floor V of the Chiba Plant and production floor C of the Kashima Plant in fiscal year 2013. DIC is also considering installation at the Yokkaichi Plant.

One outcome of efforts to enhance the visibility of energy consumption was an increase in the number of categories of Scope 3*, in which DIC reports indirect emissions of CO_2, from one ("upstream transportation and distribution") in fiscal year 2012 to six (including "capital goods" and "waste generated in operations") in fiscal year 2013 .

* Scope 3 is the Greenhouse Gas Protocol's standard for calculating indirect greenhouse gas emissions resulting from production, transport, business travel and commuting, among others, across entire supply chains.

Topic 1 Reducing energy consumption and increasing product quality through training to provide employees with the tools to continuously improve their work

Having recognized that enhancing the awareness of employees in production and providing them with the tools to continuously improve their work are crucial to strengthening front-line capabilities, in 2008 DIC began offering the Kaizen Skill Improvement Training program. This program—which is structured around four themes, namely, reducing energy consumption, increasing yields, enhancing product quality and rationalizing operation—seeks to foster professionals who can identify and resolve issues on their own initiative. Participants spend one year participating in initiatives aimed at improving quality control methods and the following year putting their findings into practice. Each December, achievements are presented at a briefing attended by pertinent plant general managers and directors.

Since 2012, DIC has also provided training for employees who have completed the Kaizen Skill Improvement Training program to equip them with the leadership and educational skills necessary to serve as instructors for the program. As of the end of fiscal year 2014, a cumulative total of 332 employees from DIC sites in Japan had completed the Kaizen Skill Improvement Training program, with approximately 20% subsequently going on to earn accreditation as program instructors, adding momentum to energy-saving and other initiatives.

Kaizen Skill Improvement Training

I was reminded of the importance of being able to recognize issues.

I think that the data analysis presented at the briefing was easy to understand and persuasive. We provided explanations from a variety of unique perspectives and were successful in drawing the audience in. The whole experience of the program reminded me of the importance of being able to recognize issues. I look forward to capitalizing on what I learned to continuously improve my work.

Solid Compounds Production Department, Komaki Plant **Kouichi Naito**

Topic 2

New energy-saving features of air conditioning equipment account for reduction in energy consumption of approximately 20%

Two approaches introduced at production departments' annual R&D presentation attract considerable attention

Revisions to Japan's Act Concerning the Rational Use of Energy, aimed at leveling demand for electricity, have heightened the need to improve the energy efficiency of air conditioning equipment, a major cause of rising energy consumption. Personnel at DIC's Chiba Plant directed their attention to improving the performance of refrigerants, promoting two highly successful approaches that attracted considerable attention at the R&D presentation staged by the Company's production departments every January.

Production departments' annual R&D presentation

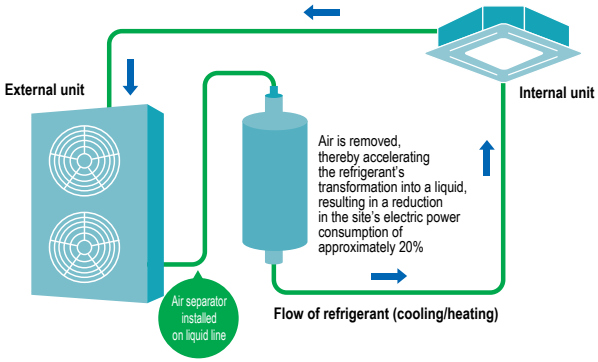
❶ Replace R-22 with a green alternative

The first approach involves replacing chlorofluorocarbon R-22, the most commonly used refrigerant for air conditioning equipment, with propane (similar to isobutane), a green refrigerant. Propane offers considerable benefits, including the fact that it does not deplete the ozone layer and has a lower global warming potential (GWP) than R-22, but its extreme flammability is a major disadvantage. For this reason, it has traditionally been viewed as unsuitable for chemical production facilities, although inverter technology has facilitated its use in environment-friendly household refrigerators. Having determined that propane is a viable alternative for certain production sites, in fiscal year 2014 air conditioning equipment using propane instead of R-22 was installed on a trial basis at the Sakai Plant, a move that reduced annual energy consumption at the facility by 20–30%.

Japan is phasing out the production and use of R-22 and other high GWP chlorofluorocarbons and has set 2020 as its target date for completing this effort. Accordingly, the search is on for green refrigerants suitable for use in air conditioning equipment. With the completion of verification testing at the Sakai Plant, the Kashima Plant also installed air conditioning equipment using propane instead of R-22 in certain areas.

❷ Increase operating efficiency by eliminating air bubbles

The second approach adopted by personnel at the Chiba Plant was to improve the performance of existing refrigerants. Air conditioning equipment exploits a process called phase conversion—the transformation of a liquid to a gas and vice versa—that occurs as a result of the repeated compression and expansion of the refrigerant—to cool or heat air. However, the degradation of equipment over time can result in the formation of air bubbles during compression, thereby hampering the refrigerant's performance. The Chiba Plant sought to address this issue by installing an air separator, which isolates and removes air, a move that significantly improved the air conditioning capacity of the equipment, helping to cut peak electricity demand and accounting for a 20% reduction in annual electric power consumption at the facility. DIC is confident that the concurrent promotion of this and the approach described above at domestic production sites will play a key role in expediting production departments' efforts to reduce energy consumption.



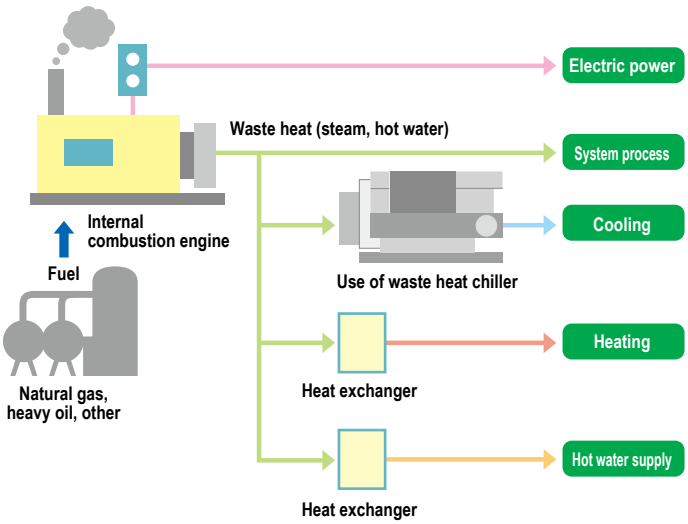
❹ Increasing Independent Electric Power Generation through Cogeneration and the Use of Renewable Energy

Increasing Cogeneration System-Based Independent Electric Power Generation

With the aim of increasing energy efficiency, and as a precaution against natural disasters, the DIC Group in Japan is promoting the systematic adoption of cogeneration and the use of renewable energy, that is, energy from sources that are naturally replenished. Cogeneration systems burn fuel to drive turbines, facilitating the production of electric power and the recovery and reuse of waste heat (steam and hot water), thereby improving energy efficiency.

The DIC Group currently has cogeneration systems at five domestic plants (Chiba, Shiga, Saitama, Gunma and Tokyo) with a combined maximum capacity of 19,000 kW. In fiscal year 2014, electric power produced by these systems accounted for 14% of the total volume of electric power used by the DIC Group in Japan. In autumn 2015, DIC will install a gas turbine-powered cogeneration system at its Kashima Plant with a capacity of 1,700 kWh. DIC is also considering updating the cogeneration system at its Chiba Plant, which currently has a capacity of 6,000 kW.

Conceptual Diagram of Cogeneration System

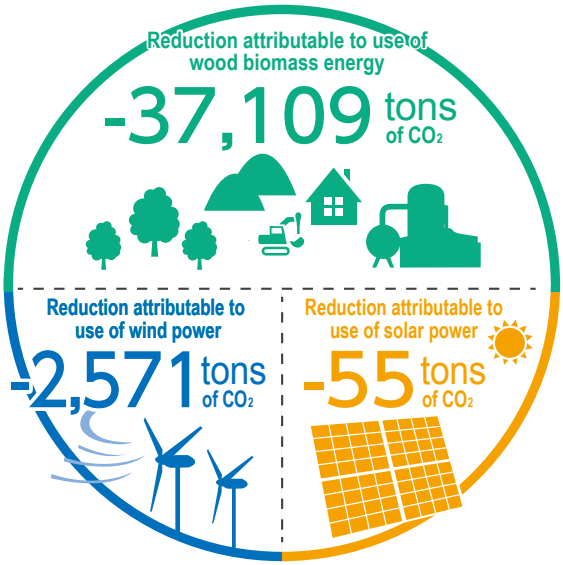


Using Renewable Energy

In Japan, the DIC Group actively promotes the use of energy from renewable sources (biomass, wind power and solar power) at suitable sites. In fiscal year 2014, DIC dramatically enhanced the generating capacity of biomass boilers (4,000 kW and 30 tons of steam per hour) by improving the quality of the wood chips used to fire boilers and reinforcing maintenance procedures, which facilitated a significant increase in operating rates, boosting output of both electric power and steam (waste heat). The Group also raised operating rates at its two wind power generation facilities (each has a generating capacity of 2,300 kW). These improvements, together with contributions from a small solar power plant, resulted in an increase in the DIC Group's renewable energy output in Japan of 7.9% from fiscal year 2013, while independently generated renewable energy accounted for 8% of all electric power consumed by the domestic Group. As a consequence, the Group's CO_2 emissions in calendar year 2014 were down 39,735 tons, or 11%, from calendar year 2013.

Leveraging the biomass boiler management technologies it has developed through operation of facilities at its Kashima Plant, in 2016 DIC plans to expand the installation of such boilers to include its Hokuriku Plant, in Ishikawa Prefecture.

CO_2 Emissions Reductions at the Kashima Plant (January–December 2014)



Electric Power Produced through Cogeneration and the Use of Renewable Energy

DIC Group (Japan)	Electric power consumed (a)	Electric power produced through cogeneration (b)	(b) as a % of (a)	Electric power produced through the use of renewable energy (c)	(c) as a % of (a)
Fiscal year 2013	292,637,000 kWh	44,268,000 kWh	-15.1%	20,938,000 kWh	7.2%
Fiscal year 2014	281,257,000 kWh	39,472,000 kWh	-14.0%	22,602,000 kWh	8.0%
Change	-11,380,000 kWh	-4,796,000 kWh	-1.1%	1,664,000 kWh	+0.8%
Change (%)	-3.9%	-10.8%		+7.9%	

Use of Renewable Energy

Electric power produced through the use of renewable energy

+7.9% from fiscal year 2013

Waste heat produced

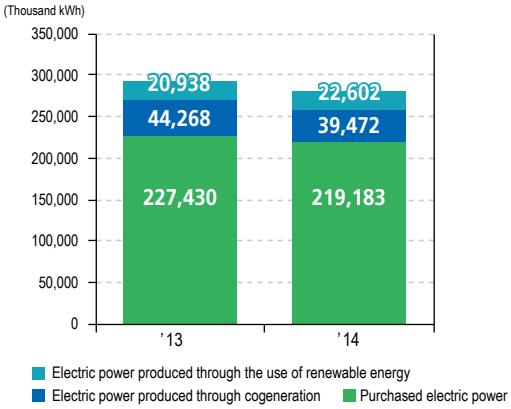
+13.0% from fiscal year 2013

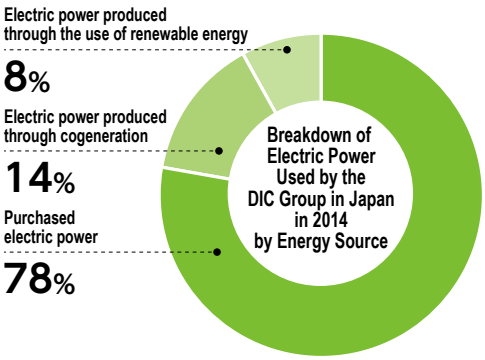
Result

Reduction in CO_2 emissions (January–December 2014)

-39,735 tons of CO_2

Electric Power Used by the DIC Group in Japan by Energy Source





Topics

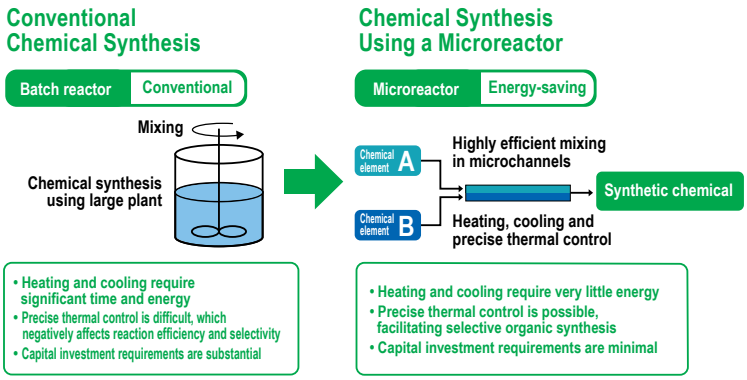
Microreactor: Realizing production processes that lower environmental impact

To date, the majority of synthetic chemicals have been produced in batch reactors, where two or more different chemical elements are combined, causing a chemical reaction, and byproducts and impurities are removed. Because heat exchange efficiency is low, heating and cooling require significant amounts of energy. Also, precise thermal control is difficult, as a result of which it is difficult to manage reaction efficiency and quality.

R&D aimed at addressing these challenges opened the way for microreactors, which employ a number of unique processes. With microreactors, the introduction of raw materials and the reaction and recovery of byproducts and impurities occurs in a continuous flow within micro fluid channels that deliver superb heat exchange efficiency. In addition to a significant reduction in energy use, microreactors facilitate precise thermal control—thereby minimizing electric power consumption and greatly improving reaction efficiency and quality—and the reduction of waste. Microreactors also allow reactions and chemical synthesis processes that are unfeasible with batch tank reactors due to safety concerns, the benefits of which include shorter lead times for plant construction.

Having recognized the potential of microreactors early on, DIC has promoted extensive R&D aimed at developing a commercially viable unit. In September 2013, the Company's Hokuriku Plant deployed a microreactor for use in the production process for fluorinated surfactants, achieving a significant improvement in reaction efficiency that reduced production time to 1/9 the previous level, thereby reducing energy consumption and essentially eliminating the generation of waste during production.

As an organization engaged in the development and production of a diverse range of chemical compounds, DIC recognizes the importance of revolutionizing production processes as a way to enhance the quality of its products and lower its impact on the environment. As such, and with the aim of ensuring its own sustainability, the Company will continue working actively to develop production processes that reduce the environmental impact of its operations.

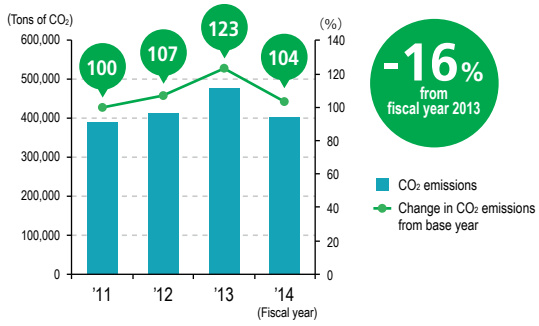


Microreactor at DIC's Hokuriku Plant

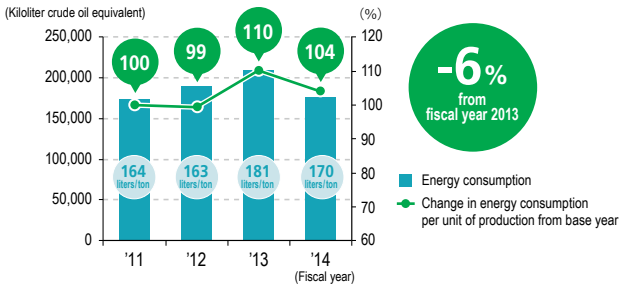
❺ Energy Consumption and CO_2 Emissions by the DIC Group Overseas

In fiscal year 2014, energy consumption by DIC Group companies overseas amounted to 176,600 kiloliters, calculated in kiloliters of crude oil, a decrease of 15.4%, while CO_2 emissions per unit of production were 402,343 metric tons, down 15.9%. Since changes in reporting boundaries accounted for a decline of approximately 5% in each category, the principal factor behind these significant reductions was an increase in the energy efficiency of production activities—underscored by an improvement in energy consumption per unit of production, a decrease of 5.7%—attributable to Groupwide efforts to step up energy-saving initiatives and efficiency-oriented facility updates.

CO_2 Emissions and Change from Base Year



Energy Consumption Per Unit of Production and Change in Energy Consumption from Base Year



❻ Energy-Saving Initiatives Overseas

Laws and regulations, as well as infrastructure, differ between countries and regions. The DIC Group strives to promote energy savings and efficient operations wherever it is active and in so doing to set precedents for the global chemicals industry. Against a 10.3% decline in production volume, energy-saving initiatives by DIC Group companies overseas in fiscal year 2014 reduced energy consumption 15.4% and yielded a 5.7% improvement in energy consumption per unit of production. These achievements supported a substantial decline in associated CO_2 emissions of 15.9%, or 76,235 tons.

Results of Energy-Saving Initiatives Overseas in Fiscal Year 2014

	Number of initiatives	Reduction in energy consumption (kl)	Reduction in CO_2 emissions (Tons of CO_2)
Greater China	26	374	842
Asia–Pacific region	61	885	1,960
Total	87	1,259	2,802

Greater China

In November 2014, 26 energy officers from 16 sites in the PRC gathered at DIC Zhangjiagang Chemicals Co., Ltd., a manufacturer of synthetic resins in Zhangjiagang, Jiangsu Province, in the PRC, for an energy management conference on the theme of energy-saving and wastewater processing. Participants reviewed initiatives, and shared information on ongoing challenges and discussed future plans. A representative of DIC's Production Control Department gave a presentation using the Company's installation of LED lights and efforts to promote the efficient operation of air compressors as case studies.

Authorities in the PRC are encouraging companies to switch from light oil to environment-friendly town gas, as well as to make use of an active biodiesel refined from vegetable matter. DIC Group companies in the PRC are exploring the possibility of making this switch, examining such considerations as infrastructure and site locations. Shanghai DIC Ink Co., Ltd., which manufactures printing inks, began using biodiesel in fiscal year 2013. The company plans to replace 90% of its boiler fuel with biodiesel in fiscal year 2014.

Energy management conference held in Zhangjiagang


Group discussion

Other Initiatives

Zhongshan DIC Colour Co., Ltd.

1. Expanded installation of energy-saving electric steam generators
2. Updated ceiling light fixtures in production facilities (switched from mercury-containing to LED lights)


1


2

DIC Synthetic Resins (Zhongshan) Co., Ltd.

1. Brought in new high-efficiency air compressors
2. Added inverter controls to exhaust gas incinerators


1


2

Shenzhen-DIC Co., Ltd.	Switched boiler fuel from light oil to natural gas
Nantong DIC Color Co., Ltd.	Transformed heat sources for showers (electric heaters) into waste heat recovery units for exhaust gas boilers
DIC Zhangjiagang Chemicals Co., Ltd.	Increased operating efficiency of circulating pumps in chillers

Asia–Pacific region

In September 2013, 25 energy officers from 19 sites in 11 countries and territories in the Asia–Pacific region gathered for a conference on energy management issues and measures. Participants discussed increases in energy consumption in emerging economies due to economic expansion, as well as the horizontal deployment of measures that have proven effective in addressing issues specific to the region.

In fiscal year 2014, production volume in the Asia–Pacific region increased, owing to the acquisition of a manufacturer in the preceding period. Nonetheless, the active promotion of energy-saving initiatives at individual sites resulted in a decline in associated CO_2 emissions per unit of production of 1,960 metric tons. In fiscal year 2015, the DIC Group will implement strategic measures aimed at principal energy-consuming sites to reduce dependence on high-emission energy sources, including the installation of facilities for the independent generation of renewable energy, and will work to establish quantitative targets for the region as a whole.

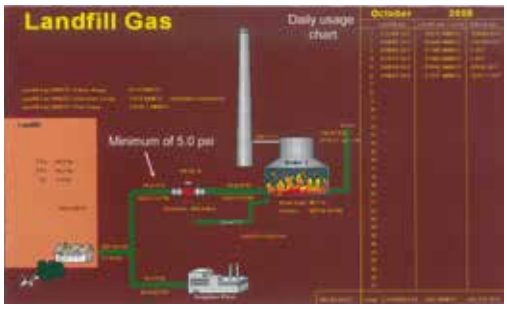
Principal Initiatives

Siam Chemical Industry Co., Ltd. (Thailand)	(1) Switched from existing coolant pumps to high-efficiency models; (2) Updated light fixtures (installed LED lights)
PT DIC ASTRA Chemicals (Indonesia)	(1) Installed electricity monitoring system across entire site; (2) Updated light fixtures (installed LED lights)
DIC Epoxy (Malaysia) Sdn. Bhd.	Added inverter controls to all five coolant pumps
DIC Graphics (Thailand) Co., Ltd.	(1) Added inverter controls to coolant pumps; (2) Updated light fixtures (installed LED lights)
DIC Compounds (Malaysia) Sdn. Bhd.	Updated light fixtures (installed LED lights)
DIC Fine Chemicals Private Limited (India)	Updated light fixtures (installed LED lights) across entire site

Americas and Europe

In October 2013, the Sun Chemical Group—which has operations in 13 countries in North, Central and South America and 43 countries in Europe—rolled out a new internal Web-based data collecting system called EcoTrack, which facilitates the collection and centralized monitoring of data for key sustainability metrics related to energy, water, waste and safety at 153 sites. In addition to increasing the transparency of site data related to production, energy-saving initiatives and CO_2 emissions, among others, EcoTrack was designed to encourage the sharing of information and the horizontal deployment of measures. The full implementation of the system across the Sun Chemical Group in fiscal year 2014 greatly increased the transparency of crucial data, which in turn accelerated the cycle of analyzing data, formulating responses and deploying measures, significantly increasing the progress of energy-saving initiatives. At two sites, for example, the mounting of sensors on production equipment and analysis of resulting data facilitated the calculation of optimum electric power and operating times for individual processes to minimize wasted power and optimize production. As a consequence, both sites succeeded in boosting production volume while substantially lowering their use of electric power, enabling both to achieve noteworthy reductions in both energy consumption and costs.

The Sun Chemical Group is implementing energy-saving initiatives at production and warehouse facilities (United States)



Sun Chemical production facilities are promoting energy management by, among others, expanding use of landfill gas (biogas) (United States)

Logo for Sun Chemical initiative aimed at optimizing energy and production processes (United States and Europe)

VOICE from the DIC Group

General Manager, Production Control Department **Michio Uchiyama**

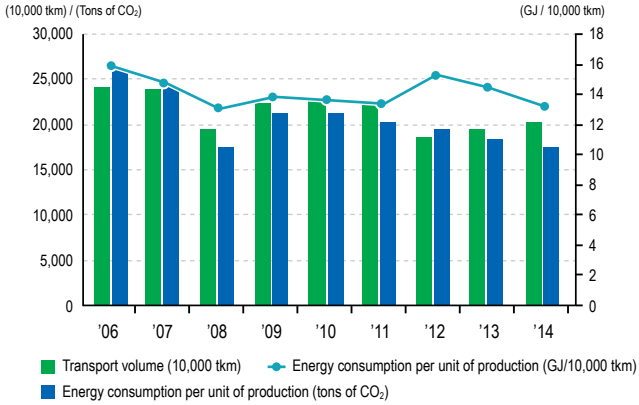
We continue to explore new ways to increase motivation.

Until now, the principle indicator of energy efficiency has been energy consumption per unit of production, which measures volume of energy used against production output. However, in the chemicals industry the trend is toward high-value-added products and high-mix, low-volume production, so you can't look only at consumption per unit of production. For this reason, we will increase the weighting of energy-saving initiatives that lead directly to cost reductions in our next three-year management plan and promote the creation of new schemes aimed at increasing employee motivation.

❼ Reduction of Greenhouse Gas Emissions Attributable to Logistics

In fiscal year 2014, DIC examined its upstream distribution bases to identify those with low efficiency levels and implemented measures aimed at improving transport options for relatively short distances. Thanks to these and other efforts, energy consumption in logistics and associated CO_2 emissions declined 2.0% and 5.0%, respectively, despite an increase in transport volume. The principal factor behind these improvements was the promotion of modal shift focusing on marine, rail and air transport, underscored by a 23.2% increase in the volume of products shipped using these modes of transport. The volume of products transported by container ship rose 7.1%, while transport by rail climbed 40.0%. The DIC Group's modal shift rate in fiscal year 2014 was 10.7%, up from 9.1% in the preceding period.

Energy Consumption Per Unit of Production for the Transport of Products



❽ Initiatives in Areas Other than Production

In fiscal year 2014, DIC once again promoted efforts in line with Japan's Cool Biz and Warm Biz campaigns, official efforts to reduce electric power consumption by limiting the use of air conditioning in summer and winter through measures such as the introduction of more relaxed office dress codes. The Company also continued to promote efforts aimed at reinforcing employees' awareness of the importance of lowering energy consumption, including replacing superannuated light fixtures and air conditioning equipment in offices and sites with newer, high-efficiency models that satisfy standards set by the ECCJ for its Top Runner program, turning off lights when not needed and implementing mandatory 22° winter and 28° summer air conditioning settings.

❾ Reporting to the CDP

The CDP (formerly the Carbon Disclosure Project) is a global nonprofit organization (NPO) that works on behalf of institutional investors to motivate companies to disclose information on initiatives to combat climate change and key environmental data. The CDP analyzes and evaluates information reported by companies and communicates its findings to said institutional investors. DIC has been reporting to the CDP since 2010. The CDP has recognized the Company's consistent environmental initiatives and in fiscal year 2014 awarded it an overall score of 89B (89 points for disclosure and a performance class of B), significantly exceeding the average for companies based in Japan, which is 78B.

VOICE from the DIC Group

Manager in Charge of efficiency, Production Administrative Division **Kazuo Kawaguchi**

We are taking steps to prepare for the liberalization of Japan's energy sector.

In March 2015, the Cabinet of Japan approved bills to separate transmission and distribution from the country's electric power firms, which currently have regional monopolies, in 2020 and to liberalize the town gas retail market in 2017. These changes will broaden the energy supply alternatives available to both commercial users and consumers. To date, we have reviewed contracts with electric power suppliers at a number of domestic DIC Group sites and have achieved substantial cost reductions by procuring from suppliers offering packages combining both. With Japan's energy industry at a major turning point, it is crucial that DIC Group sites promote further efforts tailored to regional supply infrastructures—including installing independent generating facilities—to ensure continued operating efficiency.

Reducing Emissions of Chemicals into the Environment

Basic Approach

As chemicals companies handle a considerably greater volume and more diverse range of chemical substances than companies in other industries, they must be extremely vigilant to prevent discharges of such substances into the environment.

DIC and DIC Group companies in Japan have worked to reduce emissions into the air, water and soil of substances designated under the Pollutant Release and Transfer Register (PRTR)* since fiscal year 2000 and of substances targeted under a voluntary scheme created by the Japan Chemical Industry Association (JCIA) since fiscal year 2005. In fiscal year 2013, DIC introduced management by objectives (MBO) at DIC Group companies in Greater China and the Asia–Pacific region with the aim of further encouraging emissions reductions.

Goals and Achievements of Major Initiatives

Objective of initiatives	Goal for fiscal year 2014	Achievement in fiscal year 2014	Evaluation	Goal for fiscal year 2015
Control emissions of chemical substances (Reduce emissions of 462 PRTR-designated substances and 89 substances and one substance group targeted by JCIA for voluntary control).	DIC Group (Japan): Total emissions of 402 tons (-14% from fiscal year 2013)	DIC Group (Japan): Total emissions of 367 tons (-4% from fiscal year 2013)	★★★	DIC Group (Japan): Total emissions of 395 tons (+7% from fiscal year 2014)

* The PRTR is a scheme for assessing, aggregating and disseminating data on the sources of hazardous chemicals, amounts released into the environment and amounts transferred off-site from industrial establishments via waste products.

Principal Initiatives in Fiscal Year 2014

In fiscal year 2014, the DIC Group's principal initiatives focused on 462 class-1 chemical substances designated by the PRTR and 89 chemical substances* (excluding class-1 substances) and one substance group—chain hydrocarbons with 4 to 8 carbons—targeted for study by the JCIA. During the period, DIC and DIC Group companies in Japan used and/or produced 93 and 108 of these substances, respectively, in amounts exceeding 1.0 ton. DIC Group companies in Japan sought to meet their emissions reduction targets for PRTR-designated substances by reviewing cleaning processes for reaction tanks and local exhaust ventilation devices.

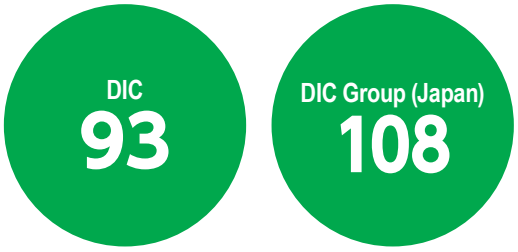
Overseas, DIC Group companies tracked emissions of targeted substances and reported findings to regulators in line with pertinent national and regional regulations. In fiscal year 2013, DIC Group companies in Greater China and the Asia–Pacific region introduced MBO using pertinent national targets and guidelines, thereby reinforcing their commitment to such efforts. The Group will continue working to attain both facility- and operations-related reductions targets.

* In 2014, the JCIA reviewed chemical substances designated under the PRTR, as a result of which the number of targeted substances, previously 105, was revised to 89.

Environmental Emissions of Targeted Chemical Substances (551 Substances, Including those Designated by the PRTR, and One Substance Group) in Fiscal Year 2014

DIC	Emissions into the air	189 tons
	Emissions into water	13 tons
	Emissions into soil	0 tons
DIC Group (Japan)	Emissions into the air	354 tons
	Emissions into water	13 tons
	Emissions into soil	0 tons

Number of Targeted Chemical Substances Used and/or Produced in Amounts Exceeding 1.0 Ton in Fiscal Year 2014



Emission of Targeted Chemical Substances (551 Substances and One Substance Group) in Fiscal Year 2014

Substance	DIC	DIC Group (Japan)
	Emissions into the environment	Emissions into the environment
Ethyl acetate	69 tons	95 tons
Methyl ethyl ketone	21 tons	39 tons
Toluene	43 tons	51 tons
Propyl alcohol	3 tons	14 tons
Styrene	4 tons	38 tons
Acetone	6 tons	10 tons
Total	146 tons (-28.0% from fiscal year 2013)	247 tons (-34.0% from fiscal year 2013)

Topic

Komaki plant eliminates organic solvents from tank cleaning process

DIC's Komaki Plant, in Aichi Prefecture, previously used solvents to clean tanks. Because long-term use of organic solvents poses an incontrovertible risk to human health, DIC has promoted stringent occupational health engineering controls to prevent exposure, including installing enclosed equipment and mandating the wearing of protective equipment. With the dual objectives of safeguarding employee health and reducing its use of chemical substances, in fiscal year 2014 the plant replaced organic solvents in its tank cleaning process with water. DIC will continue reassessing and improving workplace environments with the aim of protecting its employees from work-related health hazards.

Reducing Environmental Impact on Air, Water and Soil

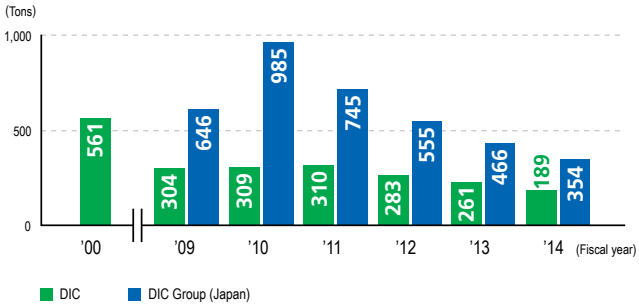
Goals and Achievements of Major Initiatives

Objective of initiatives	Goal for fiscal year 2014	Achievement in fiscal year 2014	Evaluation	Goal for fiscal year 2015
Reduce VOC emissions into the air.	DIC Group (Japan): Total emissions of 390 tons (-14% from fiscal year 2013)	DIC Group (Japan): Total emissions of 354 tons (-22% from fiscal year 2013)	★★★	DIC Group (Japan): Total emissions of 382 tons (+7% from fiscal year 2014)

❶ Addressing VOC Regulations

Having succeeded in achieving a voluntary target—set in fiscal year 2007—of reducing emissions into the air of VOCs 30% by fiscal year 2010 (using fiscal year 2000 as the base year) for the DIC Group in Japan, domestic Group companies continue to pursue steady annual reductions through facility improvements and emissions management. Overseas, Group companies in Greater China and the Asia–Pacific region are using MBO to promote ongoing emissions reductions.

Emissions into the Air of Targeted Chemical Substances (551 Substances and One Substance Group)



❷ Managing Water Resources

Usable fresh water on the earth's surface is said to account for only around 0.01% of the planet's total fresh water resources. Accordingly, finding effective ways to conserve and manage water resources is a crucial global challenge. The DIC Group withdraws fresh water (tap water and industrial water) for use in production processes and air conditioning and for drinking, among others. The Group also discharges wastewater—after purifying it in line with internal standards that exceed official standards in the countries and territories where it has operations—into rivers and other fresh water bodies. At major sites, the Group recovers purified wastewater and reuses it in production processes, helping reduce both fresh water withdrawn and wastewater discharged by these sites.

In fiscal year 2014, the DIC Group promoted improvements to production processes and the sharing of information Groupwide. Thanks to these and other efforts, fresh water withdrawn by the global DIC Group amounted to 23,176,000 m^3, a decline of 7.5% from the preceding fiscal year, comprising withdrawals by the DIC Group in Japan (including DIC) of 12,458,000 m^3, down 14.3%, and by Group companies overseas of 10,718,000 m^3, up 1.7%. Wastewater discharged by the global DIC Group in fiscal year 2014 amounted to 14,363,000 m^3, a decrease of 3.8%.

In fiscal year 2015, the DIC Group will accelerate efforts to centralize its management of fresh water and wastewater data. The Group will also incorporate targets for lowering its consumption of water resources into its new medium-term management plan, which will commence in fiscal year 2016.

Fresh Water Withdrawn by the Global DIC Group in Fiscal Year 2014
23,176,000 m^3
-7.5% from fiscal year 2013

Wastewater Discharged by the Global DIC Group in Fiscal Year 2014
14,363,000 m^3
-3.8% from fiscal year 2013

❸ Soil and Groundwater Pollution Studies

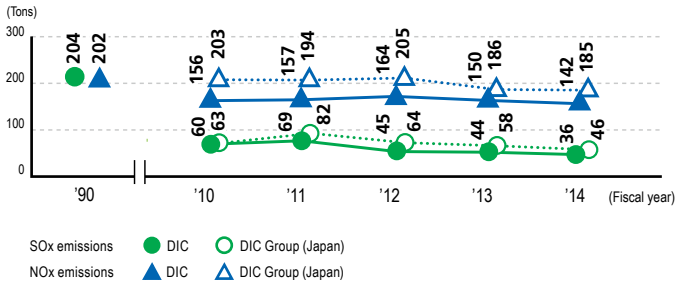
Japan's Water Pollution Control Act was revised in 2012 to tighten structural standards governing equipment installed to prevent groundwater contamination caused by chemical substances. In addition to complying strictly with this act and with the Soil Contamination Countermeasures Act, the DIC Group in Japan implements soil and groundwater surveys and countermeasures as necessary and assesses related environmental and safety risks.

❹ Reducing SOx, NOx and COD

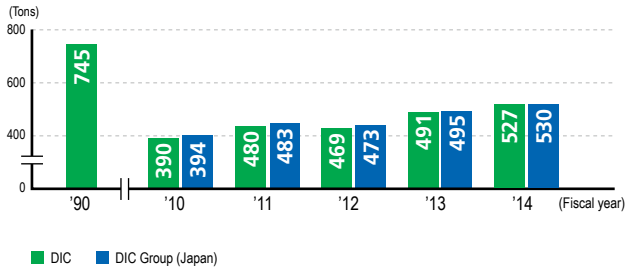
Taking fiscal year 1990 as the base year, DIC Group companies in Japan have worked to reduce sulfur oxide (SOx) and nitrogen oxide (NOx) emissions—key causes of acid rain—from boilers. These efforts have yielded noteworthy results. The Group is also achieving steady results in the reduction of chemical oxygen demand (COD), an indicator of water quality deterioration in wastewater, thereby enhancing its water quality management. Overseas, Group companies are also switching fuel from light oil to natural gas and replacing light oil-fired and heavy oil-fired boilers with waste wood-fired biomass boilers at sites with appropriate infrastructure.

In the area of water quality management, the Group is also working to protect the environment, including promoting the reuse of water and installing closed-loop water recycling and wastewater treatment systems at its sites that purify water to a level that exceeds the legally mandated standard.

SOx and NOx Emissions Volumes



COD



❺ Complying with Regulations Governing Dioxin Emissions

In Japan, the DIC Group monitors emissions of dioxins from waste incinerators that produce these byproducts, a group of compounds with diverse possible isomers of varying toxicities. At present, the Group has six such facilities. Continuous efforts to reduce emissions levels have enabled the Group to achieve results that greatly surpass standards specified in the Law Concerning Special Measures Against Dioxins.

Dioxin Emissions from Domestic DIC Group Incinerators

Site	Scale of facility (incinerating capacity)	Waste gas		Wastewater	
		Standard (ng-TEC/Nm³)	Emissions reported in fiscal year 2014 (ng-TEC/Nm³)	Standard (ng-TEC/Nm³)	Emissions reported in fiscal year 2014 (ng-TEC/Nm³)
Chiba Plant (DIC)	Approx. 3 tons/hr	5.0	0.81	10	0.14
Hokuriku Plant (DIC)	0.28 ton/hr	5.0	0.0086	10	0.00017
DIC Interior Co., Ltd.	Approx. 0.1 ton/hr	10.0	0.37	NA	—
Hokkaido Plant (DIC Kitanihon Polymer Co., Ltd.)	Approx. 0.2 ton/hr	10.0	0	NA	—
Tohoku Plant (DIC Kitanihon Polymer Co., Ltd.)	Approx. 0.2 ton/hr	10.0	0.0009	NA	—
Satte Plant (Seiko PMC Corporation)	Approx. 0.2 ton/hr	10.0	<0.07	NA	—

Reducing Industrial Waste

Goals and Achievements of Major Initiatives

Objectives of initiatives	Goals for fiscal year 2014	Achievements in fiscal year 2014	Evaluation	Goals for fiscal year 2015
Reduce industrial waste disposed of as landfill (achieve "zero emissions").	DIC Group (Japan): 80.3 tons (-6.2% from fiscal year 2013)	DIC Group (Japan): 80.0 tons (-6.5% from fiscal year 2013)	★★★	DIC Group (Japan): 81.5 tons (+1.8% from fiscal year 2014)
Reduce industrial waste generated by production facilities.	DIC Group (Japan): 53,951 tons (-18.2% from fiscal year 2013)	DIC Group (Japan): 31,054 tons (-52.4% from fiscal year 2013)	★★★	DIC Group (Japan): 29,682 tons (-4.4% from fiscal year 2014)
Promote recycling.	Promote recycling at DIC Group companies in Japan and strive to improve resource recycling.	DIC Group (Japan): Resource recycling rate was 85% (-10 percentage points)	★★	Promote recycling at DIC Group companies in Japan and strive to improve resource recycling.

Basic Approach

The DIC Group aims to minimize industrial waste by recycling and reusing materials. Since fiscal year 2001, DIC has been involved in a zero-emissions initiative aimed at reducing industrial waste disposed of as landfill. DIC has deployed zero-emissions initiatives at DIC Group companies in Japan since fiscal year 2008. With the aim of expanding efforts across the global DIC Group, in fiscal year 2013 DIC began to introduce MBO at overseas Group companies. DIC subcontracts the treatment of industrial waste to be disposed of as landfill, and ensures waste is properly treated by promoting strict compliance and on-site confirmation by designated departments at each of its production facilities.

Principal Initiatives in Fiscal Year 2014

Reducing Industrial Waste Disposed of as Landfill

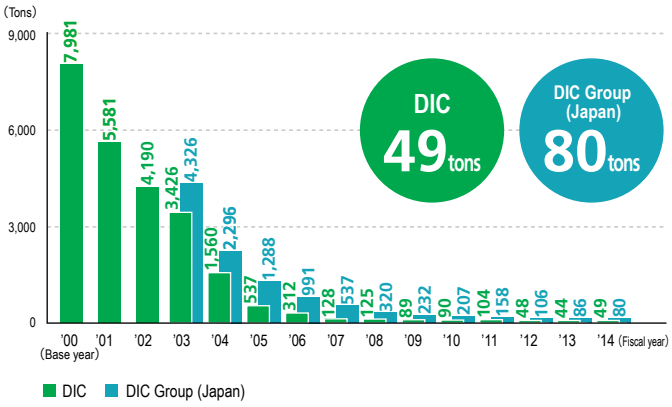
The DIC Group actively works to reduce its disposal of industrial waste as landfill by recycling cinders, dust and sludge into, among others, roadbed materials and raw materials for cement, using thermal recycling to recover waste heat and reducing production losses by increasing yields.

Initiatives in Japan

In fiscal year 2014, the DIC Group pressed forward with a number of key ongoing initiatives. However, the demolition of DIC's now-closed Suita Plant, in Osaka Prefecture—formerly a production base for printing inks and colorants—resulted in the discharge of a significant amount of industrial waste during the period. Thanks to efforts to make effective use of wastewater in production processes, the volume of industrial waste generated by DIC production facilities in the period under review rose 15.6%. In contrast, the volume of industrial waste generated by production facilities belonging to other domestic DIC Group companies declined approximately 75%. Thanks to efforts to make effective use of wastewater in production processes, the total volume of industrial waste generated by the DIC Group's production facilities in Japan in fiscal year 2014 declined 52.4% from the fiscal year 2013 level.

Industrial Waste Generated by the DIC Group in Japan in Fiscal Year 2014

Industrial Waste Disposed of as Landfill



In fiscal year 2015, each DIC Group company in Japan will work to reduce the total volume of industrial waste generated by its production facilities by 1% from the fiscal year 2014 level and/or to reduce the volume of industrial waste they dispose of as landfill. All companies recognize the importance of ensuring that increases in production volume in fiscal year 2015 do not cause commensurate increases in industrial waste.

In fiscal year 2014, DIC Group companies in Japan continued working to ensure the appropriate disposal of waste polychlorinated biphenyls (PCBs). Companies also continued to promote the strict management of unprocessed waste, including transformers, capacitors and stabilizers, through proper collection and storage in dedicated warehouses.

Using the ETSITE Responsible Care Data Management System

In fiscal year 2012, the DIC Group in Japan introduced a Responsible Care data management system called ETSITE to ensure rational management and effective usage of management data for industrial waste. ETSITE is an Excel-based data management system that provides information on companies that dispose of industrial waste, looking at their disposal routes and flows, and reports to Japan's prefectural governments. In fiscal year 2014, the use of ETSITE helped DIC improve the efficiency of various practices and of progress management.

Initiatives Overseas

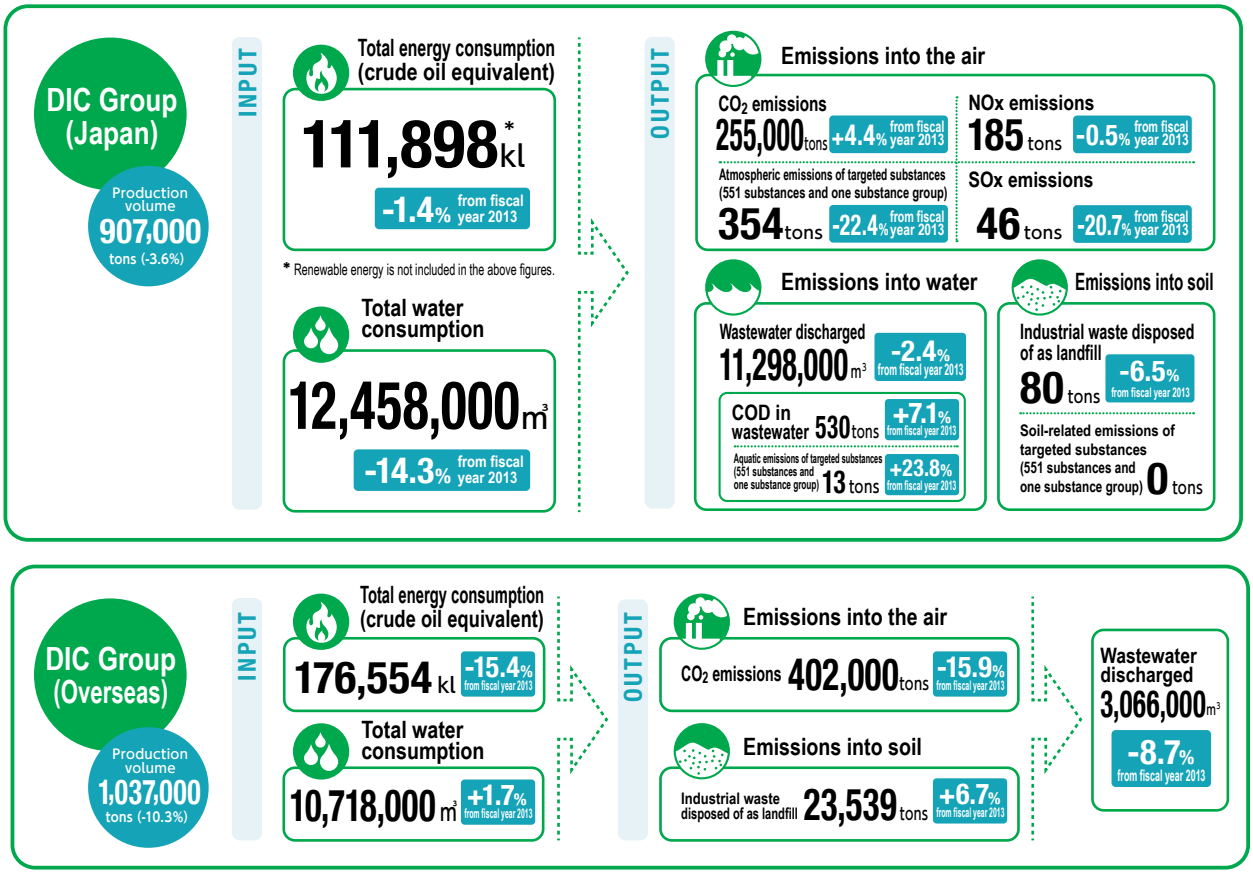
In addition to ensuring the disposal of industrial waste in a manner that complies with national and regional regulations, the DIC Group's overseas production facilities work to minimize industrial waste through the voluntary recycling and reuse of materials. In fiscal year 2013, overseas Group companies sought to reinforce efforts to reduce industrial waste by introducing MBO.

In fiscal year 2014, DIC Group companies in the Americas and Europe and the Asia–Pacific region deployed measures aimed at achieving reductions in waste generated during various production processes that exceed national and regional legal requirements. Nonetheless, the total volume of industrial waste generated by DIC Group production facilities overseas rose 6.7%. Having cooperated with DIC's Responsible Care and Production Control departments to analyze the reasons for this increase, in fiscal year 2015 companies in both regions will focus on further reinforcing management capabilities while also limiting the generation of industrial waste and reducing the volume of industrial waste disposed of as landfill.

Overview of Environmental Impact of the DIC Group's Operating Activities

The DIC Group quantifies its environmental inputs (resources consumed), such as energy and water consumption, and outputs, that is, emissions into the environment, and uses its findings to formulate comprehensive and efficient strategies for reducing its environmental footprint.

The chart below is a comprehensive illustration of the environmental impact of the DIC Group's domestic operating activities in fiscal year 2014. The chart shows the environmental impact for two input items (total energy consumption and total water consumption) and six output items (emissions of 551 substances (including those designated under the PRTR*1) and one substance group*2, emissions of CO_2, emissions of NOx, emissions of SOx, COD in wastewater and industrial waste disposed of as landfill.



*1 The PRTR is a scheme for assessing, aggregating and disseminating data on the sources of hazardous chemicals, amounts released into the environment and amounts transferred off-site from industrial establishments via waste products.
*2 The "551 substances and one substance group" comprises 462 chemical substances designated by the PRTR and 89 substances and one substance group targeted for study by the JCIA.

Managing Chemical Substances in Products

Goals and Achievements of Major Initiatives

Objectives of initiatives	Goals for fiscal year 2014	Achievements in fiscal year 2014	Evaluation	Goals for fiscal year 2015
Respond to requirements relating to chemical product information.	• Comply with GHS Rev. 4 (fourth revised edition of the GHS). • Begin using the Wercs at DIC Group companies worldwide.	• Secured JIS* compliance for CIRIUS and complied with SDS and label requirements of GHS Rev. 4. • Reviewed the Wercs usage briefings to review use at overseas DIC Group companies, identifying issues; encouraging use at overseas Group companies remains a priority issue.	★★★ ★★	Provide education for employees of DIC Group companies and affiliates in the PRC regarding legal and regulatory compliance.
Comply with overseas regulations (e.g., the EU's REACH legislation).	• Promote compliance with the PRC's Regulations on Registration of Hazardous Chemicals in China. • Prepare for the implementation of the ROK's K-REACH legislation.	• Pushed ahead with preparations and provided information about registration. • Promoted possible preparations under the absence of subordinate legislation.	★★★	• Promote use of the Wercs at overseas Group companies. • Comply with Taiwan's Toxic Chemical Substance Control Act and Occupational Safety and Health Act.

*Japanese Industrial Standards

Promoting Safety for Chemical Substances and Products

Basic Approach and Framework for Implementation

In 2003, the UN Economic Commission for Europe issued the first edition of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), the idea being to reduce chemical risks through an internationally harmonized approach to classification of chemicals by type and toxicity, the clear display of information on labels for better understanding and the provision of SDSs.

To respond swiftly to requests to reduce risks by providing customers with complete information on hazards associated with chemical substances, DIC established CIRIUS (Chemical Substance Information Comprehensive Management System) for domestic products in 2009. CIRIUS centralizes the management of imformation about raw materials and chemicals to facilitate the provision of reliable SDSs. The system also automatically checks various laws and regulations. These include security export control rules, the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc., the Industrial Safety and Health Act and the Poisonous and Deleterious Substances Control Act. In 2013, DIC began using the Wercs (a global SDS/label creation system developed with know-how from DIC) for products for export. As a result, DIC now has a structure that enables it to compile SDSs for more than 250,000 products that comply with national and regional laws and regulations and is accessible in all local languages. In April 2014, DIC began using the Wercs to issue SDSs and labels for all exported products.

As specialized knowledge about chemical substance management is essential, DIC focuses on training in the manufacture, import and handling of chemicals in accordance with applicable laws and regulations and draws on its proprietary licensing system to enhance the skills of employees.

information&insights | The Wercs®

The Wercs logo

Reducing Risks by Providing Information Worldwide

Introducing the Wercs

In April 2013, DIC centralized the management of information on the composition of chemical substances in exported products and on chemical substance legislation in various countries and regions, switching to the Wercs, a new system that automatically creates product SDSs in the language—and in compliance with the laws and regulations—of individual export destinations, creating a foundation for its global information system and helping reduce risks for customers.

DIC employs CIRIUS to centrally manage raw materials and chemical substances information for products manufactured in Japan. CIRIUS automatically checks the Security Trade Control Law and Chemical Substances Control Law, the Industrial Safety and Health Act and the Poisonous and Deleterious Substances Control Act to swiftly supply highly reliable SDSs.

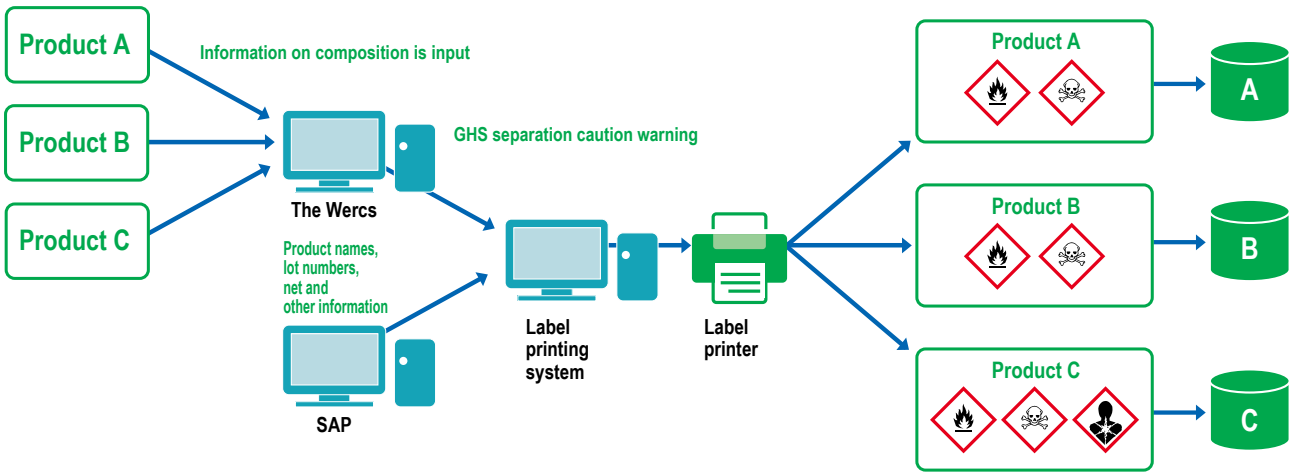
For products for export, DIC traditionally responded to regulatory requirements on a country-by-country basis by using software and outsourcing procedures to third parties. The Wercs, which incorporates know-how accumulated by DIC in the creation and use of CIRIUS, was developed with the aim of expediting the provision of such information. The Wercs facilitates the translation of data into 46 different languages—including the languages of the 19 countries and territories to which DIC currently exports products—and the preparation of SDSs and labels in local languages that comply with the laws and regulations of countries and territories in the Americas, Europe, Asia and elsewhere.

Since switching to the Wercs for supplying SDSs and issuing labels for exported products, DIC has expanded the number of countries for which it can prepare local-language, legally compliant SDSs and labels to include the Republic of Korea (ROK), Europe, the United States, the PRC and Taiwan. Since April 2014, all SDSs and labels for products for export have been prepared using the Wercs. DIC is also promoting deployment of the system to Group companies in Japan, which are using the Wercs in tandem with CIRIUS to ensure the effective management of chemical substances across the Group's domestic supply chain.

In response to the revision of pertinent laws and regulations, DIC is also stepping up efforts to implement GHS hazard pictograms. To this, the Company is setting up an on-demand label printing system that links the Wercs with production lines.

DIC provides information on chemical substances using CIRUIS in Japan and the Wercs overseas.

On-Demand Label Printing System Flowchart



Complying with Laws and Regulations

Collecting, Analyzing and Communicating the Latest Information

DIC collects the latest information on chemical substances through international consultants and experts, news wire services and chemicals industry associations to ensure that it can respond swiftly and effectively to revisions in laws and regulations.

Recent years have seen the European Union enact Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)* legislation, and the ROK, the PRC and Taiwan introduce legislation aimed at strengthening chemical substances risk management. As well, countries around Southeast Asia have deployed GHSs. DIC has responded swiftly to such developments, and has supplied the latest information to its customers by issuing SDSs and labels.

In fiscal year 2013, DIC switched to using the Wercs for the creation of SDSs and labels for existing products for export. In May 2013, authorities in the ROK announced the new Act on the Registration and Evaluation of Chemicals (K-REACH). DIC is currently analyzing information and taking steps to prepare for the law's implementation in 2015.

* Under REACH, businesses bear full responsibility for evaluating the safety of chemical substances they produce and/or use with no distinction made between "existing" and "new" substances. REACH also prohibits the use of specified chemical substances that pose unacceptable risks to human health.

Training in Chemical Substance Management

Compliance with laws and ordinances is a fundamental requirement for DIC as a comprehensive chemicals manufacturer and thus central to risk management. Accordingly, the Company endeavors to improve employee awareness and knowledge of chemical substance regulations in Japan and overseas by holding workshops and maintaining a proprietary internal licensing system.

Efforts include providing specialized training for individuals involved in exporting chemical substances in line with the Foreign Exchange and Foreign Trade Act, and for individuals involved in importing substances in line with the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc., and the Industrial Safety and Health Act and the Poisonous and Deleterious Substances Control Act. DIC only licenses employees who have completed designated training and passed in-house examinations. The licenses are valid for either two or three years. Licenses permit these individuals to engage in import and export operations. To renew their licenses, they must retake classes and pass the subsequent exams.

In fiscal year 2014, 777 employees qualified for a Class A license, which requires specialized knowledge, 743 of whom subsequently received licenses. Another 120 people passed the exam for a Class B license, which pertains to ancillary operations.

Holding Seminars on the Wercs in Greater China and the Asia–Pacific Region

In keeping with the full-fledged global deployment of the Wercs, DIC dispatched Responsible Care Department officers to hold five seminars in Greater China and the Asia–Pacific region (Taiwan, Thailand, Malaysia and Indonesia) in 2014.

Such seminars go beyond officers explaining the operations and advantages of the Wercs. It is important for participants to understand the background and intent of legal revisions and steadily amass basic data and update information. Constantly injecting such information into systems maximizes the potential of the Wercs, making it possible to provide valuable and timely information to customers and reduce overall social risks.

The seminars served to give the 74 participants from 15 companies an idea of the Wercs' potential as a tool and to remind them of the importance of sharing issues to find effective solutions.

VOICE from the DIC Group

Senior Manager in Charge of Regulatory Affairs, Responsible Care Department **Masato Akama**

We are working to fulfill our responsibilities to society as a comprehensive chemicals manufacturer in an era that demands proper disclosure.

In fiscal year 2014, DIC registered 917 low-volume new chemical substances under Japan's Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc., ranking it as one of the top companies in terms of new substances registered, a testament to the Company's exceptional development capabilities and broad expertise in chemical products in general.

We believe that sharing our knowledge with diverse stakeholders is an effective way of reducing the risks posed by chemical substances in all areas of society. As such, we promote research and efforts to raise awareness as a member of industry organizations concerned with manufacturing, imports and exports. We also participate in regulatory systems-related projects with government authorities and dispatch employees to conduct seminars at universities, thereby helping to disseminate knowledge and information.

We will continue to communicate closely with government, industry and academic organizations in multiple fields while at the same time working to fulfill our responsibilities to society as a general chemicals manufacturer in an era that demands proper disclosure.

Enhancing Product Quarity and Customer Satisfaction

Goals and Achievements of Major Initiatives

Objective of initiatives	Goals for fiscal year 2014	Achievements in fiscal year 2014	Evaluation	Goals for fiscal year 2015
Secure product quality.	• Improve internal audits, viewing them as an opportunity to enhance the quality of work. • Leverage QMS efforts to promote collaboration across DIC's matrix-like corporate organization to enhance quality management practices.	• Information on best practices and internal audit materials was published in-house and initiatives aimed at enhancing internal audits were rolled out Groupwide. • ISO officers at each production facility organized liaison committees to encourage information sharing, thereby laying the groundwork for initiatives in fiscal year 2015 that will seek to strengthen collaboration. • Product groups within product divisions conducted quality audits, and confirmed that DIC's quality management systems had begun to function steadily.	★★★	• Improve internal audits, viewing them as an opportunity to enhance the quality of work. • Leverage QMS efforts to promote collaboration across DIC's matrix-like corporate organization to enhance quality management practices.

Basic Approach

Along with its Environment, Safety and Health Policy, the DIC Group views the improvement of quality as a theme that is essential to upholding a sound operating foundation. Accordingly, the Group seeks to ensure every employee shares the sentiment conveyed in its Quality Policy and works continuously to enhance quality and ensure customer satisfaction.

DIC's Quality Policy "Contribute to the prosperity of customers and society by consistently providing reliable products."

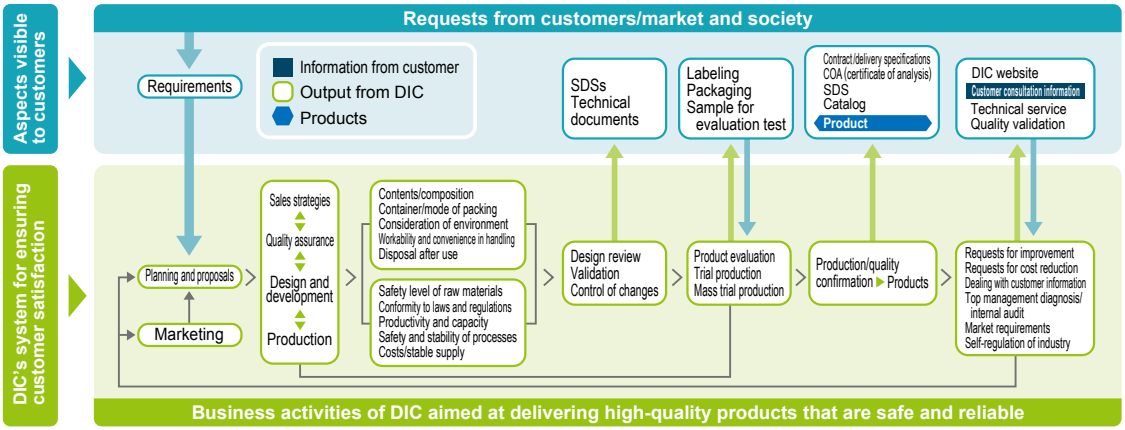
Framework for Implementation

To better leverage its agility and comprehensive capabilities, in April 2012 DIC realigned its overall quality management system (QMS), establishing a matrix-like corporate organization that positions product divisions on the vertical axis and sales administrative divisions, the Production Administrative Division and the Technical Administrative Division on the horizontal axis. In line with this change, the Group introduced a QMS based on ISO 9001, the International Organization for Standardization's benchmark for such systems, and subsequently earned ISO 9001 certification for all of its production facilities. The Group capitalizes on this QMS and on its overall system to promote ongoing efforts to enhance quality.

Domestic and overseas DIC Group companies (domestic consolidated companies and companies in Greater China and the Asia–Pacific region) also use ISO 9001-compliant systems as part of efforts to continuously enhance their quality management capabilities.

❶ Initiatives Aimed at Increasing Customer Satisfaction

Close cooperation among relevant divisions and departments from product planning through to shipment enables DIC to develop and manufacture products with high added value, while rigorous process and identification management ensure product quality. Meticulous risk evaluation is conducted at the design review stage to guarantee safety. After products are sold, customer and market assessments are gathered and fed back to development departments to facilitate further quality improvements. The Group also uses periodic quality audits to promote quality improvements. By sharing customer feedback and other information within its matrix-like corporate organization, and promoting close cooperation among product divisions, the Group works tirelessly to achieve customer satisfaction.



❷ Redefining and Promoting Awareness of DIC's Distinctive Quality Management System

DIC has developed a distinctive QMS that focuses on constant quality improvements through ISO-based internal quality audits, launched in fiscal year 2012, and quality management assessment-based quality initiatives conducted by product divisions. Recognizing that improving internal quality audit capabilities was crucial to raising the effectiveness of product divisions' quality improvement initiatives, DIC provides training designed to upgrade the skills of internal auditors. Since fiscal year 2013, DIC has also sought to encourage self development by having audits attended by internal auditors from other sites. Going forward, DIC will continue to focus on firmly establishing and promoting awareness of its QMS.

Based on audit results at individual production sites, in fiscal year 2014 DIC published information on best practices and internal materials in-house and rolled out initiatives Groupwide with the aim of further enhancing internal audits. In addition, ISO officers at each production facility organized liaison committees to encourage information sharing, thereby laying the groundwork for initiatives in fiscal year 2015 that will seek to strengthen collaboration.

In recognition of their quality management efforts, seven DIC Group sites (the Komaki, Yokkaichi, Saitama, Tatebayashi, Chiba and Hokuriku plants and DIC Epoxy (Malaysia) Sdn. Bhd.) maintained their certification under Sony Corporation's Green Partner Environmental Quality Approval Program.

Using case studies to identify causes of quality-related issues

Why-why analysis training session on office procedures

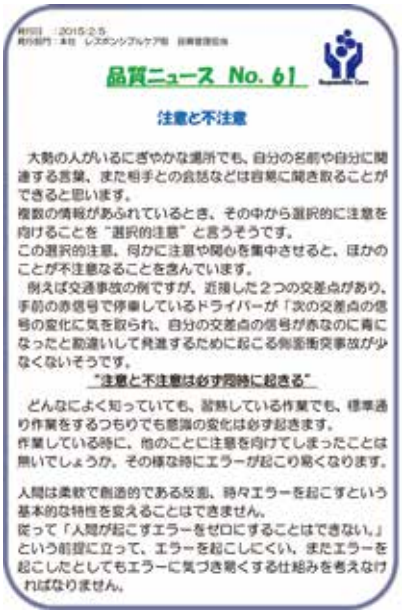
❸ Preventing the Recurrence of Problems

Information on quality problems (complaints and criticisms) that arise is collated and analyzed and then shared across the Group to prevent recurrence. To discover the causes of such problems, the Group employs "why-why analysis" ("*naze-naze bunseki*").

Why-why analysis involves repeatedly asking "why" to encourage people not to jump to conclusions, but rather to investigate and identify the actual root causes of such problems, thereby making it possible to prevent recurrence. DIC also applies why-why analysis in determining the causes of accidents, an approach that continues to yield solid results. In fiscal year 2014, DIC proposed expanding the scope of why-why analysis to encompass back-office functions with the goal of reducing/preventing the recurrence of mistakes made in the receipt and placing of orders. In fiscal year 2015, training in why-why analysis was introduced on a trial basis.

In 2011, DIC began publishing *Quality News*, which provides useful information on quality management and ways to enhance work quality. In addition to being published regularly on DIC's portal site and distributed directly to relevant parties, *Quality News* is used in employee training.

Quality News, Issue No. 61 (published February 2015), spotlighting caution and carelessness



品質ニュース No. 61

注意と不注意

大勢の人がいるにぎやかな場所でも、自分の名前や自分に関連する言葉、また相手との会話などは容易に聞き取ることができると思います。
複数の情報があふれているとき、その中から選択的に注意を向けることを"選択的注意"と言うそうです。
この選択的注意、何かに注意や関心を集中させると、ほかのことが不注意なることを含んでいます。
例えば交通事故の例ですが、近接した２つの交差点があり、手前の赤信号で停車しているドライバーが「次の交差点の信号の変化に気を取られ、自分の交差点の信号が赤なのに青になったと勘違いして発進するために起こる側面衝突事故が少なくないそうです。

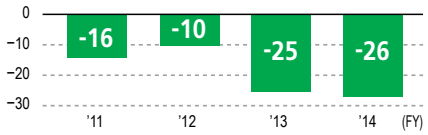
"注意と不注意は必ず同時に起きる"

どんなによく知っていても、習熟している作業でも、標準通り作業をするつもりでも意識の変化は必ず起きます。
作業している時に、他のことに注意を向けてしまったことは無いでしょうか。その様な時にエラーが起こり易くなります。

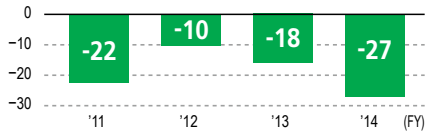
人間は柔軟で創造的である反面、時々エラーを起こすという基本的な特性を変えることはできません。
従って「人間が起こすエラーをゼロにすることはできない。」という前提に立って、エラーを起こしにくい、またエラーを起こしたとしてもエラーに気づき易くする仕組みを考えなければなりません。

Change in the Number of Quality Problems.

Change in the Number of Product Returns



Change in the Number of Complaints Received



VOICE from the DIC Group

Senior Manager in Charge of Quality Management, Quality Assurance Department **Mitsuru Sakai**

The pursuit of customer satisfaction is the ultimate goal of our efforts.

For the DIC Group, quality management goes beyond product quality. Our ultimate goal is to ensure customer satisfaction. Our two systems for managing quality, together with efforts to enhance internal audits and the provision of training in the use of why-why analysis are all essential to attaining this goal. The ongoing promotion of these and other initiatives helps improve the awareness and skills of our employees and prevent minor errors, product defects and complaints, thus supporting steady improvements in product quality.

Report on Other Initiatives

Goals and Achievements of Major Initiatives

Objectives of initiatives	Goals for fiscal year 2014	Achievements in fiscal year 2014	Evaluation	Goals for fiscal year 2015
Report on Responsible Care initiatives and prepare business site reports.	Create a system that facilitates the gathering of uniform performance data across the DIC Group. Promote ongoing Responsible Care initiatives.	Steps were taken to establish a foundation for the creation of a system for standardizing performance data that takes into account the laws and regulations of different countries.	★★★	• Step up efforts to enhance the DIC Group's performance. • Promote ongoing Responsible Care initiatives tailored to local markets.
Implement measures for PCBs.	Collect and store PCBs in an appropriate manner and ensure proper disposal in line with the practices of the Japan Environmental Storage & Safety Corporation (JESCO).	PCBs were collected and stored in an appropriate manner and proper disposal in line with the practices of JESCO was ensured.	★★★	• Maintain system for storing and managing PCBs. • Promote the proper disposal of PCBs.
Protect the ozone layer.	Avoid the adoption of new materials containing specified CFCs.	The adoption of new materials containing specified CFCs was avoided.	★★★	• Reinforce framework for managing equipment containing specified CFCs. • Avoid the adoption of new materials containing specified CFCs.
Asbestos	Remove and dispose of newly discovered asbestos encountered during demolition in accordance with pertinent laws.	Asbestos insulation was newly discovered during the demolition of a facility and was removed and disposed of in a legally appropriate manner.	★★★	Ensure awareness of the potential risks associated with the discovery of asbestos during demolition and respond appropriately.
Train raw materials and product safety experts.	• Provide regular training to educate employees about pertinent laws and regulations. • Make effective use of system for putting employees who have earned in-house licenses in charge of imports.	• Training was provided that focused on educating employees about pertinent laws and regulations. • The system for putting employees who have earned in-house licenses in charge of imports was used effectively.	★★★	• Enhance the capabilities of ESH coordinators in Greater China and the Asia–Pacific region. • Educate employees about chemical substances in raw materials and products and about compliance with related laws and regulations and build framework for such activities.

Working to Enhance Job Satisfaction

Goals and Achievements of Major Initiatives

Objectives of initiatives	Goals for fiscal years 2014–2015	Achievements in fiscal year 2014	Evaluation	Goals for fiscal year 2015
Foster and endorse the advancement of local staff overseas with the aim of advancing global management.	• Conduct voluntary human rights and labor practices inspections within the Group. • Promote efforts to foster global human resources.	• In November 2014, voluntary human rights and labor practices inspections were conducted at 59 Group companies in Japan and overseas. • A total of 40 domestic employees participated in the fiscal year 2014 edition of the Global Challenge Program. In addition, 17 trainees were dispatched from Japan to overseas Group companies and 55 trainees were sent from overseas to Group companies in Japan.	★★★ ★★	• Assess the state of human rights and labor practices based on the results of voluntary inspections and explore approaches for ongoing initiatives, including voluntary inspections. • Continue to offer training programs and trainee initiatives.
Encourage women in the workplace with the aim of securing a diverse labor force and supporting diverse working styles.	• Review and establish a policy for the assignment of female employees to sales positions with the aim of broadening the range of jobs open to women. • Ensure the appropriate administration of programs designed to assist employees balancing the demands of work and childcare or nursing care responsibilities.	• New policies were formulated, with feedback from individuals who have used existing systems incorporated. • The *Libra* work–life balance support guide was updated to reflect changes to pertinent legislation.	★★ ★★	• Establish and deploy an advisor system to support the careers of female employees. • Establish key performance indicators for advancing the careers of female employees.
Promote the hiring of individuals with disabilities with the aim of securing a diverse labor force and supporting diverse working styles.	Increase the number of disabled employees to 2.2% of DIC's total labor force, thereby ensuring consistent compliance with Japan's legally mandated quota of 2.0%.	As of December 31, 2014, individuals with disabilities accounted for 2.135% of DIC's total labor force.	★★	Increase the number of disabled employees to 2.2% of DIC's total labor force, exceeding Japan's legally mandated quota of 2.0%.

Basic Approach to Human Resources Management

With the aim of being an organization that empowers all employees to reach their full potential, the DIC Group is committed to respecting human rights and eliminating all forms of discrimination and to creating a work environment that embraces diversity. The Group also strives to support a healthy work–life balance for each employee and create a work environment conducive to job satisfaction and to foster local human resources in markets around the world, which it recognizes as essential to ensuring sustainable corporate growth under its current medium-term management plan.

Respect for Human Rights

The DIC Group Code of Business Conduct, which outlines standards that DIC Group employees are expected to observe, lays down provisions prohibiting human rights violations and requiring respect for diversity—philosophies that are the foundation of the DIC Group's corporate activities. In fiscal year 2014, 59 domestic and overseas Group companies underwent voluntary human rights and labor practices inspections as part of ongoing efforts to prevent issues from arising. All DIC Group employees are obliged to provide written pledges to abide by the DIC Group Code of Business Conduct and to conduct themselves as stipulated therein.

Building Trust with the DIC Employees' Union

DIC's management and representatives of its employees' union meet regularly with the goal of ensuring healthy industrial relations based on mutual trust. In addition, through labor–management councils and casual management conferences, DIC shares management information and its vision for the future with union representatives and encourages the frank exchange of opinions.

Global Human Resources Management

The DIC Group has established a global human resources management framework capable of supporting efforts to foster local employees overseas, as well as to hire individuals based on business considerations without regard for nationality. Having created a human resources system and introduced specialized training for the next generation of executives at Group companies in the PRC, the Group has recently taken similar steps for companies in Southeast Asia. Other efforts include creating global human resources databases and establishing systematic training programs.

Integrating DIC Group Executive Evaluation Systems

The Group has also integrated its evaluation systems for Group company presidents and other executives in Japan and overseas with the goal of encouraging these individuals not only to pursue near-term results for their business units, but also to choose management approaches that are optimal for the Group as a whole from both a medium- and long-term perspective. In addition, the Group also integrated its global personnel policies to ensure that remuneration is in keeping with local market levels and individual job responsibilities.

Basic Personnel Statistics

		Fiscal year 2012	Fiscal year 2013	Fiscal year 2014
Number of employees	Male	2,804	2,842	2,876
	Female	622	642	666
	Total	3,426	3,484	3,542
Average age	Male	42.2	42.2	42.2
	Female	39.4	39.4	39.8
	Total	41.7	41.6	41.7
Average years of employment	Male	18.1	18.2	18.2
	Female	16.7	17.0	17.4
	Total	17.9	18.0	18.1
Separations (voluntary) (number of individuals)	Male	31	14	23
	Female	12	10	7
	Total	43	24	30
Separation rate (voluntary)	Male	1.1%	0.5%	0.8%
	Female	1.9%	1.6%	1.1%
	Total	1.3%	0.7%	0.9%

Promoting Diversity

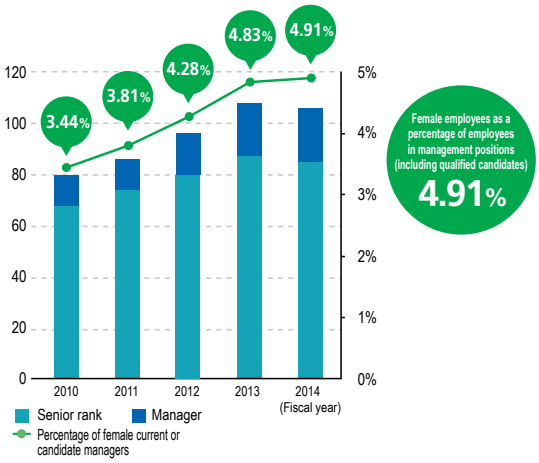
The DIC Group actively pursues diversity by employing a broad spectrum of individuals without regard to considerations such as gender, nationality, physical limitation or age. The Group works to foster a corporate culture that draws on its understanding and respect for diversity to produce creative ideas and to incorporate the concept of diversity into management, thereby creating workplaces that enhance job satisfaction.

❶ Expanding Career Opportunities for Women

DIC is implementing a variety of initiatives to promote career opportunities for women in line with its commitment to creating a work environment in which motivated employees can fully exercise their abilities. While pushing ahead with measures to transform employee mindsets and the corporate culture, the DIC Group has undertaken various steps to further encourage the drive and determination of female employees, including by providing education to enhance awareness and broaden the range of jobs open to women. DIC also continues to offer specialized training for female employees tapped for management positions and one-on-one training designed to expand job opportunities.

Thanks to these and other efforts, the number of female employees who have qualified as candidates for management positions is rising steadily. As well as increasing the number of female employees appointed to management positions, DIC continues to promote initiatives focused on boosting the overall number of female employees in its labor force. The Company is also working to expand its recruitment of new female graduates from both technical schools and bachelor's and master's degree programs, a key source of talented human resources.

Number of Female Employees in Management Positions (Including Qualified Candidates) (DIC)



VOICE from the DIC Group

Production Section 4, Polymer Production Department 2, Chiba Plant **Ayumi Hachioji**

I want to help create work environments that make female employees feel welcome.

I received quite a bit of attention when I became the first female employee posted to a DIC production site. Today, it is common to see women working in production, so there are no particular issues to contend with. Jobs at production sites are not limited to just plant operations and it is hugely motivating for both male and female employees alike to be assigned to a position of responsibility. Although the number of women working at DIC Group plants is still relatively small, it is my hope that we will see more in the years ahead. As such, I would like to help create work environments that make female employees feel welcome.

Number of New Graduates Hired by DIC and Retention Rate (Including Individuals Seconded to DIC Group Companies in Japan)

		Fiscal year 2012	Fiscal year 2013	Fiscal year 2014
New graduates hired	Male	69	70	72
	Female	16	24	19
	Total	85	94	91

		Fiscal year 2009 hires	Fiscal year 2010 hires	Fiscal year 2011 hires
Retention rate (after three years)	Male	96.6%	100%	91.2%
	Female	88.2%	100%	100%
	Total	95.2%	100%	92.6%

❷ Globalizing Hiring Practices

DIC endeavors to attract and train employees with the skills to compete on a global stage. DIC not only endorses global training for Japanese employees but also actively includes foreign nationals among new university graduates and mid-career candidates recruited. (In fiscal year 2015, DIC hired six foreign nationals.)

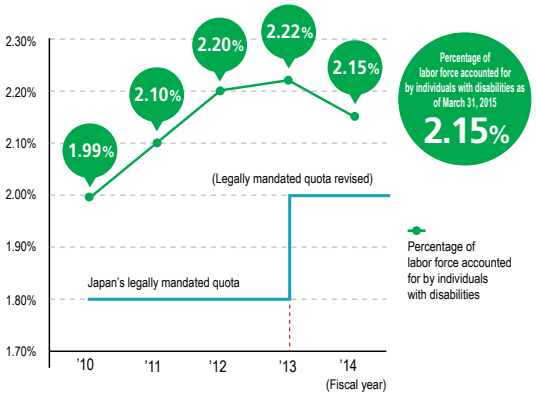
Number of Foreign Employees (Including Individuals Seconded to DIC Group Companies in Japan)

	Fiscal year 2012	Fiscal year 2013	Fiscal year 2014
Foreign nationals hired	18	22	28

❸ Advancing the Employment of Individuals with Disabilities

DIC is committed to creating inclusive work environments that enable individuals with disabilities to work to their full potential. As of March 31, 2015, individuals with disabilities accounted for 2.15% of DIC's total labor force, exceeding Japan's legally mandated quota of 2.0%. Going forward, DIC will continue striving to exceed its legal obligation by enhancing work environments to increase retention rates and by increasing workplace accessibility.

Percentage of DIC's Labor Force Accounted for by Individuals with Disabilities



❹ Reemployment after Retirement and Support for Retirement Planning

DIC has deployed a system that facilitates the reemployment until age 65 of individuals reaching the retirement age of 60 and wishing to remain with the organization. Options available to such individuals include full-time work, short-time work and work sharing. The framework enables reemployed individuals to maximize their experience and make full use of their accumulated technological capabilities and specialized expertise.

Number of Reemployed Individuals (Including Individuals Seconded to DIC Group Companies)

	Fiscal year 2012	Fiscal year 2013	Fiscal year 2014
Number of retirees (A)	84	24	39
Number of individuals seeking reemployment	52	16	28
Number of individuals reemployed (B)	44	16	27
Reemployment rate (B) / (A)	52.4%	66.7%	69.2%

DIC also offers classes for employees within a year of retirement that helps them prepare for retirement. These classes provide assistance with retirement planning, education regarding the national pension system and retirement lifestyle simulations.

DIC works tirelessly to promote diversity at its workplaces and among its employees. In so doing, the Company strives to create work environments as well as develop and implement systems that enable motivated employees to fulfill their potential and contribute to the growth of DIC and its businesses.

Initiatives that Support a Healthy Work–Life Balance

DIC views work–life balance as essential to both self-realization and sustainable corporate growth. Accordingly, the Company encourages employees to seek both a satisfying work life and a fulfilling life outside work, creating a positive cycle that yields value-added results.

DIC strives to encourage work–life balance by creating positive, supportive workplaces, notably by enhancing programs that enable people to balance the demands of work with private commitments such as caring for children or family members who are ill. The Company has also deployed systems that enable employees to restrict the distance they can be transferred, reduce the amount of overtime hours, encourage employees to take annual paid leave and promote health management.

❶ Enhancing Programs to Help Employees Balance Work, Childcare, Nursing Care and Other Private Commitments

In 1986, DIC blazed a trail for chemicals manufacturers in Japan by implementing a childcare leave program. In 2007, the Company established work and childcare balance support programs, which introduced flexible working styles. DIC has also set up various systems that exceed legal requirements, and has done much in workplaces to make it easier for employees to harness its systems. In fiscal year 2008, the Company acquired the Kurumin Mark, which recognizes companies that promote initiatives designed to assist employees in raising children.

Work and Childcare Balance Support Programs

Childcare Leave Program	The maximum length of leave is until the child reaches the age of 2 years and 6 months, which is one year longer than the legally mandated leave period.
Leave to Assist with Parenting Program	Male employees can take five days' paid leave during the eight weeks following their child's birth to assist with parenting.
Childcare While Working Program	This program encompasses two flexible working systems. One enables employees to shorten their daily working hours by up to three hours until the end of a child's third year of elementary school. The other allows employees to stagger their working hours to accommodate childcare schedules.
Economic support system	This system enables employees on unpaid childcare leave to borrow a portion of their bonuses in advance.
Nursing care leave system	Employees can take such leave for up to one year, exceeding the statutory maximum of 93 days.
Nursing Care While Working Program	Employees not wishing to take leave while providing nursing care can shorten their daily work by up to two hours or opt for a system in which they shorten their days by two hours before or after prescribed working hours.
Return to previous (or equivalent) position	A rule has been instituted whereby employees returning from leave return to their previous position or an equivalent position.
Information sharing to promote program participation	DIC's views on support for work and childcare balance, as well as a guide to its various available systems and how to make use of them, are posted on the Company's website and on its intranet.

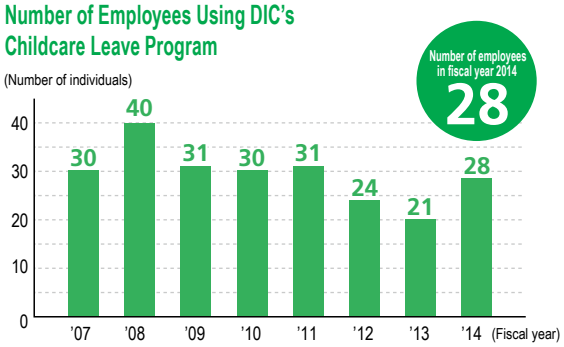
Relocation Limitation System

In fiscal year 2002, DIC introduced a system in which as for transfers requiring relocation, regular employees have the option to accept it or not. In fiscal year 2012, the Company established a system that allows management-level employees to limit the locations to which they will accept transfers, making it easier for employees who are unable to accept transfers that involve relocating because of childbirth, childcare, nursing care or other responsibilities to effectively balance their work and private lives.

Kurumin Mark Certification

In fiscal year 2008, DIC was accorded the Kurumin Mark by Japan's Ministry of Health, Labour and Welfare, which recognizes companies that actively promote initiatives that assist with child rearing.

Number of Employees Using DIC's Childcare Leave Program



In fiscal year 2014, 28 employees made use of DIC's Childcare Leave Program, all of whom subsequently returned to work. DIC also encourages male employees to take leave to assist with parenting and 57.3% of eligible employees took such leave in the year under review.

Numbers of Employees Taking Leave to Assist with Parenting (Including those Seconded to DIC Group Companies)

	Fiscal year 2012	Fiscal year 2013	Fiscal year 2014
Number of male employees whose partners gave birth	102	74	110
Number of male employees taking leave to assist with parenting	62	43	63
Leave-taking rate	60.8%	58.1%	57.3%

❷ Reducing Extreme Overwork and Encouraging Employees to Take Annual Paid Leave

DIC has deployed an electronic system to manage on-site hours, working hours and approved overtime hours. As a measure to prevent extreme overtime, if an employee exceeds the overtime limit agreed to with the employees' union, his or her supervisor is required to submit a report to management confirming the work and reasons for the long hours while also presenting specific measures to ameliorate the situation. This report is also shared with the union.

DIC encourages employees to take annual paid leave, notably by recommending leave timing at each business site and having employees plan dates for such leave.

On average, in fiscal year 2014 employees worked 12.2 hours of overtime each month and received 19.1 days of annual paid leave, of which they took 11.0 days, for a usage rate of 57.6%.

Average Number of Monthly Overtime Hours per Employee

	Fiscal year 2012	Fiscal year 2013	Fiscal year 2014
Average per individual	9.5	12.3	12.2

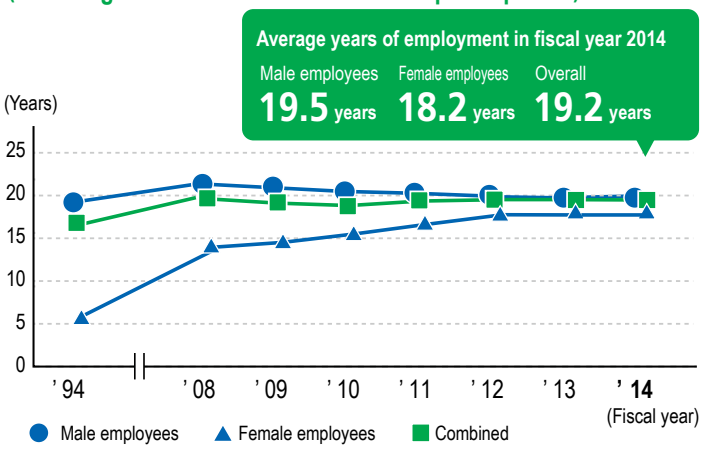
Annual Paid Leave Taken

	Fiscal year 2012	Fiscal year 2013	Fiscal year 2014
Average number of days granted	19.3	19.1	19.1
Average number of days taken	10.7	10.4	11.0
Usage rate	55.4%	54.5%	57.6%

❸ Average Years of Employment

DIC works to enhance job satisfaction and its programs to ensure a healthy work–life balance. In fiscal year 2014, just 0.9% of employees resigned of their own accord. In recent years, there has been very little difference in the average years of employment for male and female employees.

Average Years of Employment (Including Individuals Seconded to Group Companies)



VOICE from the DIC Group

General Affairs and HR Department **Jun Tsutsumi**

The support and understanding of my colleagues ensured a worry-free leave.

I decided to take advantage of the Leave to Assist with Parenting Program to take five days' leave when my wife had our second child. The program allows male employees to chose five days at their own discretion during the first eight weeks after the birth of their children to assist with parenting, which made it easy for me to organize my work and plan properly. My wife returned to her family home to give birth, so I was able to join her there for the duration of my leave. While I was there, my job was to look after our three-year-old son. The two of us spent the days going for walks, playing together and relaxing. I think we both felt refreshed and recharged. I was really happy to be able to reduce the burden on my wife even just a little. I admit that I was a little concerned about my responsibilities at work beforehand, but my colleagues were very understanding and supportive. All in all, it was a rewarding experience for my entire family.

Caring for Mental Health

DIC works to correct problems that have been shown to negatively affect psychological well-being, implementing measures to combat harassment and enhance the management of work hours to prevent extreme overwork, among others, thereby ensuring that its labor management practices comply with legal requirements. DIC has also established a mental health program under the direction of an in-house occupational health psychologist, under which it is promoting comprehensive efforts to address mental health care issues, including providing ongoing training to facilitate effective line care* and equip employees with self-management skills, installing an internal help desk and providing access to outside counselors, and providing support to ensure a smooth return to work for employees taking leave.

* Line-care training: Training for supervisors to help them recognize promptly when an employee is unwell and respond appropriately by, for example, recommending guidance or counseling or making workplace improvements.

Topic

Saitama Plant earns Workplace Wellness Starter Certificate

DIC's Saitama Plant works actively to address mental health issues in the workplace. The plant recently earned a Workplace Wellness Starter Certificate, which is given by the Workplace Wellness Forum in recognition of workplaces that promote the mental and physical well-being of employees. The efforts of both labor and management at the plant to create a workplace conducive to wellness, primarily through the creation of specific task forces, were cited in the Forum's rationale for certifying the plant.

Workplace Wellness Starter Certification Program

Organizations promoting efforts to create workplaces conducive to wellness can apply to the Workplace Wellness Forum for certification under its Workplace Wellness Starter Certification program. In evaluating applications, the Forum looks at employees' work engagement, the cohesiveness of workplace identity and the effectiveness of measures implemented. (The Workplace Wellness Forum is sponsored by the Japan Productivity Center and the University of Tokyo.)

2014 いきいき スターター認証 職場いきいき職場づくりフォーラム

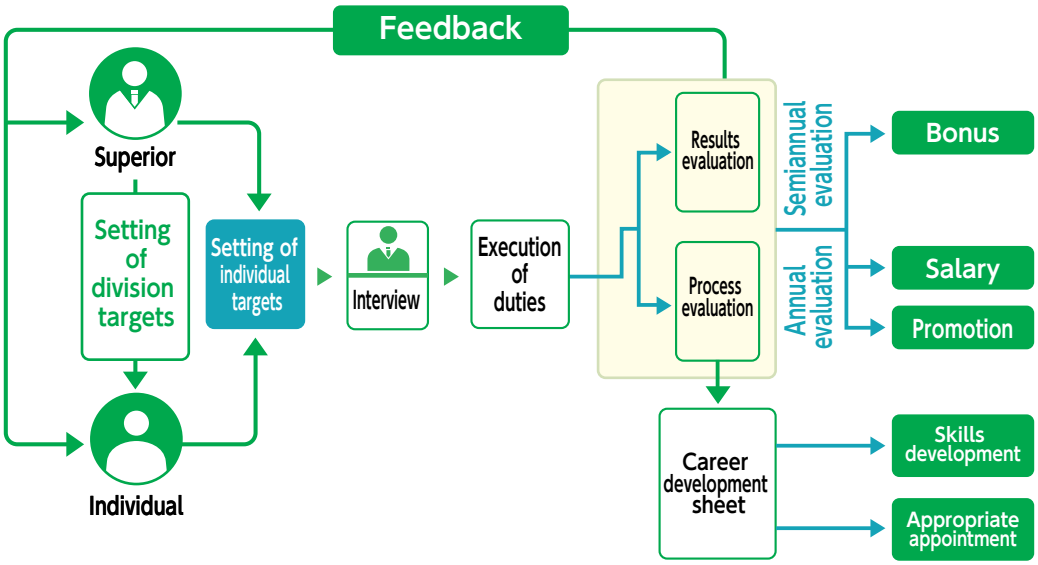
Securing and Fostering Human Resources

❶ Ability-Oriented Qualification System and Fair and Impartial Treatment

To enable all employees to fulfill their potential in jobs suited to their abilities, and to ensure that their efforts are reflected appropriately in their treatment, DIC has consolidated its numerous employee qualification systems irrespective of job classification and educational credentials. The selection of employees to recommend for qualification is done through screening based on objective standards, thereby guaranteeing equal opportunities for promotion to all motivated, capable employees.

Personnel evaluation and remuneration systems designed to enhance job satisfaction ensure that abilities and achievements are assessed appropriately and reflected in a timely manner in their treatment. Of note, DIC has introduced MBO into its personnel evaluation system, a goal-setting management tool that promotes both corporate growth and employee development. Results of individual evaluations are fed back in full to employees, including reasoning behind determinations—a transparent process that ensures employees are largely satisfied with evaluation results.

DIC's Personnel Evaluation System



❷ Training System

DIC's training system comprises programs in six categories. These programs are based on practical curricula that focus on honing workplace skills and accelerating change in line with business strategies. In fiscal year 2015, the Company will reinforce its global human resources development training programs.

DIC Training Programs

Management-level training	DIC Management School, DIC Business College, training for newly appointed CEOs of Group companies, media training
Global human resources development	Pre-departure training for employees assigned to overseas posts, training to enhance English-language communications skills, training in how to compose e-mails in English, Global Challenge Program
Level-specific training	Level-specific training for newly promoted employees, line management training, training for coaches to instruct new employees, follow-up training for new employees and others
Department- and job-specific training	Production department-specific human resources development program, technical department-specific human resources development program, programs to foster human resources for sales departments and support departments
On-the-job training	Overseas trainee program, domestic trainee program, trainee program for non-Japanese employees, practical training for new recruits
Self development	Correspondence courses (approximately 220 different courses are offered), e-learning courses, in-house seminar courses, Skype-based English conversation courses, training for the TOEIC Institutional Program(IP) Test

Global Human Resources Development

1 Training for candidates being considered for overseas assignment (global human resources development)

Practical training built around anticipated global business situations; training to enhance English-language communications skills, which seeks to improve language abilities; pre-departure training for employees assigned to overseas posts

2 Training in how to compose e-mails in English* (global human resources development)

Training designed to equip employees with the tools necessary for global communications

3 Global Challenge Program (global human resources development)

Training aimed at cultivating a global perspective and an understanding of other cultures

4 Skype-based English conversation courses* (self development)

Informal English conversation classes with a native English speaker via Skype that can be scheduled to suit the individual's schedule

5 Training for individuals planning to sit for an official TOEIC test (the TOEIC Institutional Program (IP) Test) (self development)

Employees have two opportunities annually to take the TOEIC IP Test in-house.

* Newly introduced in fiscal year 2015

Participants in the Global Challenge Program

On-the-Job Training

DIC offers on-the-job training, the purpose of which is to foster global human resources by dispatching them to gain experience working at a DIC Group company overseas. In fiscal year 2014, 18 trainees were dispatched to nine countries and territories, including the United States, the PRC and Singapore. Eligibility for the program is not limited to employees in Japan. DIC Group companies in Japan welcome trainees from overseas Group companies, giving them a chance to deepen their understanding of Japanese culture, commercial practices and business manners, as well as contributing to the globalization of the Japanese company.

Employees and trainees at the offices of a DIC Group company in Singapore

VOICE from the DIC Group

Polymer Processing Group 1 **Saori Nara**

I continue working to broaden my global perspective.

I originally decided to take part in the Global Challenge Program because I had always felt that my English was poor. I guess I sort of equated "global" with the ability to speak English, but the more classes I took the more I came to realize that a global perspective is really the ability to cast aside preconceived notions and welcome the idea of diversity. Whether you are working in Japan or overseas, having such a perspective is really important because you come into contact with many different people every day. Since completing the program, I have continued to study English daily. In my department, we have also established a global-themed workshop. I look forward to honing my skills to the point where I can truly be considered a "global" human resource.

Global Supply Chain Management

Goals and Achievements of Major Initiatives

Objectives of initiatives	Goals for fiscal years 2014–2015	Achievements in fiscal year 2014	Evaluation	Goals for fiscal year 2015
Create a foundation for fair purchasing practices.	• In the PRC, hold explanatory meetings for DIC Group printing inks companies, conduct CSR procurement assessments for suppliers and provide feedback. • In Southeast Asia, begin preparations for CSR procurement assessments using version 2 of the *DIC Group Supply-chain CSR Deployment Guidebook*.	CSR procurement assessments were conducted for and feedback provided to 25 suppliers of DIC Group companies in the PRC.	★★★	• Hold briefings on CSR procurement assessments at DIC Group companies in Greater China, Taiwan and Japan. • Link Sun Chemical Group and DIC Group CSR procurement efforts.
Promote CSR procurement.	• Implement a second round of CSR procurement assessments in Japan in line with version 2 of the *DIC Group Supply-chain CSR Deployment Guidebook*. Confirm the status of CSR procurement and improvements since the previous round and provide feedback to all suppliers assessed. • Continue on-site inquiries for certain suppliers.	• CSR procurement assessments were conducted for approximately 400 suppliers in line with version 2 of the *DIC Group Supply-chain CSR Deployment Guidebook*. Feedback was provided to all suppliers assessed. • On-site inquiries were conducted for 9 of the 43 assessed suppliers for which such an inquiry was deemed appropriate.	★★	• Continue to conduct CSR procurement assessments for suppliers in line with version 2 of the *DIC Group Supply-chain CSR Deployment Guidebook*. Provide feedback to all suppliers assessed. • Continue on-site inquiries for certain suppliers.

Basic Approach

With the aim of ensuring its extended supply chain functions in a socially responsible manner, the DIC Group established the DIC Group Universal Purchasing Policy in 2008, based on which it also formulated purchasing management regulations, thereby creating a solid purchasing configuration. In 2009, the Group formulated the DIC Group CSR Procurement Guidelines, which clarify issues it expects suppliers to address. The Group promotes CSR procurement across its supply chain by ensuring that all suppliers understand and abide by these guidelines.

The DIC Group has operations in Japan, the Americas and Europe, Greater China and the Asia–Pacific region. Group companies in different regions collaborate to promote global procurement in a manner that benefits the entire supply chain.

Extending the Reach of the DIC Group CSR Procurement Guidelines

In addition to its common global CSR procurement guidelines, the DIC Group has established the DIC Group Green Procurement Guidelines, the goals of which are to compel suppliers to comply with laws and regulations governing raw materials, promote the comprehensive management of chemical substances and work to lower their environmental impact. The Group promotes awareness among suppliers by, among others, using the *DIC Group Supply-chain CSR Deployment Guidebook* and conducting assessments and on-site inquiries.

The DIC Group CSR Procurement Guidelines

1. Compliance with laws and social norms
2. Respect for human rights and consideration for work environments
3. Safety and hygiene
4. Promotion of sound business management
5. Consideration for the environment
6. Information security
7. Appropriate quality and safety and improved technologies
8. Flexible attitude to ensure stable supplies and respond to change
9. Contribution to local communities and society
10. Promoting CSR and deploying it in the supply chain

Capitalizing on the *DIC Group Supply-chain CSR Deployment Guidebook*

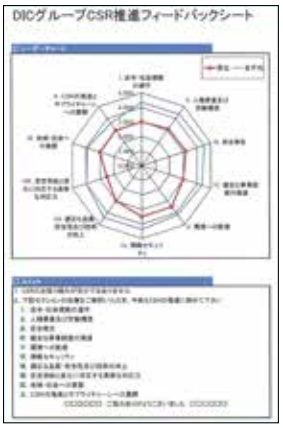
The *DIC Group Supply-chain CSR Deployment Guidebook*, which includes the DIC Group Universal Purchasing Policy, the DIC Group CSR Procurement Guidelines, the DIC Group Green Procurement Guidelines and related self-evaluation sheets, i.e., questionnaires, was originally published in December 2009. The DIC Group published version 2 of the guidebook—which includes new sections on conflict minerals and biodiversity, added in response to changing social imperatives—in July 2013. Version 2 further segments the DIC Group's 10 CSR Procurement Guidelines into 46 issues, providing explanations of each issue and self-evaluation questionnaires and a five-level marking sheet. Answering the questions makes it easier for suppliers to gauge their CSR procurement status. The DIC Group Green Procurement Guidelines list seven laws and regulations with which DIC Group suppliers must comply and details the Group's criteria for selecting raw materials suppliers.

Self-Evaluations

The DIC Group asks suppliers to complete and submit self-evaluation questionnaires covering 46 issues on five levels. The Group then prepares radar charts comparing responses received from all suppliers surveyed and provides feedback. Feedback sheets make it easier for suppliers to confirm their CSR procurement status within the DIC Group supply chain and to apply that information to future CSR initiatives.

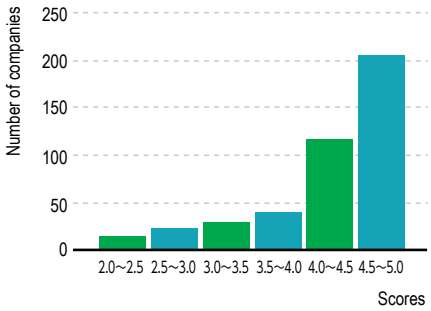
The Group also asks suppliers to complete and submit DIC Group Green Procurement Guidelines questionnaires, confirming that they do not use any of the substances prohibited under the seven laws and regulations listed in the guidelines in either their production facilities or their plants, as well as to confirm their own environmental management status.

From fiscal year 2010 through fiscal year 2013, the DIC Group conducted CSR procurement assessments—comprising self-evaluations and feedback—for 439 suppliers, acting in line with version 1 of the *DIC Group Supply-chain CSR Deployment Guidebook*. From November 2013 through March 2015, the Group conducted a second round of assessments for 429 companies using version 2 of the guidebook.



Feedback sheet

Assessment Distribution Chart



Conducting On-Site Inquiries to Advance CSR

Following the self-evaluation stage, the DIC Group conducts on-site inquiries for certain suppliers to help them further their understanding of and commitment to CSR. Here, the Group asks suppliers for their appraisal of their responses to the 46 questions and then presents its own findings. Through the exchange of views, the Group seeks to eliminate gaps between suppliers' assessments and its own stemming from, among others, differences in operating scale or the presence or absence of a dedicated CSR team. The Group may ask suppliers to address significant problems. Conversely, suppliers may have questions about DIC's CSR initiatives. Accordingly, the Group endeavors to ensure that this is a beneficial process for both parties. Having prepared reports summarizing on-site inquiry results, the Group provides feedback to suppliers for whom inquiries were conducted. From fiscal year 2011 through fiscal year 2014, the Group identified 43 suppliers as warranting an on-site inquiry. The DIC Group thus encourages responsible procurement between the Group and suppliers through a comprehensive process that encompasses multiple steps, from questionnaires to on-site inquiries.


On-site inquiry


On-site inquiry report

Promoting CSR Procurement on a Global Scale

The DIC Group uses English- and Chinese-language versions of the *DIC Group Supply-chain CSR Deployment Guidebook* to promote CSR across its global supply chain. In fiscal year 2011, the Group held briefings focusing on CSR procurement and the assessments it conducted for 21 suppliers in the PRC and three in Taiwan, while in fiscal year 2013 it held such briefings for eight suppliers in Southeast Asia.

In fiscal year 2014, regional headquarters in Greater China and the Asia–Pacific region sent self-evaluation questionnaires to 25 in Greater China and 45 suppliers in Southeast Asia, while the parent company in Japan has conducted assessments of 68 overseas suppliers. The Group also conducts on-site inquiries overseas.

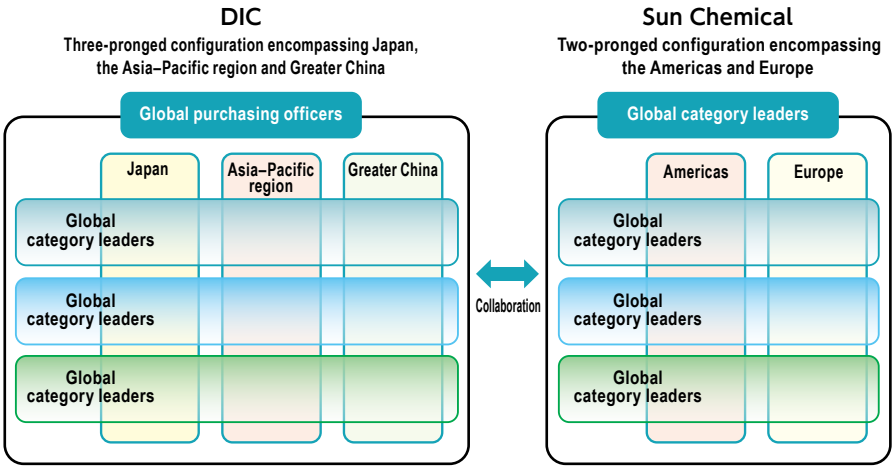
The Sun Chemical Group, which functions as the DIC Group's regional headquarters for the Americas and Europe, undertakes its own efforts to promote awareness of CSR procurement, using an independent purchasing manual into which the DIC Group CSR Procurement Guidelines have been incorporated.

Briefing in the PRC

Global Procurement Initiatives

The DIC Group continues to leverage collaboration among Group companies in Japan, the Americas and Europe, Greater China and the Asia–Pacific region with the aim of creating an optimal global supply chain configuration, thus ensuring that its procurement practices are safe, reliable and worthy of its customers' trust.

DIC Group Global Purchasing Configurations



Conflict Minerals Survey

In July 2010, the Dodd–Frank Wall Street Reform and Consumer Protection Act, which contains a provision requiring companies to report on their use of conflict minerals, was signed into law in the United Sates. The DIC Group recognizes the importance of addressing the issue of conflict minerals. As stated in its Basic Policy concerning Conflict Minerals, presented on its global website, the DIC Group refrains from using gold, tantalum, tungsten and tin, which are classified as conflict minerals, that is, minerals mined in conditions of armed conflict and abuse in the Democratic Republic of the Congo and its neighboring countries. Moreover, should any raw materials purchased from third-party suppliers be found to contain conflict minerals, the DIC Group will immediately terminate procurement thereof. The DIC Group is using the Conflict Mineral Reporting Template, created by the Electronic Industry Citizenship Coalition (EICC) and the Global e-Sustainability Initiative (GeSI), to conduct conflict minerals audits across its entire supply chain, an ongoing effort. As of December 2014, the Group had received responses for more than 90% of the items currently procured by Group purchasing departments.

VOICE from the DIC Group

Manager, Purchasing and Logistics Division **Toshio Yamagami**

On-site inquiries help build trust and understanding.

I accompanied officials when they conducted on-site CSR inquiries at the importers that I am in charge of and verified the results of CSR procurement assessments submitted by those companies. I initially had no idea what sort of CSR initiatives I might find—after all, trading houses are not manufacturers. In fact, all of the importers I visited maintain CSR programs as a key component of their corporate policy. Exchanging opinions with suppliers on assessment results helped enhance mutual understanding and I found the opportunity to see different perspectives on CSR, particularly in areas such as quality control and supply stability for imported materials, especially useful.

Establishing Solutions-Oriented Businesses

Goals and Achievements of Major Initiatives

Objectives of initiatives	Goals for fiscal years 2014–2015	Achievements in fiscal year 2014	Evaluation	Goals for fiscal year 2015
Propose solutions-oriented businesses that respond to social imperatives.	Cultivate solutions-oriented businesses Anticipate new social needs arising from global megatrends and plan new businesses that provide solutions to those needs.	Promising new markets were identified in five key areas—resources, materials and energy; logistics and industrial equipment; electronic and electrical equipment; medical care and medical devices; and general consumer products—and social needs and technological themes were abstracted.	★★	Cultivate solutions-oriented businesses Anticipate new social needs arising from global megatrends and plan new businesses that provide solutions to those needs.
	Strengthen the DIC brand Make use of product guidebooks, exhibitions and other communications tools and opportunities to promote awareness of the DIC brand.	Product guidebooks became well established as an effective tool for communicating DIC's comprehensive capabilities, namely, its products and technological prowess, which enhanced brand appeal. Participation in exhibitions also helped strengthen the DIC brand by raising visibility and highlighting comprehensive capabilities.	★★★	Strengthen the DIC brand Make use of product guidebooks, exhibitions and other communications tools and opportunities to promote awareness of the DIC brand.

Capitalizing on the Changing Needs of Society

The DIC way of doing business starts with listening to what its customers say. The cornerstone of the DIC Group's approach is to swiftly grasp the concerns of its customers and, by identifying those shared by multiple customers, to gain insights into emerging social needs and offer appropriate solutions. While the starting point is the voice of its customers—an approach known as "customer-in"—the Group also takes a "market-in" approach, paying heed to issues of global significance, such as global warming, with the aim of predicting trends and anticipating the future needs of society.

Business Activities with Roots in Issues of Concern to Society

The principal factor behind efforts to advance the use of electric vehicles (EVs) is the need to address crucial issues such as global warming and fossil fuel depletion. The practicality of EVs will depend on the resolving of a number of key technological challenges. Of particular note, it is crucial to increase the capacity of storage batteries, reduce the size and weight of powertrains*1 and improve the durability of fuel cells. With the goal of contributing to the sustainability of society, the DIC Group continues to promote research aimed at addressing such challenges, based on which it is developing technologies that will yield concrete, viable solutions, including innovative materials that boost battery capacity and improve the performance of power devices*2. In the information and communications field, the Group is promoting the development of materials for printed electronics in response to needs arising from the growing trend toward wearable*3 and flexible*4 devices, which reflects the increased sophistication of information networks. In addition to automobiles, information and communications and other fields that necessitate advanced technologies, the Group is responding to social imperatives in such areas as packaging, graphics and the field it has dubbed "life and living," as well as proposing new businesses with the purpose of further evolving its business model.

*1 In a motor vehicle, the powertrain is the group of components that transform stored energy into kinetic energy for the purpose of propulsion.
*2 A power device is a semiconductor used as a switch or rectifier in power electronics.
*3 Wearable devices are incorporated into accessories such as watches and glasses and worn on the body rather than carried like traditional mobile devices such as smartphones and tablet computers.
*4 Flexible devices are bendable, rollable and more durable than conventional devices made with glass or other stiff, breakable materials.

Enhancing Brand Strength

Established as a printing inks manufacturer, DIC has expanded its business by leveraging its capabilities in organic pigments and synthetic resins to develop a diverse portfolio of innovative products. The Company's wealth of elemental technologies is what makes these products possible. To encourage broader customer awareness of its distinctive products and technologies, DIC publishes and distributes market-oriented product guidebooks. DIC also strives to enhance the DIC Group's brand through participation in trade shows such as FINETECH JAPAN and Tokyo Pack.

The DIC Group's booth at Tokyo Pack 2014

Identifying and Fostering Promising Markets Based on Anticipated Social Needs and Market Forecast

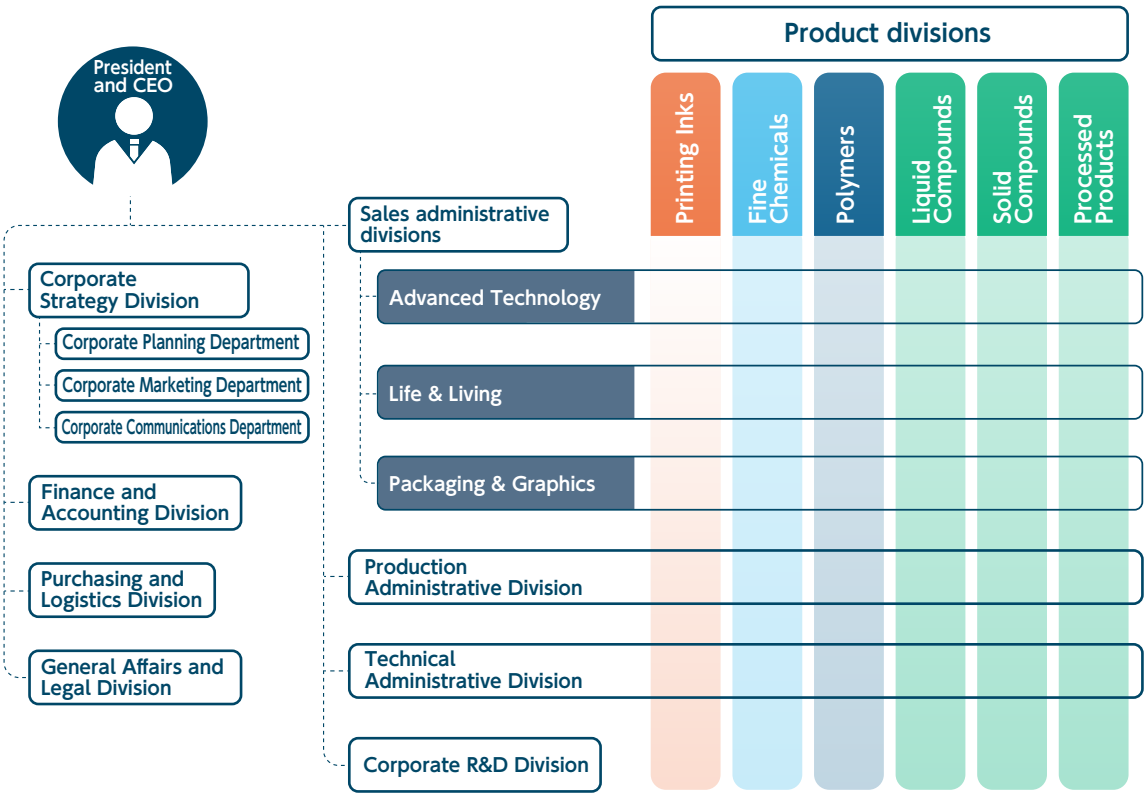
With the aim of realizing sustainable growth over the medium to long term, the DIC Group has identified promising new markets arising from social imperatives in five key areas—resources, materials and energy; logistics and industrial equipment; electronic and electrical equipment; medical care and medical devices; general consumer products; and construction infrastructure—and is striving to assess its ability to cultivate demand in each. The Group is also working to identify market-specific and shared technologies, as well as to discern technological issues that must be addressed, allowing it to accurately gauge growth and technology development potential and determine which of these markets it will enter.

Global Efforts to Expand Business Domains and Cultivate Next-Generation Businesses

Once it has resolved provisionally to enter a promising new market, the DIC Group sets about clarifying necessary technologies, systems and services, as well as key development themes. Technology and sales departments work together to verify theoretical value and ascertain the appropriate opportunity to enter the market and, bearing in mind its position in the supply chain, aim to create an optimal business model that will enable it to provide innovative solutions to its customers and build a robust business.

Leveraging the DIC Group's Matrix-Like Corporate Organization to Expand Operations

To enhance convenience for customers and encourage awareness of the DIC Group's comprehensive capabilities, namely, its products and technological prowess, DIC continues to promote a variety of organizational reforms. With the aim of shifting from a product-specific to a market-focused management approach, in fiscal year 2012 the Group adopted a matrix-like corporate organization, which positions product divisions on the vertical axis, thereby eliminating the organizational barriers that previously divided these divisions, while the sales administrative divisions, the Production Administrative Division and the Technical Administrative Division—further subdivided by business area—are positioned on the horizontal axis, a configuration designed to increase synergies and reinforce collaboration. This has also created a two-pronged technological development configuration comprising the Technical Administrative Division, which promotes research efforts designed to yield results short to medium term, and the Corporate R&D Division, which focuses on efforts with medium- to long-term time frames.



VOICE from the DIC Group

Manager in Charge, Corporate Marketing Department **Hiroko Sakurai**

Our goal is to capitalize on new technologies to develop robust new businesses.

The Corporate Marketing Department focuses on fostering new markets over the medium to long term. Our team got off to a lively start in fiscal year 2015, welcoming new members whose experience is in business planning. We are charged with predicting new markets based on emerging needs arising from global megatrends—a task we approach from four perspectives: impact on the earth and natural environment, economic and political implications, legal and regulatory issues and technological considerations—and collaborating with technical groups to develop essential new technologies. Under DIC's matrix-like corporate organization, we are also focusing on the establishment of robust new businesses based on such new technologies. We hope to realize viable solutions in a variety of areas including resources, materials, energy, transport equipment, medical care and medical devices.

Proposing Solutions that Leverage Elemental Technologies

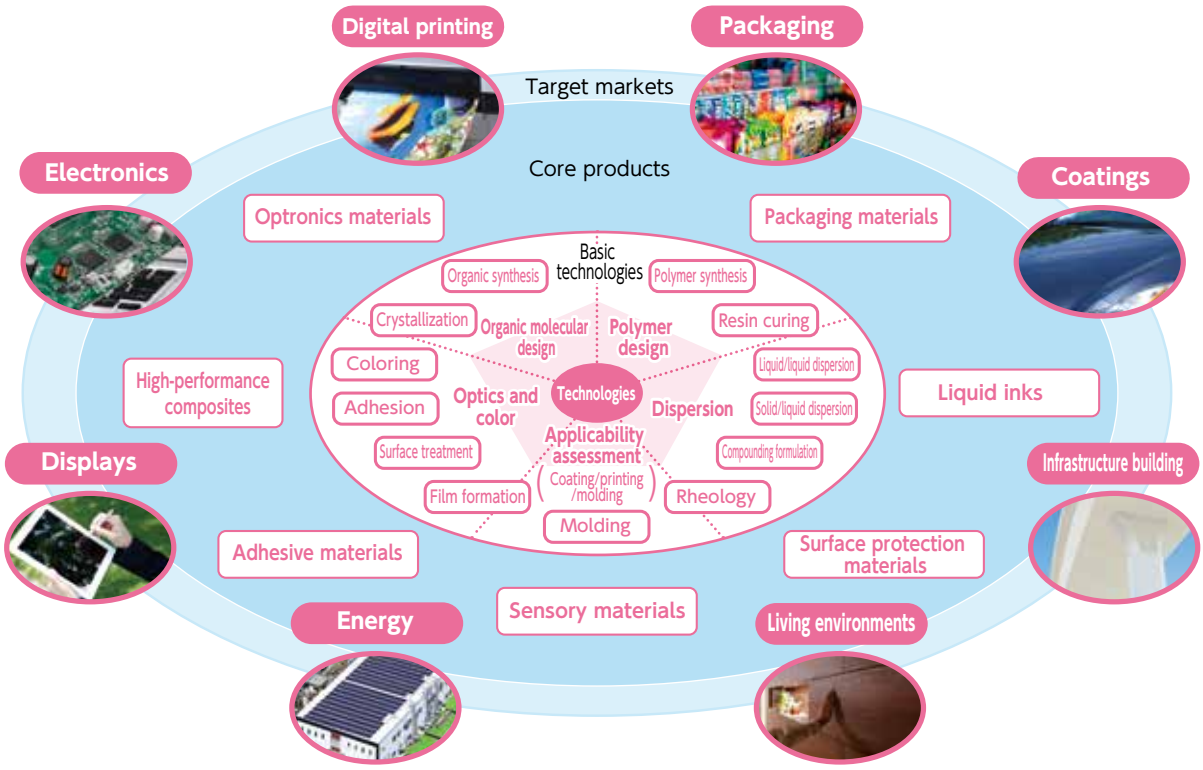
Goals and Achievements of Major Initiatives

Objectives of initiatives	Goals for fiscal years 2014–2015	Achievements in fiscal year 2014	Evaluation	Goals for fiscal year 2015
Enhance ability to develop products and technologies that facilitate contributions to a sustainable society.	Establish framework for overseas R&D bases.	In fiscal year 2014, printing inks technical centers were established and commenced operations in the Asia–Pacific region (Thailand) and the PRC. In January 2015, a polymer technical center was established in the Asia–Pacific region (Thailand).	★★	Enhance global R&D configuration.
	Ensure the swift launch of products that combine multiple technologies.	Limited-term projects were organized and resources allocated thereto. Approximately 10 new development themes suggested through this initiative have passed the proposal stage and been passed on to the pertinent technical division, which will explore commercial viability.	★★	Ensure the swift launch and firm sales of products that combine multiple technologies.
Promote development of environment-friendly products and services.	• Promote environment-related research themes. • Ensure the swift launch of environment-friendly products.	Environment-friendly products accounted for 52% of all DIC Group products.	★★	• Promote environment-related research themes. • Ensure the swift launch of environment-friendly products.

Achieving Sustainable Growth

With the aim of achieving its Color and Comfort by Chemistry management vision, the DIC Group is leveraging its core technologies, including those in the areas of optics and color, organic molecular design and polymer design, as well as its elemental technologies in such areas as synthesis, compounding and formulation, and surface treatment, to develop high-value-added products. The Group is also building a portfolio of next-generation products and new technologies that will support sustainable growth for such key applications as LCDs, electronics, digital printing and packaging, by integrating technological resources originating across the Group.

The DIC Group's New/Elemental Technologies and Target Markets



Specific Initiatives and Achievements

The DIC Group is encouraging a shift toward materials with a reduced environmental impact—notably water-based and solvent-free materials—and is advancing the development of environment-friendly products for use in displays and packaging, as well as for infrastructure-related applications, that help improve the environmental performance of the finished products in which they are used.

Products for Use in Displays and Electronics Equipment

In the area of products for flat-panel displays (FPDs), the DIC Group has developed an innovative green pigment for color filters used in LCDs for ultra-high-definition televisions (UHDTVs) and other next-generation high-resolution displays that achieves exceptional brightness and coloring power, thereby facilitating outstanding color reproduction. Products developed by the Group for use in displays for smartphones, tablet computers and other devices, include an ultrathin adhesive tape—approximately half the thickness of existing products—for sheets used to dissipate heat from electronic components, as well as antiscattering adhesive films, waterproof tapes and light-shielding tapes for smartphones. Newly developed materials include a resin for use as an optical clear adhesive (OCA) tape for laminating touch screens that is cured in a two-stage process using heat and UV light, a new type of epoxy resin for semiconductor encapsulation materials that achieves excellent reflow crack resistance and an epoxy resin hardener for high-frequency integrated circuits that boasts low dielectric properties and other key performance features.

Products for Packaging and Coating Applications

In printing inks, recent development efforts have focused on products that are both environment-friendly and safe, including UV-curable offset inks and gravure inks for food packaging. These include products for food packaging, such as a solvent-free adhesive for flexible packaging that boasts superb compatibility with inks sold to customers around the world and an adhesive with oxygen barrier properties that complies with the European Commission's Food Contact Materials regulations. In coextruded multilayer films, the DIC Group developed a new co-extrusion multilayer cast film for polypropylene food container for daily dish. Aimed at supermarkets and convenience stores, this new film offers an excellent seal that extends shelf life, as well as antifogging properties—enhancing the visibility of package contents—and easy opening. Another focus is waterborne products, including materials for automobile seats and finishes for instrument panels and door trim. Of note, the Group is exploring the potential for marketing an instrument panel and door trim finish that delivers excellent adhesion to difficult-to-bond olefin materials for nonautomotive applications.

Products for Infrastructure-Related Applications

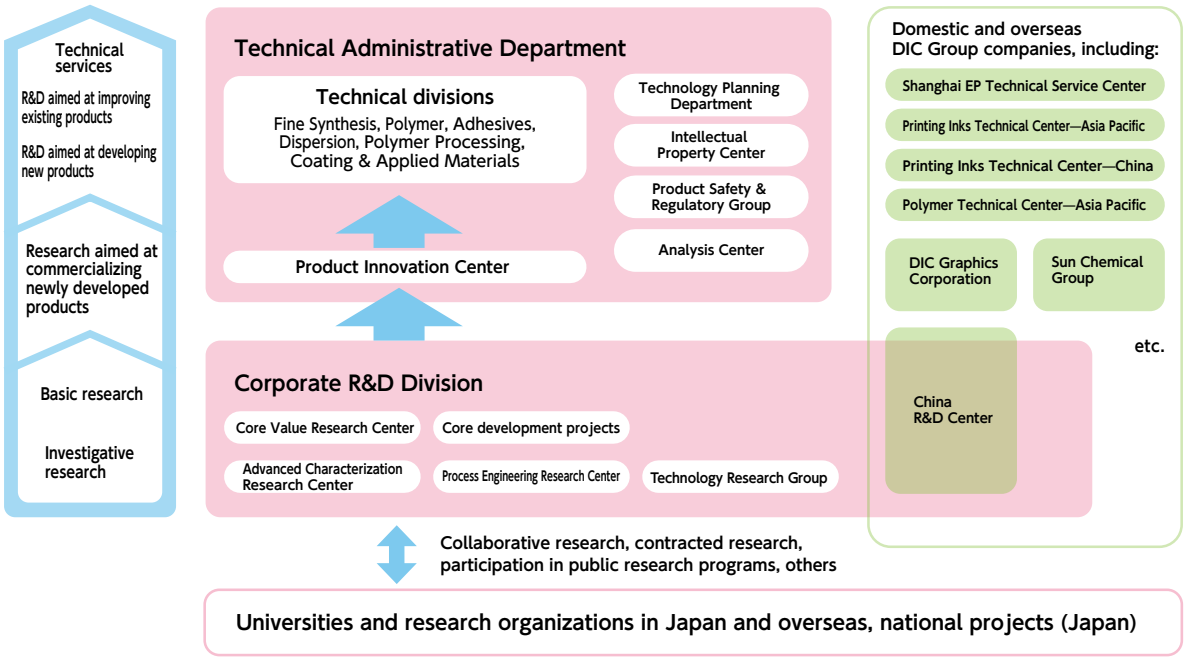
Addressing the deterioration of aging roads, bridges and other concrete structures has become a major social imperative. Recognizing the urgency of this issue, the DIC Group recently developed a resin for use in repairing such structures that delivers superior adhesiveness, even for structures that are water saturated as a consequence of rain or location in a waterway. Another newly developed product is a one-component urethane for use in waterproofing coatings with a resin base that complies with JIS A6021, the Japan Industrial Standards (JIS) benchmark for high-strength structural coatings.

A Global Framework for Product Development

To maximize global R&D resources, DIC's Technical Administrative Division and Corporate R&D Division cooperate with the R&D components of DIC Group companies around the world, including DIC Graphics Corporation; the Sun Chemical Group's research centers in the United States, the United Kingdom and Germany; and the China R&D Center in the PRC. In fiscal year 2014, the Group established two printing inks technical centers, one in Thailand for the Asia–Pacific region and one in the PRC, as well as a PPS technical service center in the PRC. In January 2015, the Group opened a polymer technical center in Thailand for the Asia–Pacific region.

The DIC Group works to leverage the capabilities of Group companies to promote R&D in line with a variety of sustainability-oriented development themes. Of particular note, DIC and the Sun Chemical Group are collaborating in the development of offset inks and coating materials with gas barrier properties for customers in Asian markets, efforts that have already led to the commercialization of numerous promising products.

The DIC Group's R&D Configuration



Promoting Environment-Friendly Products

Conscious always of the importance of ensuring its products are environment-friendly, DIC promotes the development of products and new technologies that are useful to society and works to increase the weighting of environment-friendly products in its portfolio, by reducing the volume of hazardous substances it uses, focusing on products that are less hazardous and products that facilitate recycling, and realizing safer production processes that generate less waste and use less energy. DIC also conducts environmental assessments on a continuous basis and strives to maintain a solid grasp of laws and regulations in different countries and territories and of trends in environmental measures, thereby ensuring its ongoing ability to engineer products that comply with diverse regulations governing the use of chemical substances in different markets. In fiscal year 2014, environment-friendly products accounted for 52% of all products put out by DIC and its subsidiary DIC Graphics Corporation.

Evaluation Sheet for Environment-Friendly Products

Department:		Prepared by:	Prepared on:		
Product to be Evaluated:					
Evaluation Item	Certifying Standards	Description	Average of f	Coefficient α	Sub total α·f
Energy Consumption	Reduction of energy in production, transportation, etc.				
Materials to be Used	Reduction of use of non-renewable materials, non-recyclable materials, etc.				
Hazards	Product with lower toxicity, etc.				
Amount of Waste Generated	Reduction of environmentally concerned substances, etc.				
Remarks:					
		Evaluator			

Life Cycle Assessments: Currently Under Consideration

In recent years, manufacturers have been required to quantify their consumption of nonrenewable resources and their emissions of substances that negatively affect the environment. In response to this and other trends driven by common concerns, DIC is currently considering the introduction of life cycle assessment (LCA) initiatives to ensure it fully grasps the various environmental impacts of all DIC Group products, as well as the adoption of the Greenhouse Gas Protocol's*1 Scope 3*2 standard.

*1 The Greenhouse Gas Protocol, or GHG Protocol, is a suite of standards for calculating and reporting of greenhouse gas emissions.
*2 Scope 3 is the GHG Protocol's standard for calculating indirect greenhouse gas emissions resulting from production, transport, business travel and commuting, among others, across entire supply chains.

VOICE from the DIC Group

Assistant Manager, Dispersion Technology Group 9, Dispersion Technical Division 1 **Keisuke Wakahara**

We are working to develop products that boast outstanding performance features and are environment-friendly.

One of the best examples of a DIC Group product that is both environment-friendly and delivers a superior performance is our VOC-free UV-curable printing inks. While the increasing predominance of electronic media has slowed growth in demand for printing inks in general, demand for UV-curable inks for use in packaging applications remains firm, as a consequence of which these inks have become one of our principal products in the offset inks market. In recent years, awareness of the need to protect the natural environment and rising concern regarding product safety have spurred an increase in the use of environment-friendly energy-saving UV and UV-LED lamps, further drawing attention to these inks that coat cleanly and safely, underscoring fundamental changes in operating conditions for printing inks manufacturers. In response to such changes, we are capitalizing on the DIC Group's proprietary polymer and pigment engineering technologies to develop products that boast outstanding performance features and are environment-friendly.

Adding Color and Comfort to Lifestyles

Basic Approach to Social Contribution

Based on its Guidelines for Social Contribution Activities, established in fiscal year 2009, the DIC Group promotes harmony with local communities and individuals through activities aimed at building a strong relationship with society.

The DIC Group's Guidelines for Social Contribution Activities

In line with its Color and Comfort by Chemistry management vision, the DIC Group will promote social contribution initiatives in three areas: business activities, culture and education, and communities and society.

Business activities

The DIC Group will offer products and services that contribute to the development of a sustainable society and protection of the global environment from the viewpoint of "CSR through business activities."

Culture and education

The DIC Group will engage in activities that will contribute to the development and promotion of culture, the arts, science and education in the areas of the culture of color and chemical science, including the development of next-generation human resources.

Communities and society

The DIC Group will strive to coexist harmoniously with local communities to develop a relationship of mutual trust. Moreover, the Group will provide an environment that enables employees to engage in voluntary contribution activities in their respective local communities.

Examples of Recent Initiatives

Publication of the *Guidebook for the Color Universal Design–Recommended Color Set*

The DIC Group is actively involved in R&D in the area of color universal design (CUD), as well as in expanding public awareness and understanding of CUD's importance. In November 2013, research conducted by the Group—in cooperation with the Japan Paint Manufacturers Association, the Industrial Research Institute of Ishikawa and the Color Universal Design Organization and under the supervision of the University of Tokyo—published the *Guidebook for the Color Universal Design–Recommended Color Set*. In developing this color set, participating organizations capitalized on their particular expertise in color vision characteristics to verify and adjust proposed colors, a process that facilitated the creation of a set of colors that are relatively easy to distinguish regardless of ability to see colors and can be reproduced using printing inks, coatings and digital imaging devices. The set encompasses 20 easy-to-distinguish colors: nine high-saturation accent colors suitable for publications design, printed text and other comparatively small surfaces; seven colors appropriate for broader surfaces such as directories and maps; and four achromatic colors easily distinguished from the preceding 16 colors, thereby ensuring information is conveyed accurately, and usable in printing inks, coatings and digital imaging devices. (Two additional alternative colors are included for coatings.)

Guidebook for The Color Universal Design–Recommended Color Set

Visiting Science Lab Program

In line with the Japanese government's efforts to promote career education initiatives, as well as to help curb a decline in the popularity of science among children, DIC Corporation and DIC Graphics Corporation conduct visiting science labs at public elementary schools. Through this program, which focuses on, among others, experiments in pigment synthesis and offset printing, the Group seeks to spark children's interest in science and encourage them to realize the close relationship between science and their everyday lives.

In fiscal year 2014, the DIC Group's visiting science lab program was nominated in several categories in the 2014 CSR Initiative Award in Education*, sponsored by Tokyo-based Leave a Nest Co., Ltd., winning the Special Jury Award and finishing third among 28 entries in the Award for CSR Initiatives in Education Selected by Junior and Senior High School Students category.

* The CSR Initiative Award in Education comprises the Award for Visiting Labs and Lectures for Elementary School Children and the Award for CSR Initiatives in Education Selected by Junior and Senior High School Students, which are voted on by, respectively, teachers and junior and senior high school students from across Japan. In fiscal year 2014, the DIC Group's program was one of 28 entries, eight of which were nominated for the Special Jury Award.

Children participating in a pigment synthesis experiment

DIC's 2014 CSR Initiative Award in Education certificates

Comment

Vice-Principal, Itabashi Municipal No. 2 Elementary School **Kaoruko Tanaka**

The visiting science labs at our school emphasize the role of science in children's lives.

Our school has enjoyed hosting visiting science labs conducted by DIC and DIC Graphics since 2011. When we evaluate offers by corporations to organize educational programs for us, we have thee criteria: Is the proposed program safe? Does it align with the relevant curriculum unit? Is the school's burden for preparation minimal? The DIC and DIC Graphics program ticks all three boxes for us. The focus is on showing children that studying science is useful in everyday life and the children are always delighted by the departure from their ordinary classwork. Each employee instructor works directly with three or four students, which I particularly appreciate as it gives children a chance to speak to the instructor directly and ask questions about the career of a scientist. I am a firm believer that initiatives such as this, which involve companies with deep local roots partnering with schools, play a vital role in community development.

Initiatives Led by the Central Research Laboratories

The Central Research Laboratories offers a variety of programs in such uniquely DIC topics as synthesis and chromatics to the students of local schools. In September 2014, for example, students at Chiba Prefectural Sakura High School, a designated Super Science High School*, were invited to the Central Research Laboratories to participate in a lab lesson on the theme of "synthesis and craftsmanship." Led by researchers from the facility, the event—which took place in a research laboratory—included an introduction to research conducted using state-of-the-art analytical equipment, a hands-on lesson on the use of said analytical equipment, a lab in which students experimented with synthesizing organic pigments and a lecture on DIC products, and was designed to help students better understand the concept of craftsmanship as it pertains to science. Lecturers also incorporated a career education component into the event, taking time to talk to interested students about the challenges and rewards of being a researcher.

* Super Science High School is a designation awarded by Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT) to senior high schools that implement curricula focused on the sciences and mathematics that goes beyond the Ministry's official guidelines with the aim of fostering the next generation of talented engineers and scientists.

Lab lesson for Chiba Prefectural Sakura High School students at the Central Research Laboratories

Kawamura Memorial DIC Museum of Art

The Kawamura Memorial DIC Museum of Art, located adjacent to the Central Research Laboratories in Sakura, Chiba Prefecture, was established in 1990 to publicly exhibit works of art collected by DIC Corporation and its affiliates. In May 2015, the museum celebrated its 26th anniversary. The museum exhibits works from a collection that spans numerous genres, with a focus on 20th century American art, and encompasses works by Rembrandt; Impressionists such as Monet and Renoir; modern European artists such as Picasso and Chagall; and early modern, modern and postwar Japanese artists.

In addition to its standing exhibit from its permanent collection of more than 1,000 major works, the museum stages special exhibitions several times a year that focus on pertinent literature and other artifacts that evoke the cultural atmosphere at the time the works were created to help visitors better understand the collection.

Another appealing aspect of the Kawamura Memorial DIC Museum of Art is its location on a lushly forested 10-hectare site alive with seasonal flowers and foliage that has been open to the public since the museum's establishment. In cooperation with the Chiba Biodiversity Center, the museum has also established a biodiversity satellite, a special display area featuring display panels explaining the importance of biodiversity, in one of the site's rest cabins.

In a move aimed at promoting relations with the local community and fostering local cultural activities, the museum has established an annex gallery on the museum site. This facility, which serves as an exhibition space for local amateur artists, is also made available once a year to elementary and junior and senior high schools in the Sakura area for an exhibition of local students' works. The Kawamura Memorial DIC Museum of Art also welcomes art classes, led by teachers, for museum tours, with the goal of further supporting art education.

Kawamura Memorial DIC Museum of Art

Biodiversity satellite

Nature trail traversing the museum site

Capitalizing on Business Opportunities Yielded by Recycling Initiatives

In addition to manufacturing and selling a broad range of molded plastic products in line with its ultimate objective, which is to protect lives, Group company DIC Plastics, Inc., in Japan, is an active proponent of environment-friendly business practices, particularly material recycling*1. Among the company's noteworthy achievements is its development of a system for sorting waste plastic generated during the manufacture of original products by type and color, which greatly assists with recovery. This has enabled the company to diversify its lineup of products made with recycled plastics, increasing the volume of such materials it uses and adding value to the products in which they are used.

DIC Plastics also promotes recycling by purchasing recycled plastics from reclaimers, which it uses in the manufacture of its mainstay plastic helmets and other products.

One of the most recent additions to DIC Plastics' product portfolio is the IZANO professional helmet for disaster situations. In addition to offering superb safety, the IZANO helmet can be folded to approximately 60% of its full size. These features, plus the extensive range of colors available, earned IZANO an award in the 2014 Good Design Awards*2, sponsored by the Japan Institute of Design Promotion.

Products made from recycled plastic bottle caps

*1 Material recycling involves the recycling of material from an original application but in a different form.
*2 Operated by the Japan Institute of Design Promotion, the Good Design Awards is a commendation program that annually recognizes products that represent superb achievements in design.

Siam Chemical Industry Receives CSR-DIW Award

On October 21, 2014, DIC Group company Siam Chemical Industry Co., Ltd., was presented with a CSR-DIW Award for 2014 by the Thai Ministry of Industry at a ceremony held at the Bangkok International Trade & Exhibition Centre. The CSR-DIW Award program was established in 2008 with the goal of raising the global competitiveness of Thai companies. Awards are given to companies in recognition of corporate social responsibility (CSR) initiatives judged as exceptional from the perspective of the seven core subjects defined in ISO 26000, the International Organization for Standardization's standard for social responsibility. (The DIC Group uses the designation "sustainability," rather than "CSR.")

Since 2012, Siam Chemical has promoted a variety of undertakings, including mangrove planting, community support and volunteer activities, and sponsorship for blood drives, with the active participation of both local and Japanese staff. The company's efforts continue to earn high marks, evidenced by the fact that it has received CSR-DIW awards for three consecutive years. Siam Chemical pledges to continue contributing to Thai society through effective sustainability initiatives designed to benefit residents of local communities as well as protect the environment.

Awards presentation

VOICE from the DIC Group

President, Siam Chemical Industry Co., Ltd. **Takahisa Yamatoya** (center)

We will redouble our efforts to promote sustainability.

We are very proud to have earned our third consecutive CSR-DIW Award in 2014. We see this award as recognition of ongoing commitment to ensuring that our operations are in harmony with the local community. This is an honor that I share with the employees of Siam Chemical. I look forward to continuing to work with everyone on staff to promote meaningful initiatives and redoubling our efforts to contribute to the sustainability of our community.

Spirulina: Promoting Harmony With Society

The DIC Group is the world's largest supplier of Spirulina, a cyanobacteria rich in more than 50 nutrients, including vitamins, minerals and essential amino acids. In line with a support agreement concluded in 2009 with the Alliance Forum Foundation (AFF), a Japan-based NPO, the Group provides assistance to the Spirulina Project, an AFF initiative that seeks to alleviate hunger and improve nutrition in the Republic of Zambia.

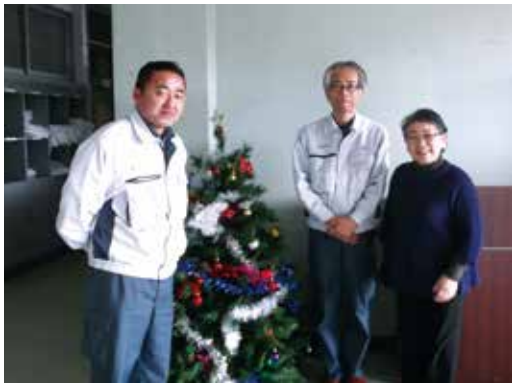
In June 2012, with the purpose of contributing to the well-being of the people of Zambia, we implemented a project to assess the impact of Spirulina on human health. This project verified a reduced incidence of malnutrition among children who regularly consumed Spirulina. Encouraged by these findings, the DIC Group and the AFF conducted production and technological feasibility studies in Zambia with the aim of facilitating local cultivation of Spirulina for local consumption, and in 2014 commenced pilot production. In fiscal year 2015, the DIC Group and the AFF will again conduct tests to measure the effectiveness of Spirulina, expanding the scope of testing to several hundred individuals. DIC support it by the donation of bulk powdered Spirulina. Currently, the Group also provides production and technological support through assistance with selecting locations for cultivation and providing information on raw materials.

The DIC Group is also engaged in a variety of other initiatives designed to promote the nutritional value of Spirulina. In fiscal year 2014, these included a nutritional education program for private elementary schools in Tokyo's Itabashi Ward.

Children in Zambia

Matching Gift Program

DIC has a matching gift program whereby it matches the total amount collected through an annual year-end fundraising drive spearheaded by its employees' union. Funds raised through the 2014 drive and matching gift program were donated to 19 children's homes and facilities providing support for disabled individuals.



DIC employees visit Toko Niji-no-ie in Ota, Gunma Prefecture, to present a donation

Support for Reconstruction Following the Great East Japan Earthquake

Since 2011, DIC has provided support for reconstruction in areas devastated by the Great East Japan Earthquake as a participant in the IPPO IPPO NIPPON project, an initiative organized by the *Keizai Doyukai* (Japan Association of Corporate Executives) with the aim of assisting local residents in rebuilding their lives. This initiative, which is scheduled to continue for five years, seeks to support efforts to rebuild communities and stimulate local economies by delivering funds collected from corporate and individual donors directly to schools and other facilities in need of support.

IPPO IPPO NIPPON project logo

Promoting Disclosure and Communication

Basic Approach to Promoting Communication

The DIC Group places a priority on communication with its stakeholders worldwide, which it promotes actively through direct dialogue in the form of, among others, participation in exhibitions, websites and events. By communicating effectively with stakeholders, the Group strives to ensure an adequate understanding of stakeholder expectations and to reflect such expectations in its business activities. The DIC Group is also expanding its awareness of the concept of stakeholder engagement, a key requirement under ISO 26000.

	Ties with customers	Ties with shareholders and investors	Ties with society	Ties with employees	Ties with the media
Basic approach	Build trusting relationships. By incorporating the demands of customers, seek to develop products that enhance customer satisfaction.	Ensure appropriate disclosure and build trusting relationships with shareholders and investors, encouraging both to evaluate DIC as an attractive investment.	Operate in harmony with the community and build positive relationships with local residents that will underpin the long-term sustainability of operations.	Provide workplaces that are conducive to job satisfaction and enable all employees to fulfill their potential. Over the long term, achieve true diversity.	Deepen mutual understanding through effective publicity, advertising and other communications efforts.
Communications tools	● DIC Report ● Websites ● Product pamphlets ● Corporate profile DVD	● DIC Report ● Websites ● Press conferences ● Annual report ● Quarterly results announcements ● *Yuka Shoken Hokokusho* (financial disclosure document required of listed companies in Japan) ● Shareholder newsletters ● Corporate profile DVDs	● DIC Report ● Websites ● Site reports ● Corporate profile DVD	● DIC Report ● *DIC Plaza* (in-house newsletter) ● Intranet ● *DIC Pocket Book* (in-house Group data file)	● Press conferences ● Interviews with journalists
Opportunities for communication	● Sales activities ● Participation in exhibitions	● General shareholders' meetings ● Results presentations ● IR conferences ● IR meetings	● Production facility tours ● Participation in projects involving collaboration among industrial concerns, government bodies and academic institutions ● Participation in community events ● Environmental monitoring	● Labor–management councils ● Results presentations for employees ● Presentations on the DIC Group Code of Business Conduct ● Sustainability presentations	● Newspapers ● Economic publications ● Industry publications

Ties with Customers

In fiscal year 2014, the DIC Group took part in numerous exhibitions in Japan and overseas. Such efforts created valuable opportunities for the Group to communicate with its customers.

In Japan, the DIC Group participated in Tokyo Pack 2014, held in Tokyo in October 2014, where it introduced a number of the Group's innovative and highly competitive products in the packaging field, including printing inks and films. The same month, DIC highlighted comprehensive Group strengths with an exhibit introducing organic pigments manufactured by global industry leader the Sun Chemical Group to domestic cosmetics manufacturers at Cosme Tech 2014, which was also held in Tokyo.

Overseas, the DIC Group took part in display, packaging and coating resins industry trade shows in multiple locations, including the United States, Germany, the PRC, Taiwan, India and Indonesia, all of which involved close cooperation between pertinent sales administrative divisions in Japan and overseas Group companies.

On another front, the Central Research Laboratories, a DIC Group R&D base located in Sakura, Chiba Prefecture, continued to welcome visitors to its showroom, which features displays illustrating the key role Group products play in everyday life, an approach designed to deepen public understanding of the DIC Group and its operations.

2014 American Coatings Show, held in Atlanta, in the U.S. state of Georgia

Ties with Shareholders and Investors

The DIC Group strives to ensure fair, appropriate and timely disclosure and to communicate closely with investors and incorporate their opinions and requests into its management and operating activities. In fiscal year 2014, the Group sought to enhance communication with domestic investors by holding two results presentations for institutional investors and securities analysts, as well as by participating in investor relations (IR) conferences and IR meetings of various types. Overseas, the Group held IR meetings in North America, Europe and Asia, encouraging greater understanding of the Group's strategies through presentations by senior executives.

Results presentation (February 2014)

Ties with Society

In addition to the business community, the DIC Group takes steps to enhance communication with ordinary consumers, including students. In fiscal year 2014, Group company DIC Graphics Corporation took part in the Corporate Project, an undertaking involving collaboration between industrial concerns and project sponsor Tokyo Communication Arts College. The project involves tasking students at the college with assisting in the resolution of issues related to, among others, the development of a new product and the creation of related advertising and package designs, by proposing responses that capitalize on their fresh, young sensibilities.

In May 2014, the Kawamura Memorial DIC Museum of Art held a two-day event on the museum site. The fair, titled "Arts and Crafts Fair in the Park," featured works by individuals with connections to Chiba Prefecture, food and drink stalls and an outdoor market, and attracted an estimated 15,000 guests.

In December 2014, DIC participated in Eco-Products 2014, marking its second consecutive appearance in this annual event, which is noted for attracting students as well as a wide range of other ordinary consumers. DIC's Eco-Products 2014 booth, which featured energy-saving UV-curable inks, green pigments for color filters and industrial adhesive tapes, attracted considerable attention from visitors as eco-friendly products.

Arts and Crafts Fair in the Park (Kawamura Memorial DIC Museum of Art)

Communications in the Field of Education

To further enhance public understanding of its operations, DIC invited three students from Sawakami Junior High School in Nagoya to visit its headquarters in Tokyo. While there, the students were given an introduction to the DIC Group using the Group's corporate profile DVD, as well as a presentation on DIC's safety and disaster-mitigation efforts, including hands-on safety training, environmental protection initiatives and efforts to combat environmental issues in consumer-relevant areas such as food packaging.

Overseas, DIC Group company DIC Compounds (Malaysia) Sdn. Bhd. welcomed a group of students from Miyanojo College, in Miyazaki Prefecture, Japan—a senior high school that is part of Japan's National Institute of Technology—for a visit to their facilities. The visit included a general introduction to the DIC Group and a tour encompassing, among others, the company's PPS compounds production line, technical center and safety laboratory, which manufactures equipment used by the DIC Group in its hands-on safety training. Following the tour, the visitors participated in a follow-up session that included a lively question-and-answer session with the company's R&D staff.

Junior high school students visit DIC's headquarters in Tokyo

High school students visit DIC Compounds (Malaysia)

Ties with Employees

The DIC Group promotes a variety of initiatives to encourage active communication with its employees. *DIC Plaza*, the Group's in-house newsletter, which is published in Japanese and English, highlights the Group's global operations and introduces colleagues from around the world. A Group intranet and various portal sites enable DIC to share information with employees worldwide and enhance understanding of its activities.

Senior management also promotes opportunities for direct communication with employees. These include quarterly operating results presentations for employees given by the president and CEO, the goal of which is to enhance understanding of the Group's management strategies and the Group's current operating and financial status.

In fiscal year 2014, the DIC Group gave 114 presentations at Group companies, principally in Japan, on sustainability initiatives. This was timed to coincide with DIC's decision to change the designation used across its program from "CSR" to "sustainability."

Results presentation for employees (February 2014)

DIC Plaza

Ties with the Media

DIC is reinforcing efforts to provide information with newspapers, magazines and other media as a means of enhancing its ability to communicate with its many stakeholders, who include its customers and shareholders, investors and local communities. This reflects a conviction that effective, independent publicity and advertising that facilitates objective media coverage is vital to securing stakeholders' understanding of the DIC Group and its operations. In fiscal year 2014, DIC provided the media with information on a variety of key subjects, including new products, operating results, sustainability initiatives and personnel systems. Increased media coverage brought positive responses from stakeholders across the board.

Press conferences in fiscal year 2014	Interviews with journalists in fiscal year 2014
53	104

DIC Report 2015 and ISO 26000: A Comparison

Core subjects	No.	Themes	Relevant page	Relevant sections/initiatives
Organizational Governance	6.2	Organizational governance	P3–4	A Message from the President
			P8–9	Messages from Top Executives at Regional Headquarters
			P26–27	The DIC Group's Sustainability Program
			P28	Corporate Governance
			P29–30	Toward Fair and Transparent Corporate Activities
			P31–32	Reducing Business Risks and Preventing the Recurrence of Incidents
			P80–82	Establishing Solutions-Oriented Businesses
			P91–93	Promoting Disclosure and Communication
Human Rights	6.3.3	1: Due diligence	P26–27	The DIC Group's Sustainability Program
			P69	Working to Enhance Job Satisfaction
			P77–79	Global Supply Chain Management
	6.3.4	2: Human rights risk situations	P69	Working to Enhance Job Satisfaction
			P77–79	Global Supply Chain Management
	6.3.5	3: Avoidance of complicity	P27	Ensuring DIC Remains a Globally Trusted Corporate Citizen with a Proud Reputation
			P27	Leveraging its Position as a Global Manufacturer of Fine Chemicals to Support the UNGC
			P77–79	Global Supply Chain Management
	6.3.6	4: Resolving grievances	P29–30	Initiatives to Promote Compliance
				Establishing and Operating a Whistle-Blowing System
	6.3.7	5: Discrimination and vulnerable groups	P70	Promoting Diversity
	6.3.8	6: Civil and political rights	P29	The DIC Group Code of Business Conduct
			P69	Respect for Human Rights
	6.3.9	7: Economic, social and cultural rights	P89	Spirulina: Promoting Harmony with Society
	6.3.10	8: Fundamental principles and rights at work	P27	Ensuring DIC Remains a Globally Trusted Corporate Citizen with a Proud Reputation
			P27	Leveraging its Position as a Global Manufacturer of Fine Chemicals to Support the UNGC
Labour Practices	6.4.3	1: Employment and employment relationship	P69–76	Working to Enhance Job Satisfaction
	6.4.4	2: Conditions of work and social protection	P72–74	Initiatives that Support a Healthy Work–Life Balance
	6.4.5	3: Social dialogue	P69	Building Trust with the DIC Employees' Union
	6.4.6	4: Health and safety at work	P38–45	Occupational Safety and Health, Security and Disaster Prevention
			P74	Caring for Mental Health
	6.4.7	5: Human development and training in the workplace	P69	Global Human Resources Management
			P75–76	Securing and Fostering Human Resources
The Environment	6.5.3	1: Prevention of pollution	P35–37	Promoting Responsible Care
				Initiatives to Date
				Responsible Care Auditing
			P46–55	Preventing Global Warming
			P56–57	Reducing Emissions of Chemicals into the Environment
			P58–59	Reducing Environmental Impact on Air, Water and Soil
			P60–61	Reducing Industrial Waste
			P62	Overview of Environmental Impact of the DIC Group's Operating Activities
			P63–65	Managing Chemical Substances in Products
			P68	Report on Other Initiatives
	6.5.4	2: Sustainable resource use	P16–18	Special Feature Adhesive with Oxygen Barrier Properties (*PASLIM*)
			P25	Topic Groundbreaking Sun Chemical Solution Enhances the Recyclability of Shrink Sleeve-Labeled PET Bottles
			P83–84	Proposing Solutions that Leverage Elemental Technologies
			P88	Capitalizing on Business Opportunities Yielded by Recycling Initiatives
	6.5.5	3: Climate change mitigation and adaptation	P46–55	Preventing Global Warming
	6.5.6	4: Protection of the environment, biodiversity and restoration of natural habitats	P88	The Kawamura Memorial DIC Museum of Art
Fair Operating Practices	6.6.3	1: Anti-corruption	P29–30	Toward Fair and Transparent Corporate Activities
	6.6.4	2: Responsible political involvement	—	—
	6.6.5	3: Fair competition	P29–30	Toward Fair and Transparent Corporate Activities
	6.6.6	4: Promoting social responsibility in the value chain	P77–79	Global Supply Chain Management
	6.6.7	5: Respect for property rights	P29	The DIC Group Code of Business Conduct
Consumer Issues	6.7.3	1: Fair marketing, factual and unbiased information and fair contractual practices	P63–65	Managing Chemical Substances in Products
	6.7.4	2: Protecting consumers' health and safety	P35–37	Promoting Responsible Care Initiatives to Date Responsible Care Auditing
	6.7.5	3: Sustainable consumption	P83–85	Proposing Solutions that Leverage Elemental Technologies
	6.7.6	4: Consumer service, support, and complaint and dispute resolution	P63	Managing Chemical Substances in Products
			P66–67	Enhancing Product Quality and Customer Satisfaction
	6.7.7	5: Consumer data protection and privacy	P33–34	Initiatives to Ensure Information Security
	6.7.8	6: Access to essential services	—	—
	6.7.9	7: Education and awareness	P92	Ties with Society
Community Involvement and Development	6.8.3	1: Community involvement	P86	Basic Approach to Social Contribution
			P89	Spirulina: Promoting Harmony with Society
	6.8.4	2: Education and culture	P87–88	Visiting Science Lab Program
				Initiatives Led by the Central Research Laboratories
				The Kawamura Memorial DIC Museum of Art
	6.8.5	3: Employment creation and skills	—	—
	6.8.6	4: Technology development and access	P16–18	Special Feature Adhesive with Oxygen Barrier Properties (*PASLIM*)
			P19–21	Special Feature Epoxy Resin and Curing Agent for Infrastructure Renovation (*EPICLON with LUCKAMIDE*)
			P22–24	Special Feature Firefighting Foam (*MEGAFOAM*)
			P86	Publication of the *Guidebook for the Color Universal Design–Recommended Color Set*
	6.8.7	5: Wealth and income creation	—	—
	6.8.8	6: Health	P89	Spirulina: Promoting Harmony with Society
	6.8.9	7: Social investment	P90	Support for Reconstruction Following the Great East Japan Earthquake

Third-Party Verification

Verification Statement

17,June,2015

Mr. Yoshiyuki Nakanishi
Representative Director, President and CEO
DIC Co.,Ltd.

Objective

SGS Japan Inc. (hereinafter referred to as "SGS") was commissioned by DIC Co., Ltd. (hereinafter referred to as "the Organization") to conduct independent verification based on ISO14064-3:2006 and the SGS verification protocol regarding the data prepared by the Organization on performance data of GHG emissions and waste emissions (hereinafter referred to as "the assertion"). The objective of this verification is to confirm that the assertion in the Organization's applicable scope have been correctly calculated and reported in the assertion in conformance with the criteria, and to express our views as a third party.

Scope

The scope of verification is limited to the assertion in 34 domestic sites and 111 overseas sites. GHG emissions included in this performance data are Scope 1 and 2: GHG emissions from energy consumption ,GHG emissions from non-energy consumption and Scope 3: category5.
The period subject to report is from Jan 1, 2014 to Dec 31, 2014.

Procedure of Verification

The assertion was verified in accordance with ISO14064-3: 2006 and the SGS verification protocol, and the following processes were implemented at a limited level of assurance:

- Verification of the calculation system: interviews on the measurement, tabulation, calculation and reporting methods employed by the Organization as well as review of related documents and records
- Verification of the assertion: On-site verification, review of vouchers at Chiba Plant, Kashima Plant and analytical procedures and interviews carried out at all works included in the scope of verification at the Head office

The criteria for this review is based on "The Calculating and Reporting Manual for Greenhouse Gas Emissions Ver.3.4" of the Ministry of the Environment and the protocol specified by the Organization.

Conclusion

Within the scope of the verification activities employing the methodologies mentioned above, nothing has come to our attention that caused us to believe that the Organization's assertion was not calculated and reported in conformance with the criteria.

For and on behalf of SGS Japan Inc
Senior Executive & Business Manager
Certification Services Division

Yuji Takeuchi

Signed:

The DIC Group commissioned SGS Japan Inc. to conduct third-party verification of its data for greenhouse gas emissions and discharge of industrial waste.

Third-Party Opinion Regarding the 2015 DIC Report

Counselor,
The Japan Research Institute, Limited
Eiichiro Adachi

In his current capacity, Eiichiro Adachi conducts industry research and assesses corporate performance from the perspective of social responsibility. He also provides financial institutions with corporate information for socially responsible investing (SRI). A member of the Market Evolution and Corporations in the 21st Century working group organized by the *Keizai Doyukai* (Japan Association of Corporate Executives), Adachi was involved in the preparation of The 15th Corporate White Paper on "Market Evolution" and CSR Management: Toward Building Integrity and Creating Shareholder Value. He also served as a national expert for Japan to the ISO 26000 working group.

This year, I again had the honor of reviewing the DIC Report. The special feature section of the report, "Developing Innovative Products that Address Key Social Imperatives," made a particularly strong impression on me. One is inclined to think that the fine chemicals supplied by the DIC Group are products with which the average consumer has very little direct contact, but this feature illustrates that they in fact play an essential role in myriad industrial activities and administrative services and as such contribute to the creation of social value.

Having indicated in my review of the 2014 DIC Report that I would like to see DIC significantly expand the inclusion of information based on overseas examples, I would like to commend the inclusion this year of messages from top regional executives and information on, among others, the introduction of global safety data sheets and overseas energy-saving initiatives. Insofar as 59.7% of DIC's consolidated net sales and 54% of its consolidated operating income are generated outside Japan, I think it is important that the Company continues working to expand and enhance its presentation of information that enables readers to effectively grasp the performance of the DIC Group as a whole.

In my view, sustainability reporting by any company in the chemicals sector has eight crucial components: greenhouse gas emissions, release of pollutants into the air, energy consumption, water use, management of hazardous substances, product stewardship from the perspectives of risks to human health and the environment, contribution to the improved environmental efficiency of the company's customers, and industrial accidents/occupational health and safety. On the whole, I think that the 2015 DIC Report provides solid data in all eight areas. However, information on emissions of chemical substances into the environment and efforts to reduce these emissions generally focuses on the parent company and domestic Group companies. The fact that legal and regulatory inconsistencies from one country and one region to the next make this difficult is certainly understandable. However, this information is crucial. The report itself says: "As chemicals companies handle a considerably greater volume and more diverse range of chemical substances than companies in other industries, they must be extremely vigilant to prevent discharges of such substances into the environment." I would like to see DIC disclose information on efforts to reinforce related initiatives across the four regional groupings DIC uses for its sustainability reporting, that is, Japan, Greater China, the Asia–Pacific region, and the Americas and Europe.

In terms of organization, the presentation of information in line with 10 Group sustainability themes appears to have become standard. I do think that reader comprehension could be further aided by clarifying the differences between "business models that respond to social imperatives" and "new technology development and value creation." I would also like to see more information on intellectual property protection, which is certainly key to the competitiveness of printing inks and other fine chemicals products.

In closing, I would also like to see a less ambiguous explanation of what social imperatives the DIC Group recognizes. This year's report states that the Group also takes a "market-in" approach, paying heed to issues of global significance, such as global warming, with the aim of predicting trends and anticipating the future needs of society. I would like concrete examples of what social concerns and issues of global significance the Group views as particularly important. The United Nations expected to launch its post-2015 development agenda and adopt new Sustainable Development Goals (SDGs) this year, so next year I also hope to see a conceptual presentation of how the Group sees the role of its business activities in supporting the agenda and the SDGs.

This third-party opinion reflects my view of the sustainability initiatives and information disclosure of the DIC Group, as understood from reading this report, from my perspective as an individual who provides corporate information to financial institutions to assist socially responsible investing (SRI). It is not intended as a comment on whether or not the information herein has been measured and calculated accurately to conform to commonly accepted standards for the preparation of environmental or other reports or a judgment on whether the report covers relevant important matters in full.

DIC Group Milestones

107 Years of Achievement

1908
Established as Kawamura Ink Manufactory

Established by Kijuro Kawamura as Kawamura Ink Manufactory; adopts the dragon as its product trademark and begins manufacturing inks.

DIC's founder, Kijuro Kawamura

Dragon product trademark

1915
Commences production of offset printing inks

Becomes one of the first companies to conduct research in the area of offset printing inks and succeeds in producing a viable product in only one year.

1925
Begins production of organic pigments

Develops production method for organic pigments and begins production for its own use, the first step in its evolution as a fine chemicals manufacturer.

1940
Commences production of water-based gravure inks

Amid wartime restrictions on use of volatile oils, develops water-based gravure inks—one of several achievements that would later facilitate expansion into synthetic resins.

1952
Makes full-scale entry into the synthetic resins business

Establishes Japan Reichhold Chemicals Inc., then the second-largest joint venture with an overseas firm in the history of the Japanese chemicals industry, and makes a full-scale entry into the synthetic resins business.

Reichhold Chemicals' San Francisco plant

1957
Enters the market for helmets and other molded plastic products

Enters the plastic products business with the aim of becoming an integrated manufacturer with operations encompassing production of everything from plastic raw materials to finished products.

1962
Changes Company name to Dainippon Ink and Chemicals

Embarks on a new chapter in its history by absorbing Japan Reichhold Chemicals, Inc., and changes Company name to Dainippon Ink and Chemicals Incorporated (DIC).

DIC's previous corporate symbol

1968
Commences sales of the *DIC Color Guide®*

Launches the *DIC Color Guide®*, which becomes the de facto standard for color selection in numerous industries, bolstering recognition of the DIC name.

DIC Color Guide®

Promotes expansion of printing inks business » **Diversifies operations by building on base in printing inks, organic pigments and synthetic resins** » **Actively introduces technologies from overseas and promotes further diversification**

Sustainability Initiatives

1973
Establishes the Environment and Safety Response Department

Creates department under the direct supervision of DIC's president to oversee safety and environmental initiatives (today's Responsible Care Department); creates Environment and Safety Management Regulations and Interim Emergency Countermeasures Department and begins promoting decisive efforts, including the implementation of plant safety inspections.

1990
Opens Kawamura Memorial Museum of Art

Located in Sakura,Chiba Prefecture, adjacent to the Central Research Laboratories; established to exhibit works of art collected by DIC and DIC Group companies; now called the Kawamura Memorial DIC Museum of Art.

Kawamura Memorial DIC Museum of Art

1995
Declares intention to uphold the principles of Responsible Care

Takes an active role in the Responsible Care movement since the start as one of 74 founding members of the Japan Responsible Care Council (JRCC); reinforces efforts to, among others, reduce negative environmental impact of operations and reduce energy consumption.

Responsible Care®

1970
Enters the multilayered films business
Establishes Crown Zellerbach Packaging Materials Japan Co., Ltd., in a joint venture with Crown Zellerbach Corporation of the United States and Nippon Kakoh Seishi Co., Ltd., and enters the multilayered films business.

1973
Enters the market for LCs
Develops revolutionary high-performance, long-lasting nematic LCs, commencing its evolution into one of the world's foremost manufacturers of LCs.


Nematic LCs

1986
Acquires the graphic arts materials division of Sun Chemical Corporation of the United States
Becomes world's largest manufacturer of printing inks in terms of market share and leading name in graphic arts materials business.

Sun Chemical's headquarters

1999
Succeeds in developing 100% soybean oil-based printing ink
Amid rising awareness of environmental issues, develops Japan's first organic solvent-free sheetfed offset ink.


New Champion Naturalith 100
organic solvent-free sheetfed offset ink

1999
Acquires Coates, the printing inks division of France's TOTALFINA
Establishes presence in India, Central and South America and elsewhere by acquiring the Coates Group from TOTALFINA S.A., France's largest oil company.

2008
Changes Company name to DIC Corporation
Marks centennial anniversary by changing Company name to DIC Corporation and adopting a new corporate symbol.

DIC's new corporate symbol

2009
Establishes DIC Graphics Corporation
In October 2009, establishes a joint venture with Dai Nippon Printing Co., Ltd. subsidiary The Inctec Inc. and integrates its domestic printing inks business with the printing inks business of The Inctec.

2013
Launches DIC105 medium-term management plan
Embarks on a new plan—the slogan of which is "Step Beyond"—that is positioned as the first three-year phase of a longer-term initiative that sets clear, concrete objectives for fiscal year 2018.

2015
Completes reconstruction of corporate headquarters in Nihonbashi
In May 2015, completes the reconstruction of its corporate headquarters—the DIC Building—in Nihonbashi, Tokyo, the role of which was expanded to include oversight of the global DIC Group.


DIC Building

Seeks to advance globalization of core businesses and diversify into new areas » **Takes steps to advance environmental protection and expands global presence** » **Prepares for a new phase of growth**

2006
Becomes signatory to the Responsible Care Global Charter
Signs Declaration of Support for the Responsible Care Global Charter, established by the International Council of Chemical Associations, as befits its status as a member of the global community of fine chemicals manufacturers.

Certification of DIC as Signatory to the Responsible Care Global Charter

2007
Launches CSR program
Begins promoting CSR initiatives; identifies fulfilling its responsibilities as a member of society through its business activities and contributing to the evolution of society as the cornerstones of CSR.

2010
Joins United Nations Global Compact
In December 2010, becomes a participant in the United Nations Global Compact, with the aim of maintaining its reputation as a socially responsible corporate entity.

THE GLOBAL COMPACT
Network Japan
WE SUPPORT

2014
Changes designation to "sustainability"
Clarifies its overall policy of achieving sustainability in a manner that takes into account, among others, the environment, ecosystems and socioeconomic issues, and changes the designation used across its program from "CSR" to "sustainability."

In-house poster promoting sustainability initiatives

Corporate Data

Corporate Data

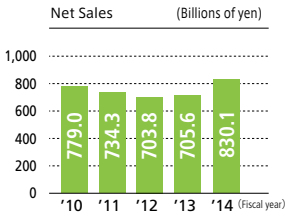
Registered name:	DIC Corporation
Registered address:	35-58, Sakashita 3-chome, Itabashi-ku, Tokyo 174-8520, Japan
Corporate headquarters:	DIC Building, 7-20, Nihonbashi 3-chome, Chuo-ku, Tokyo 103-8233, Japan Tel: +81-3-6733-3000
Date of foundation:	February 15, 1908
Date of incorporation:	March 15, 1937
Paid-in capital:	¥96.6 billion
Number of employees:	20,411 (Nonconsolidated: 3,542)
Domestic facilities:	Two branch offices and nine plants
Number of subsidiaries and affiliates:	176 (Domestic: 32, Overseas: 144)

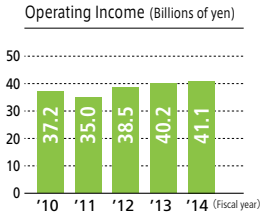
(Information is as of December 31, 2014.)

Consolidated Financial Highlights

	Fiscal year 2013 (Year ended December 31, 2013)	Fiscal year 2014 (Year ended December 31, 2014)
Net sales	¥705,647	¥830,078
Operating income	40,181	41,076
Ordinary income	37,123	39,925
Net income	26,771	25,194
Earnings per share (yen)	29.23	26.78
Total assets	761,690	803,703

Millions of yen, except for per share information





Note: The consolidated results for fiscal year 2013 comprise the accounts for the nine months ended December 31, 2013, of DIC and its domestic subsidiaries but one and the 12 months ended December 31, 2013, of its overseas subsidiaries and one domestic subsidiary.

(Information is as of May 31, 2015.)

Board of Directors

Representative Director	Yoshiyuki Nakanishi
Representative Director	Masayuki Saito
Director	Yoshihisa Kawamura
Director	Hitoshi Wakabayashi
Director	Tetsuro Agawa
Director	Takao Suzuki*
Director	Yukako Uchinaga*

* Outside

Corporate Auditors

Corporate Auditor	Jiro Mizutani
Corporate Auditor	Yoshiyuki Mase
Corporate Auditor	Katsunori Takechi*
Corporate Auditor	Cindy Yoshiko Shirata*

* Outside

Executive Officers

President and CEO	Yoshiyuki Nakanishi
Senior Managing Executive Officer	Masayuki Saito
Managing Executive Officer	Yoshiyuki Masuda
Managing Executive Officer	Kazuo Kudo
Managing Executive Officer	Toshio Hasumi
Managing Executive Officer	Tetsuo Agawa
Managing Executive Officer	Hitoshi Wakabayashi
Managing Executive Officer	Kazunari Sakai
Executive Officer	Hideo Ishii
Executive Officer	Naoyoshi Furuta
Executive Officer	Masao Hotozuka
Executive Officer	Masami Hatao
Executive Officer	Hiroshi Fujita
Executive Officer	Rudi Lenz
Executive Officer	Toshio Kanbe
Executive Officer	Hideki Inouchi
Executive Officer	Kaoru Ino
Executive Officer	Toshifumi Tamaki
Executive Officer	Masaya Nakafuji
Executive Officer	Koji Tanigami
Executive Officer	Shinsuke Toshima
Executive Officer	Sakae Yoshida

(Information is as of March 26, 2015.)

Headquarters/Branches in Japan

Corporate Headquarters

Headquarters
DIC Building, 7-20, Nihonbashi 3-chome, Chuo-ku, Tokyo 103-8233, Japan
Tel: +81-3-6733-3000

Branch Offices

Osaka
5-19, Kyutaro-machi 3-chome, Chuo-ku, Osaka 541-8525, Japan
Tel: +81-6-6252-6161 Fax: +81-6-6245-5239

Nagoya
7-15, Nishiki 3-chome, Naka-ku, Nagoya 460-0003, Japan
Tel: +81-52-951-9381 Fax: +81-52-962-3591

Plants

Tokyo
35-58, Sakashita 3-chome, Itabashi-ku, Tokyo 174-8520, Japan
Tel: +81-3-3966-2111 Fax: +81-3-3965-4320

Chiba
12, Yawatakaigandori, Ichihara, Chiba 290-8585, Japan
Tel: +81-436-41-4141 Fax: +81-436-43-1059

Hokuriku
64-2, Minatomachi-So, Hakusan, Ishikawa 929-0296, Japan
Tel: +81-76-278-2332 Fax: +81-76-278-5354

Sakai
3, Takasago 1-chome, Takaishi, Osaka 592-0001, Japan
Tel: +81-72-268-3111 Fax: +81-72-268-1705

Kashima
18, Higashifukashiba, Kamisu, Ibaraki 314-0193, Japan
Tel: +81-299-93-8111 Fax: +81-299-92-6384

Yokkaichi
5, Kasumi 1-chome, Yokkaichi, Mie 510-0011, Japan
Tel: +81-59-364-1151 Fax: +81-59-364-1620

Komaki
151-1, Nagare, Shimosue, Komaki, Aichi 485-0825, Japan
Tel: +81-568-75-2751 Fax: +81-568-73-4120

Saitama
4472-1, Komuro, Ina-machi, Kita-Adachi-gun, Saitama 362-8577, Japan
Tel: +81-48-722-8211 Fax: +81-48-722-6087

Tatebayashi
6023, Tobukogyodanchi, Ohshima-cho, Tatebayashi, Gunma 374-0001, Japan
Tel: +81-276-77-2461 Fax: +81-276-77-2468

Laboratories

Central Research Laboratories
631, Sakado, Sakura, Chiba 285-8668, Japan
Tel: +81-43-498-2121 Fax: +81-43-498-2229

Art Museum

Kawamura Memorial DIC Museum of Art
631, Sakado, Sakura, Chiba 285-8505, Japan
Tel: +81-43-498-2672 Fax: +81-43-498-2139

(Information is as of May 31, 2015.)

Principal Domestic Subsidiaries and Affiliates

Cast Film Japan Co., Ltd.
DC Katsuya Co., Ltd.
DIC Bayer Polymer Ltd.
DIC Color Coatings, Inc.
DIC Color Design, Inc.
DIC Decor, Inc.
DIC EP Corp.
DIC Estate Co., Ltd.
DIC Graphics Corporation
DIC Interior Co., Ltd.
DIC Investments Japan, LLC.
DIC Kako, Inc.
DIC Kitanihon Polymer Co., Ltd.
DIC Kyushu Polymer Co., Ltd.
DIC Lifetec Co, Ltd.
DIC Machinery & Printer's Supplies, Inc.
DIC Material Inc.
DIC Molding, Inc.
DIC Plastics, Inc.
Hamamatsu DIC Co., Ltd.
Japan Formalin Company, Inc.
KJ Chemicals Corporation
Mizushima Kasozai Co., Ltd.
Nippon Epoxy Resin Manufacturing Co., Ltd.
Oxirane Chemical Corp.
Renaissance, Inc.
Seiko PMC Corporation
SUNDIC Inc.
Techno Science, Inc.
Topic Co., Ltd.
YD Plastics Co., Ltd.

(Information is as of May 31, 2015.)

Principal Overseas Subsidiaries and Affiliates

Aekyung Chemical Co., Ltd.
Changzhou Huari New Material Co., Ltd.
DIC Alkylphenol Singapore Pte., Ltd.
DIC Asia Pacific Pte Ltd
DIC Australia Pty Ltd.
DIC (China) Co., Ltd.
DIC Colorants Taiwan Co., Ltd.
DIC Compounds (Malaysia) Sdn. Bhd.
DIC Epoxy (Malaysia) Sdn. Bhd.
DIC Europe GmbH
DIC Fine Chemicals Private Limited
DIC Graphics Chia Lung Corp.
DIC Graphics (Guangzhou) Ltd.
DIC Graphics (Hong Kong) Ltd.
DIC Graphics (Thailand) Co., Ltd.
DIC (Guangzhou) Co., Ltd.
DIC Imaging Products USA, LLC.
DIC India Ltd.
DIC International (USA), LLC.
DIC Korea Corp.
DIC Korea Liquid Crystal Co., Ltd.
DIC Lanka (Private) Ltd.
DIC (Malaysia) Sdn. Bhd.
DIC New Zealand Ltd.
DIC Pakistan Ltd.
DIC Performance Resins GmbH
DIC Philippines, Inc.
DIC (Shanghai) Co., Ltd.
DIC Synthetic Resins (Zhongshan) Co., Ltd.
DIC (Taiwan) Ltd.
DIC Trading (HK) Ltd.
DIC (Vietnam) Co., Ltd.
DIC Zhangjiagang Chemicals Co., Ltd.
Earthrise Nutritionals, LLC.
Hainan DIC Microalgae Co., Ltd.
Kangnam Chemical Co., Ltd.
Lianyungang DIC Color Co., Ltd.
Lidye Chemical Co., Ltd.
Nantong DIC Color Co., Ltd.
PT DIC ASTRA Chemicals
PT. DIC Graphics
P.T. Pardic Jaya Chemicals
Qingdao DIC Finechemicals Co., Ltd.
Qingdao DIC Liquid Crystal Co., Ltd.
Samling Housing Products Sdn. Bhd.
Shanghai DIC Ink Co., Ltd.
Shanghai DIC Pressure-Sensitive Adhesive Materials Co., Ltd.
Shanghai Showa Highpolymer Co., Ltd.
Shenzhen-DIC Co., Ltd.
Siam Chemical Industry Co., Ltd.
Suzhou Lintong Chemical Science Corp.
TOA-DIC Zhangjiagang Chemical Co., Ltd.
Zhongshan DIC Colour Co., Ltd.

● Sun Chemical Group
Sun Chemical Corporation
Benda-Lutz Corporation
Benda-Lutz Skawina Sp. z.o.o.
Benda-Lutz Volzhsky ooo
Benda-Lutz Werke GmbH
Coates Brothers (Caribbean) Ltd.
Coates Brothers (East Africa) Ltd.
Coates Brothers (West Africa) Ltd.
Coates Screen Inks GmbH
Hartmann D.O.O.
Hartmann Druckfarben GmbH
Hartmann-Sun Chemical EOOD
Inmobiliaria Sunchem, S.A. de C.V.
Lorilleux Maroc S.A.
Parker Williams Design Ltd.
Sinclair International Inc.
Sinclair S.A.S.
Sinclair Sun Chemical Ecuador S.A.
Sun Branding Solutions Ltd.
Sun Chemical AB
Sun Chemical AG (Austria)
Sun Chemical AG (Switzerland)
Sun Chemical Albania SHPK
Sun Chemical A/S (Denmark)
Sun Chemical A/S (Norway)
Sun Chemical B.V.
Sun Chemical (Chile) S.A.
Sun Chemical de Centro America, S.A. de C.V.
Sun Chemical Delta B.V.
Sun Chemical de Panama, S.A.
Sun Chemical do Brasil Ltda.
Sun Chemical Group Coöperatief U.A.
Sun Chemical Group S.p.A.
Sun Chemical (Hai'an) Limited
Sun Chemical Holding (Hong Kong) Ltd.
Sun Chemical Inks A/S
Sun Chemical Inks Ltd.
Sun Chemical Inks S.A.
Sun Chemical Lasfelde GmbH
Sun Chemical Ltd. (Canada)
Sun Chemical Ltd. (U.K.)
Sun Chemical Matbaa Mürekkepleri ve Gereçleri Sanayii ve Ticaret A.Ş.
Sun Chemical N.V./S.A.
Sun Chemical Nyomdafestek Kereskedelmi es Gyarto KFT
Sun Chemical Osterode Druckfarben GmbH
Sun Chemical Oy
Sun Chemical Peru S.A.
Sun Chemical Pigments S.L.
Sun Chemical Portugal-Tintas Graficas Unipessoal Ltda.
Sun Chemical Printing Ink d.o.o.
Sun Chemical S.A.
Sun Chemical S.A. de C.V.
Sun Chemical S.A.S.
Sun Chemical (South Africa) (Pty) Ltd.
Sun Chemical Sp. z.o.o.
Sun Chemical s.r.l.
Sun Chemical, s.r.o. (Czech Republic)
Sun Chemical, s.r.o. (Slovakia)
Sun Chemical Trading (Shanghai) Co., Ltd.
Sun Chemical Ukraine Ltd.
Sun Chemical Venezuela C.A.
Sun Chemical ZAO
Tintas S.A.S.

(Information is as of May 31, 2015.)

(Contact)

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