

DIC REPORT 2017 The DIC Group Integrated Report

Color & Comfort

DIC Corporation

English Version

The DIC WAY

Mission

Through constant innovation, the DIC Group strives to create enhanced value and to contribute to sustainable development for its customers and society.

Vision

Color & Comfort by Chemistry

Spirit

Drive, Integrity, Dedication, Collaboration, Harmony



Making it Colorful DIC helps make life colorful





Mission

Vision

Spirit

Specialty Solutions

DIC draws on its expertise and comprehensive strengths to offer solutions

Innovation through Compounding

DIC brings innovation to society through its core compounding technologies

Color & Comfort

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



(PDF-form publication)

Summary integrated report (published annually) (printed publication)

DIC Global Website

Real-time information

WEB http://www.dic-global.com/en/ Umbrella website providing information to the global public about the DIC Group and reports on its various activities; updated as necessary



(published annually)

(PDF-form publication)

About this Report

In previous years, the DIC Group has published 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. Beginning in 2017, the Group has transformed the DIC Report into an integrated report, which combines financial information, encompassing consolidated operating results and corporate strategies, and nonfinancial (sustainability) information. The Group has published a simplified summary version of the report (printed), which focuses on key highlights, and a more detailed complete version (PDF), which contains extensive quantitative data.

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

WEB 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.

Link with the DIC Website

The (web) mark indicates that more detailed information and/or data can be found on the indicated page of the DIC global website. DIC global website WEB http://www.dic-global.com/en/

Scope of Reporting

In principle, this report provides information on DIC Corporation and consolidated DIC Group companies worldwide. For information on the scope of reporting for ESH-related initiatives, please visit the pertinent page of the DIC website WEB http://www.dic-global.com/en/csr/pdf/dic_report_scope_en_2017.pdf

Reporting Period

Fiscal year 2016 (January 1-December 31, 2016)

Date of Publication

June 2017 (The next report is scheduled for publication in June 2018.)

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; Japan's Responsible Care Code; and the Global Reporting Initiative (GRI)'s G4 Sustainability Reporting Guidelines.

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Cover Design

The cover of this year's DIC Report derives its inspiration from the DIC Group's "Color & Comfort" brand slogan, employing bright colors that evoke the efforts of the Group, a global powerhouse, to enrich and add vibrancy to society and the lives of people everywhere

The DIC Group: A Global Powerhouse



DIC Report 2017





Sun Chemical Corporation headquarters (United States)



Breakdown of Fiscal 2016 Net Sales by Region



Breakdown of Fiscal 2016 Operating Income by Region



Note: Operating income as used here includes eliminations (approximately ¥5.1 billion). Accordingly, these percentages do not represent shares of reported operating income.





A Message from the President

Representative Director, President and CEO DIC Corporation Yoshiyuki Nakanishi



Targeting growth over the long term by providing products that accurately address social imperatives

Building Robust Corporate Health and Growth Drivers

The DIC Group is a leading multinational chemicals organization comprising 174 companies in 63 countries and territories. Printing inks account for approximately 30% of consolidated sales, while organic pigments, the principal raw material used in printing inks, account for around 20%. We are the world's leading manufacturer of polyphenylene sulfide (PPS) compounds—key engineering plastics—with a global market share of approximately 27%. We also supply a wide range of distinctive fine chemicals products, including polymers and liquid crystals (LCs) that contribute to the development of society and our customers. Having formulated a growth scenario that includes concrete long-term targets for consolidated net sales and operating income of ¥1,000 billion and ¥100 billion, respectively, in fiscal year 2025, we are currently implementing a variety of measures aimed at powering further growth.

In printing inks and synthetic resins, both businesses with stable earnings bases, we are emphasizing a shift to a way of conducting business that will facilitate sustainable growth. To this end, we are taking steps to optimize production configurations and reduce costs in mature markets, notably North America, Europe and Japan, on the assumption that appropriate demand will decline. At the same time, we are emphasizing a shift to sustainable products such as waterborne and ultraviolet (UV)curable resins and accelerating the expansion of our operations in promising markets, particularly in Asia, with the goal of reinforcing our already substantial global market presence.

We are concentrating our allocation of management resources on a global basis in businesses that we expect to drive growth, notably thin-film transistor (TFT) LCs, functional pigments, PPS compounds and packaging materials. With demand for packaging materials rising, we built production facilities for liquid inks for food and beverage packaging in Indonesia and Turkey. We also built a PPS compounds production facility in the People's Republic of China (PRC), the automobile industry's principal production base. All three of these facilities commenced operations in fiscal year 2016. In the inkjet inks business, we are promoting the development of new products that will facilitate our entry into promising new areas.

In addition, we are expediting efforts to create next-generation businesses that respond to evolving requirements in areas such as electronics materials, packaging and healthcare. In light of increasing social imperatives pertaining to environmental issues, artificial intelligence (AI) and the Internet of Things (IoT), among others, we are leveraging our proprietary technologies and ingenuity to provide high-value-added products to customers around the world.

Through these and other efforts, we are working to ascertain the needs of individual businesses to build a balanced, diversified business portfolio, thereby ensuring a robust earnings structure. By remaining abreast of social imperatives and realizing distinctive growth drivers that stimulate demand, we are confident that this will enable us to achieve our targets for fiscal year 2025.

Record-High Operating Income and Ordinary Income in Year One of DIC108

In fiscal year 2016, the first year of our current medium-term management plan, DIC108, we reported consolidated net sales of ¥751.4 billion. Operating income amounted to ¥54.2 billion, while ordinary income reached ¥55.8 billion, both record highs. Net income attributable to owners of the parent was ¥34.8 billion. Return on equity (ROE) was 12.9%. Dividends*1 were ¥100.00 per share, an increase of ¥20.00, while the payout ratio was 27.3%.

*1 Adjusted to reflect the impact of a consolidation of shares implemented on July 1, 2016. *2 Debt-to-capital ratio (D/C) ratio: Interest-bearing debt / (Interest-bearing debt + Net assets) *3 Solder resist is an insulating materials used to protect circuit patterns on PWBs.

Expanding Efforts and Picking Up the Pace

Fiscal year 2017, the second year of DIC108, is an important year for us strategically. When we kicked off DIC108, we described it as an extension of its predecessor, DIC105, under which we made progress toward improving our financial health-evidenced by a debt-to-capital ratio*2 of 47%, exceeding our target of 50%-and declared our intention to shift gears, that is, to adopt an active stance toward driving growth. To this end, we budgeted ¥150.0 billion over three years to strategic investments, including in mergers and acquisitions (M&As).

In January 2017, we announced that we had entered into a capital and business alliance with Taiyo Holdings Co., Ltd., which is engaged in the manufacture and sale of specialty inks, investing ¥24.9 billion. Taiyo Holdings is one of the world's leading manufacturers of solder resist^{*3} for printed wiring boards (PWBs). We supply the company with materials used in these products, including polymers and pigments. In addition to expanding sales of existing products, we look forward to capitalizing on synergies yielded by the alliance to promote the efficient development of next-generation products, including materials for PWBs. Looking ahead, we will continue to actively pursue M&As that will further propel growth and will move appropriately and swiftly on a number of potential deals currently being explored.

In the area of R&D, we are breaking free of focus on exclusively independent efforts, making use of venture capital and other external resources through open innovation to accelerate the creation of new businesses. In January 2017, we commenced construction of a new technical building at the Central Research Laboratories in Japan with the goal of ensuring the effectiveness of efforts to grow technologies in such cutting-edge fields as printed electronics.

The "Color & Comfort" **Brand Slogan**

Healthcare is a crucial area in which we are working to create next-generation businesses under DIC108 by capitalizing on our foresight and tireless R&D efforts. Since commercializing viable technologies for mass managed cultivation of the edible algae Spirulina in 1977, we have launched a variety of Spirulinaderived health food products and supplements. In recent years, we launched *Linablue*[®], a natural blue food coloring. In 2013, Linablue[®] became the first natural blue food coloring to be

Quantitative Targets

Our operating income target for year one of DIC108 was ¥54.0 billion, a record high. Our target for year three is ¥65.0 billion.

	2015	2016	2016	16 2017 2017		
	Actual	Target	Actual	Target	Forecast*2	Target
Net sales	¥820.0	¥870.0	¥751.4	¥920.0	¥790.0	¥960.0
Operating income	51.1	54.0	54.2	58.0	58.0	65.0
Net income*1	37.4	25.0	34.8	30.0	37.5	40.0
ROE	15.0%	9.0%	12.9%	10.0%	13.1%	12.0%
Ordinary investments	34.0			¥120.0		
Strategic investments (M&As, etc.)	_			¥150.0		
D/C ratio	47%			Around 50%		
Dividend payout ratio	21%		Around 30%			

*1 Net income attributable to owners of the parent *2 "2017 Forecast" figures are official forecasts published in May 2017.



approved by the U.S. Food and Drug Administration (FDA). Underscored by a rapid shift in consumer preference from artificial to natural food colorings, particularly in North America and Europe, *Linablue*[®] continues to attract attention from the perspectives of food safety and security.

Linablue[®] and our printing inks and pigments businesses underscore our affinity for businesses involving "color." We have introduced a new brand slogan, "Color & Comfort," with the aim of boosting recognition of the DIC name and bolstering corporate value and, since fiscal year 2016, have implemented an ambitious branding program. In October 2016, we introduced a new television advertisement in Japan that communicates the message of the DIC brand. We are currently implementing a variety of important branding initiatives in the 63 countries and territories in which the DIC Group has operations to bolster awareness of the value that we provide to stakeholders and in doing so to help instill a greater sense of solidarity across the Group.

Pursuing Sustainable Management and Realizing Record-Breaking Operating Results

Recognizing that incorporating environmental, social and governance (ESG)-related considerations is essential to our ability to provide products and services that support communities and industries, we have established key performance indicators (KPIs) for critical initiatives. Looking ahead, we will continue working to support our business foundation and ensure sustainable growth by promoting efforts to, among others, help reduce the use of substances that harm the environment and ensure the effective management of chemical substances. We will also continue to develop and launch products with a lower environmental impact that contribute to the resolution of key social imperatives, including water-based inks, waterborne resins, LC materials that use less electric power and PPS compounds for use as an alternative to metal materials in automobiles.

As a chemicals company, we understand that safety is our highest priority. Accordingly, we continue to focus efforts on the creation of frameworks to mitigate the impact of disasters and prevent the occurrence of occupational accidents and provide safety training. To reinforce safety in the workplace, we offer hands-on safety training, which seeks to foster awareness of latent risks, as a component of training for new employees, both in Japan and overseas.

We also understand that creating work environments that empower diverse employees to exercise their individuality and reach their full potential is essential to growth for employees and for the DIC Group as a whole. As part of our efforts to promote diversity across the Group, we employ a broad spectrum of individuals without regard to considerations such as gender, nationality, physical limitation or age. We also endeavor to foster a corporate culture that draws on our understanding and respect for diversity to produce creative ideas, as well as to incorporate the concept of diversity into management, thus creating workplaces that enhance job satisfaction.

DIC108 also positions the provision of returns to shareholders as an important priority. We will continue working to maintain a balance among financial health, investment in growth and shareholder returns and have set a target for dividend payout ratio of 30% over the three years of the plan. To this end, we will shift our emphasis to income performance–linked dividends based on a fundamental commitment to maintaining stable returns.

Looking ahead, we will continue to diligently implement the strategies outlined in DIC108 to expand and rationalize businesses that we expect to drive growth and promote rationalization, as we work to achieve our best performance yet in terms of operating income, ordinary income and net income attributable to owners of the parent. In these and all our efforts, we look forward to the ongoing support and guidance of our many stakeholders.

Growth Sce	nario and Posi	tioning of DI	C108						Growth attributable to strategic investments (M&As, etc.)
									Next-generation businesses
Ensure the su stable earning	ustainability of bu Igs bases	sinesses with	Create busin address soci • Electronic • Packaging	ness mode ial impera s	ls that tives	Achieve s growth b business	ustainable y revampin portfolio	g	Businesses that will drive growth
 Responses to environmental concerns Rationalization Strategic investments (M&As, etc.) 			• Healthcare • Low carbo	e nization					Businesses with stable earnings bases
2016	2017	2018	2019	2020	2021	2022	2023	2024	
	DIC108			DIC11	1		DIC114		\rangle



Steady Progress in Strategic Investments

In fiscal year 2016, DIC kicked off a new medium-term management plan, DIC108. Having made a certain degree of progress in recent years toward improving its financial health, a key management challenge, the Company once again adopted an active stance toward driving growth under the plan, budgeting ¥150.0 billion for strategic investments, including in M&As, between fiscal year 2016 and fiscal year 2018. Accordingly, the Company has been on the lookout for investment opportunities that align with its fundamental DIC108 goals, which are to stabilize the earnings of its core businesses, expand businesses that will drive growth and create next-generation businesses.

DIC enters capital and business alliance with Taiyo Holdings, transforming the latter into an equity-method subsidiary

On January 25, 2017, DIC announced a capital and business alliance with Tokyo-based Taiyo Holdings Co., Ltd., as a result of which Taiyo Holdings became an equity-method subsidiary. Total investment by DIC amounted to \pm 24.9 billion.

Taiyo Holdings is involved in the manufacture and sale of chemical products for use in PWBs and other electronics components and in semiconductors. Of note, the company commands a top-class share of the global market for solder resist, which is critical to the production of PWBs.

DIC sees the electronics market as particularly encouraging, primarily because it offers potential for stable growth into the future and a considerable scope for leveraging DIC's proprietary technologies. In addition to providing synthetic resins, pigments and LCs, among others, to electronics manufacturers, DIC is actively promoting the development of materials for printed electronics, thermal materials and other high-value-added offerings that capitalize on its core technologies.



MID (artist's rendering): MIDs do not require substrates or harnesses, and can thus be made smaller, lighter and thinner than conventional PWBs. The market for these components is expected to expand in the future.

In addition to bolstering sales, the agreement brings together DIC's materials development capabilities, which draw on core technologies cultivated over many years, and Taiyo Holdings' firm understanding of market needs—underpinned by its extensive supply chain encompassing everything from solder resist to PWBs—and marketing provess to promote the swift and efficient development of products for new PWBs, including molded interconnect devices (MIDs), and other next-generation materials. The two companies will continue working to maximize synergies with the aim of driving global business growth and expanding profits.

2 Sun Chemical and Alliance Holding Company form joint venture that is the largest printing inks manufacturer on the Arabian Peninsula

On March 17, 2017, Sun Chemical Corporation concluded an agreement with Alliance Holding Company Ltd to form a joint venture combining Sun Chemical's operations on the Arabian Peninsula with the operations of Alliance subsidiary Ink Products Company, Ltd., a leader in the region's printing inks market based in Riyadh, Saudi Arabia. Sun Chemical's stake in the new company is 51%.

Recent years have seen a tapering of demand for publishing inks, owing to the move toward digital media. Accordingly, the focus of the global printing inks market has shifted to packaging inks, which are expected to continue seeing growth in advanced economies. Packaging inks account for more than 70% of printing inks sold on the Arabian Peninsula, where the annual market for such inks is projected to continue growing at between 5% and 10% for the foreseeable future. Sun Chemical thus recognizes the region as important from a strategic perspective.



Sun Chemical's headquarters in the United States

The establishment of a joint venture brings together Ink Products'

marketing capabilities, which reflect its familiarity with the market, and Sun Chemical's products and technologies. Sun Chemical and Ink Products will move with speed to maximize resulting synergies to provide top-quality products and superior services, with the aim of driving further growth. Sun Chemical and Ink Products boast a combined regional market share of roughly 30%. By leveraging the two companies' strengths, the new joint venture will strive to lift this above 40% by fiscal year 2021.



Net Sales, Operating Income and Operating Margin

Net Income Attributable to Owners of the Parent and ROE



Net Assets, Interest-Bearing Debt and Debt-to-Capital Ratio*





Capital Expenditure



Returns to Shareholders* (Dividends per Share and Payout Ratio)



Cash Provided by Operating Activities and Free Cash Flow

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Global CO₂ Emissions and CO₂ Emissions per Unit of Production (DIC Group)

Environment-Friendly Products as a Percentage of Overall Product Portfolio (DIC Corporation and DIC Graphics Corporation)



Average Years of Employment (DIC Corporation)



Global Energy Consumption and Energy Consumption per Unit of Production (DIC Group)



Occupational Accident Frequency Rate (DIC Corporation)



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



Female Employees in Management Positions (DIC Corporation)

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Overview of Materiality Analysis

The DIC Group has abstracted and analyzed material issues, that is, issues with the potential to affect its performance, and has identified those of particular significance, and is taking steps to effectively and efficiently address these issues. Guided by its DIC108 medium-term management plan, and by its long-term growth scenario, the Group will continue working to ensure that these efforts are beneficial to the management of its businesses.

1. Materiality Analysis Process

Abstraction of Issues

DIC abstracted 91 issues of particular significance to the Group based on the Global Reporting Initiative (GRI)'s G4 Sustainability Reporting Guidelines; its own 11 sustainability themes; and issues delineated in DIC108 or The DIC WAY or added by Sustainability Committee members. The Group has divided these issues into three groupings: Environmental (E), social (S) and governance (including economic issues) (G), which it has combined into 22 general materiality issues.

2 Materiality Analysis

Sustainability Committee members, heads of business units that spearhead the implementation of initiatives related to sustainability themes, and senior management from DIC Group business units in the United States, Asia and elsewhere assessed abstracted issues from the twin perspectives of importance to DIC Group businesses and importance to stakeholders. Based on the results of this process, and having comprehensively reviewed issues identified by external assessment organizations, the Company determined materiality to the DIC Group.

(a) Material importance to DIC Group businesses

DIC assessed issues with the potential to have an impact on the DIC Group, giving consideration to both potential risks and business opportunities.

(b) Material importance to stakeholders

- (i) The DIC Group recognizes five key stakeholder groups (customers, suppliers, local communities and society, employees and investors). Assessments looked at level of interest on the part of stakeholders and potential impact.
- (ii) To reinforce the role of objective external criteria, materiality issues identified by the DIC Group were analyzed by key independent ESG investment assessment programs/organizations, namely, the Dow Jones Sustainability Indices (DJSI), FTSE, MCSI, the Sustainability Accounting Standards Board (SASB) of the United States and Sustainalytics.

2. The DIC Group's Materiality Matrix

DIC has organized the issues abstracted and assessed through the process outlined above into its own 22 general materiality issues. The materiality of each of these issues was scored and a materiality matrix created by plotting the scores using two scales representing importance to DIC Group businesses and importance to stakeholders. Information on the progress of the Group's materiality-related initiatives in fiscal year 2016 can be found at the end of each section of the Sustainability Report component of both the complete and summary (printed) version of DIC Report 2017.



Importance to DIC Group businesses

Ensuring Sustainable Growth The DIC Group's Business Portfolio

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 of materials and finished products. Today, the Group classifies its operations in five business segments—Printing Inks, Fine Chemicals, Polymers, Compounds and Application Materials—through which it provides products and solutions that respond to the needs of society and its customers and add color and comfort to life.



Printing Inks

A Stable Business Since the Start



President, Printing Inks Segment Hideo Ishii





Printing Inks Product Division

Offset inks; gravure inks; flexo inks; can coatings; news inks; packaging adhesives; printing supplies



Outstanding color reproduction and reduced energy consumption

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



Ensuring safety for food and the environment FINART series (Gravure inks for food packaging)

FINART gravure inks combine superb image quality and suitability for high-speed printing. They also respond to demand for the reduction of solvents in food packaging and for compliance with safety regulations in different markets, thereby contributing to food safety and the environment.

Segment Operating Results



For more information, please see Segment Results on page 54.

Business Strategies Under DIC108

Rationalize operations in mature markets and shift focus to packaging inks

Recent years have seen a tapering of demand for publishing inks, news inks and other inks for paper-based print media, particularly in mature markets such as Japan, North America and Europe, owing to the burgeoning popularity of digital media. Since its previous medium-term management plan, which ran from fiscal year 2013 through fiscal year 2015, the DIC Group has sought to strengthen the printing inks business by advancing three core strategies, which are to further rationalize operations in mature markets, to augment operations in promising emerging economies and to shift its business' focus to packaging inks, for which demand is rising worldwide. Under DIC108, the Group is taking decisive steps to reinforce its presence in emerging economies, keeping a close eye on demand trends. At the same time, the Group is working to optimize its regional production configurations and elevate sales of segment products, particularly environment-friendly inks, functional coatings and adhesives.

Expand operations by focusing on promising markets and products

The DIC Group is reinforcing its production capabilities, placing an emphasis on the Middle East, South America and key Asian markets such as the Philippines and Vietnam. In both emerging and developed economies, the Group is focusing its allocation of resources on environment-friendly products for food packaging applications, including packaging inks, functional coatings and adhesives. Through these efforts, together with those in related businesses such as films, the Group will continue striving to provide total packaging materials solutions that respond to the needs of both consumers and brand owners.

Progress of Major Initiatives in Fiscal Year 2016

DIC continued to invest in the integration and rationalization of its production facilities in mature markets, including Japan, North America, Europe and Oceania, and to accelerate the shift of its focus toward packaging inks. Efforts to augment operations in promising emerging economies included the start up of a new mother plant in Turkey and the completion of a new production facility in Indonesia. Efforts to reinforce packaging inks operations emphasized product development. During the period, the Company developed, launched and took active steps to elevate sales of, among others, a waterbased flexo ink that delivers a print quality comparable to that of gravure inks and accommodates increasingly stringent regulations governing volatile organic chemical (VOC) emissions in Asia, notably in the PRC and India, as well as a new solvent-free low-temperature curing adhesive and a water-based functional coating, among others. In the areas of solvent-based inks and adhesives, the Group also promoted sales of new high-solid products with a reduced environmental impact. The period also saw the adoption by manufacturers in Japan and overseas of a new gas-barrier adhesive that improves the ability of laminated packaging, thereby helping extend the shelf life of food products, earning high marks from both customers and brand owners.



Materials printed with water-based printing inks

New Production Facilities Completed in Promising Markets

HIGHLIGHT

In light of a tapering of demand for publishing inks, news inks and other inks for paper-based print media, owing to the rising popularity of digital media, the DIC Group is stepping up efforts to shift its focus to inks used on packaging for food products, demand for which is expected to expand substantially, particularly in emerging economies. To this end, the Group is pressing ahead with efforts to establish production facilities in key markets. A new state-of-the-art mother plant in Turkey began operations in June 2016, while a new facility in Indonesia that bolsters production capacity in that country commenced operations in July 2016.





Left: Mother plant in Izmir, Turkey Right: Production facility in Surabaya, Indonesia

Fine Chemicals

Optronics Materials and Other High-Value-Added Products



President, Fine Chemicals Segment Hitoshi Wakabayashi



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

Liquid Crystal Materials Product Division

TFT LCs; Supertwisted nematic (STN) LCs



Pigments Product Division

Organic pigments; special effect pigments; metal carboxylates; sulphur chemicals (lubricant additives)



A marked increase in brightness and reduced LCD energy consumption

G58 series (Green pigments for color filters)

In developing the G58 series of green pigments, DIC defied conventional wisdom by using zinc, rather than copper, as the central metal, which achieves a marked increase in brightness and reduces energy consumed by the liquid crystal display (LCD).



Responding to the evolution of LCDs TFT LCs

The production of TFT LCs demands advanced technological expertise. DIC is one of only a few companies in the world with such expertise. DIC's technologies ensure it is able to provide products that respond to demands for faster response

times and greater long-term reliability.

For more information, please see Segment Results on page 54.

Segment Operating Results



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> Business Strategies Under DIC108

The DIC Group is powering growth in this segment by increasing value added. To this end, the Group is capitalizing on its continuous product development and solid supply configuration to bolster its share of the markets for the segment's two key strategic products: functional pigments and TFT LCs.

Pigments

With the market for organic pigments for publishing inks—the principal source of demand for these products—shrinking, the DIC Group is working to increase sales of functional pigments for niche and high-growth applications, including pigments for color filters, pigments for cosmetics and special effect pigments. In the area of pigments for color filters, the Group will broaden its lineup of products that help improve color and functions. The Group is also striving to augment its recently acquired special effect pigments business in Europe by bolstering sales of high-value-added products and reinforcing its production capacity for pigments used in building materials. To expand its pigments for cosmetics business, the Group has broadened its focus to include pigments for skincare products and is taking steps to increase its production and sales of red pigments, demand for which continues to rise, as well as to boost sales in Japan.

LC materials

With an emphasis on n-type TFT LCs, the principal type of LCs used in largescale displays in LCD televisions and other devices and is actively bringing new products to market, the DIC Group is actively allocating resources to the development of new products. The Group is also maximizing its technical and production base in Qingdao to augment its operations in the PRC, which is expected to be a major center of LCD manufacturing going forward.



TFT LCs used in LCD televisions

Progress of Major Initiatives in Fiscal Year 2016

Pigments

Shipments of functional pigments rose steadily, underpinned by generally firm demand. Of particular note, sales of pigments for cosmetics increased substantially, reflecting firm sales of products using processing technologies obtained through the acquisition of a manufacturer in fiscal year 2015 and the fact that red—a traditional DIC Group strength—was in fashion for cosmetics during the period. In the area of special effect pigments, the Group pressed ahead with efforts to expand the capacity of its pigment production facilities in Poland and Russia in response to growing demand.

LC materials

Ongoing development efforts in the area of LCs that reduce the energy consumption of large LCDs yielded new products that helped enhance sales. In the second half of fiscal year 2016, a new product that boosts LCD response speed was adopted for use by an LCD manufacturer in

the PRC as the Group stepped up R&D and sales initiatives with the goal of strengthening sales in fiscal year 2017.



Sales of pigments for cosmetics continue to rise, led by red pigments

DIC Group Bolsters Production Capacity for Aluminum Powders and Pastes for AAC

HIGHLIGHT

The excellent fire resistance, thermal and acoustic insulating properties, and workability of autoclaved aerated concrete (AAC) make it suitable for a broad range of construction applications, including houses, high-rise buildings, electric power plants, retaining walls for transportation infrastructure, roofing and floor panels. Global demand for AAC, which is recyclable and emits no VOCs, continues to increase by between 7% and 8%, a trend that is expected to persist for the foreseeable future. The DIC Group manufactures aluminum powders and pastes used as foaming agents. With demand for both products expanding, the Group is bolstering the capacity of its two production facilities, which are located in Poland and Russia.



Production facility for aluminum powders and pastes in Poland currently undergoing expansion

Polymers

DIC's Second Core Business



President, Polymers Segment Toshio Hasumi





Polymers Product Division

Waterborne resins; UV-curable resins; acrylic resins; methacrylate resins; epoxy resins; phenolic resins; fluorochemicals; polyurethane resins; polyester resins; plasticizers; unsaturated polyester resins; polystyrene; alkylphenols



Environment-friendly nextgeneration adhesives that respond to diverse needs

TYFORCE series (Moisture-curing hot melt adhesives) This series of solvent-free adhesives delivers superb production efficiency and bonding strength. These resins have been adopted for a wide range of applications, including building materials, apparel and electronic comonents.



Technologies that facilitate the control of light for applications ranging from display cases to optical fibers DEFENSA OPseries

(Low-refractive index UV-curable resins) Used for optical fiber cladding and optical coatings, the *DEFENSA OP* series of lowrefractive index UV-curable resins helps improve the performance of optical fibers and the brightness of display cases.

Segment Operating Results



Business Strategies Under DIC108

Product strategy

The DIC Group is concentrating management resources on strategic products, namely, waterborne, UV-curable, acrylic, polyurethane and polyester resins, and accelerating global development with a focus on promising markets, notably those for coatings and adhesives in Asia.

Regional strategy

Capitalizing on technical centers established in Thailand and the PRC, the Group is responding to increasingly stringent environmental regulations by offering waterborne, solventfree and other environment-friendly products, as well as by advancing the development and sale of offerings that respond to needs for general-purpose products and boosting overseas sales as a percentage of overall segment sales. With demand on the decline in Japan, the Group is integrating and closing production lines while at the same time pursuing markets for polyurethane and UV-curable resins for niche and high-performance applications, thereby lifting the weighting of high-value-added products in its portfolio.



Demand for environment-friendly products for use in coatings is increasing overseas

Progress of Major Initiatives in Fiscal Year 2016

Development of high-performance products

In the area of products for electronics applications, a key strength, the DIC Group advanced the development of a variety of new products. These include fluorosurfactants for use as resists and other types of leveling agents, a specialty curing agent for epoxy resins that can be used in servers employed in sophisticated telecommunications infrastructures, a nanoimprint lithography (NIL)-compatible resist resin and a phenolic resin binder for sand casting 3D printers.

Regional trends

In Japan, the Group pressed forward with the consolidation of production lines for commoditized products and the introduction of equipment for the production of high-value-added offerings. Elsewhere in Asia, efforts centered on bolstering sales of environment-friendly products, as well as on implementing marketing initiatives with a view to an assertive entry into the promising Indian market.



Sample of a 3D printer–generated sand-cast mold made with DIC's phenolic resin binder

Polymer Technical Centers Support Efforts to Expand Operations in Key Growth Markets

HIGHLIGHT

DIC has established polymer technical centers in the PRC and Thailand with the aim of locking in demand for polymers in Asia, which is expected to increase in the future, by hastening the development of products that meet the needs of local customers. In addition to raising the efficiency of development, these facilities promote collaboration with local Group companies in the printing inks and other businesses, as well as provide training for local technical staff, thereby supporting the implementation of global polymer business strategies.



Compounds

New Value Created through Dispersion and Compounding Technologies



President, Compounds Segment Masanobu Mizukoshi

This segment leverages resin and pigment dispersion and compounding technologies accumulated since DIC's founding to provide products that respond to needs in the expanding global digital printing, automotive and electronics markets.



Liquid Compounds Product Division

Inkjet inks; fiber and textile colorants and artificial leather colorants; high-performance coatings and adhesive materials; coatings for optical films



Helping customers realize outstanding color development and gloss SunJetinkjet inks

Advanced DIC Group pigment dispersion technologies ensure excellent color development and a glossy finish. With a reputation for reliability, *SunJet* inkjet inks enjoy popularity in markets around the world.



Solid Compounds Product Division

PPS compounds; high-performance compounds; plastic colorants; high-performance optical materials

> Contributing to the realization of lighter, more fuel-efficient vehicles DIC.PPS series (PPS compounds)

The DIC Group's PPS compounds boast excellent heat and chemical resistance, rigidity, strength and electrical insulating properties, as a result of which they have found application in components for hybrid, electric and other environment-friendly vehicles as an alternative to metal materials, which helps reduce vehicle weight.

Segment Operating Results



> Business Strategies Under DIC108

The DIC Group is leveraging its growth-driving basic and composite technologies to continuously bring new products that satisfy the needs of users to market in the strategically important areas of inkjet inks and PPS compounds. Through such efforts, the Group is striving to realize a higher growth rate than the market.

Inkjet inks

To date, the DIC Group has sought to augment this business by focusing on high-value-added water-based and UV-curable inkjet inks, primarily for industrial and office-related applications. In addition to boosting sales in these markets, the Group is expanding efforts to market products for new applications such as textiles and ceramics, demand for which is expected to rise.

PPS compounds

Valued for their excellent heat and chemical resistance, PPS compounds are used widely as an alternative to metal materials in components for automotive engines and electronics equipment. To maintain its leading share of the global market, the DIC Group is promoting the expansion of production facilities with the aim of stabilizing its global supply configuration. The Group is also increasing the number of employees in sales and technical services for key automobile and automotive component manufacturers to enhance the accuracy and speed with which DIC Group products obtain approval from manufacturers.

Progress of Major Initiatives in Fiscal Year 2016

Inkjet inks

Leveraging its network of production facilities, the DIC Group responded to the needs of customers worldwide by shifting to overseas production for certain products previously exported from Japan. This move helped improve the efficiency of the Group's global supply chain.

PPS compounds

The Group completed a new dedicated PPS compound production facility in the PRC, the world's largest producer of automobiles in terms of volume. By making effective use of its previously established local technical service center, the Group took steps to encourage adoption of its products by manufacturers. The Group also completed construction of a production line at the Kashima Plant for PPS neat polymer —the principal raw material in PPS compounds—as scheduled in December 2016, thereby creating a supply configuration that will enable it to respond to expanding demand.



New PPS compound production facility in the PRC

New PPS Compound Suitable for LDS Developed

HIGHLIGHT

DIC recently succeeded in developing an innovative PPS compound suitable for use with laser direct structuring (LDS), a leading MID process used for forming circuits on 3D molded components. The Company has also commenced sample shipments of the new product. Because it facilitates the integration of multiple components, thus helping reduce weight, LDS is expected to find increased application in automobile manufacturing.



Formation of circuits on a 3D molded component

Process used for forming circuits on 3D molded components



LDS process Molded plastic doped with organic metallic compound



Laser activation

Creation of circuit tracks



Electroless plating

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Application Materials

A Variety of Products Made Possible by the Integration and Application of DIC Technologies



President, Application Materials Segment Shinsuke Toshima





Application Materials Product Division

Industrial adhesive tapes; magnetic tapes and coated sheets; hollow-fiber membranes and modules; coextruded multilayer films; health foods and natural colorants; decorative boards, interior housing products and coatings for building materials; decorative sheets and decorative films; sheet molding compounds (SMCs), bulk molding compounds (BMCs) and processed products; molded plastic products



Enhancing waterproof smartphone construction

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

One of the first series of waterproof tapes to be developed and marketed for waterproof smartphone construction, the *DAITAC WS#84* series continues to support efforts to enhance the ability of smartphones to resist water incress.



A superfood that provides a balanced wealth of nutrients DIC Spirulina

Spirulina is an edible blue-green algae rich in vitamins, minerals and ß-Carotene that boasts an excellent amino acid balance. Spirulina's nutritional value and popularity as an ingredient not only in health foods but also for culinary applications has earned it a reputation as a superfood.

Segment Operating Results



Business Strategies Under DIC108

Having devised a new growth model, the DIC Group is stepping up the expansion of its electronics and life sciences business. At the same time, the Group is promoting decisive rationalization of its housing products business.

Electronics and life sciences

In industrial adhesive tapes, the DIC Group is accelerating specin initiatives with global brand owners, as well as with nascent local brand owners in the PRC, with the goal of bolstering adoption for use in smartphones and tablet computers. The Group is also promoting development efforts with a view to entering the market for vehicle-mounted displays in the future. In hollow-fiber membranes and modules, the Group is working to sustain high growth for degassing modules used in inkjet printers, for which it holds the leading global market share, and to make a full-scale entry into the market for large degassing modules for water treatment applications. The Group's aims in the area of health foods are to maintain high sales of Spirulina, a highly rated superfood, and to expand sales of Spirulina-derived natural blue food coloring *Linablue*[®] in North America and Europe, taking advantage of a shift in market preferences from synthetic to natural food colorings.

Housing products

In the area of unsaturated polyester resin molded products, the Group continues working to improve profitability through restructuring measures and decisive cost reductions. In laminated products, the Group is revamping its business model for *DIC200*, a key strategic building material, and implementing dramatic structural reforms. The Group is also working to enhance the accuracy and accelerate the process of gaining certification for segment products.

Progress of Major Initiatives in Fiscal Year 2016

Electronics and life sciences

Efforts to encourage the new adoption of DIC Group industrial adhesive tapes for use in personal computers proceeded apace. In the area of hollow-fiber membranes and modules, sales of products used for the degassing of inkjet inks and in the manufacture of ultrapure water for use in semiconductor fabrication were firm. In health foods, operations commenced at the Group's new natural blue colorant extraction plant at its Spirulina production facility in the United States, built in fiscal year 2015, while efforts to elevate sales of *Linablue®* proceeded. The Group is in the process of further augmenting the plant's capacity, with completion scheduled for fiscal year 2018.

Housing products

In January 2017, DIC transferred its building and housing materials business to wholly owned subsidiary DIC Decor, Inc. To date, the Group has operated housing products and related businesses as independent business entities. The Group believes that combining these businesses into one entity will position it to conduct product development that reflects a more precise grasp of market needs and to enhance services.

t development that reflects a Hollow-fiber membrane module for degassing liquids hance services.

Production Capacity for Linablue® Natural Blue Food Coloring to be Further Expanded

HIGHLIGHT

Demand for natural blue food coloring *Linablue*[®], derived from edible blue–green algae Spirulina, is rising dramatically, particularly in North America and Europe, underpinned by a rapid shift in consumer preference toward natural food colorings. With the aim of effectively locking in this demand, in fiscal year 2016 the DIC Group resolved to increase the capacity of its U.S. plant for extracting the natural blue colorant, which came on-line in fiscal year 2015, with an eye toward completion in fiscal year 2018.





natural blue food coloring





Product Development for a Sustainable Society



Leveraging the Power of Chemistry to Create Value for Society

Addressing issues related to climate change, energy, food security and disaster prevention is one of the most significant challenges facing the world today. The DIC Group is leveraging the power of chemistry to provide products that can help resolve such issues and further drive social sustainability.

Super Engineering Plastics

Helping to Reduce Vehicle Weight, Improve Fuel Efficiency and Lower CO₂ Emissions

Applications for PPS Polymer

Compounds

1%

Films **1** %

8%

Value Creation

Reduce vehicle weight by using highperformance PPS compounds as an alternative to metal materials in automotive components

The increasing danger posed by issues such as global warming and air pollution has prompted many countries to introduce even stricter fuel efficiency requirements, obliging automakers to take steps aimed at increasing fuel efficiency— and in so doing lowering CO₂ emissions—by reducing vehicle weight. While the modification of engines and the use of different materials for vehicle bodies and fuel tanks have had a positive impact, efforts to integrate tens of thousands of components, as well as to switch to resin as the principal material used therein, are also important as automakers strive to achieve additional gram-level cuts. Further reducing vehicle weight is a particularly critical challenge for hybrid, electric, fuel cell and other environment-friendly vehicles that require the installation of heavy batteries or fuel cells.

Against this backdrop, efforts to advance the use of super engineering plastics high-performance plastics with exceptional resistance to heat—as an alternative to metal materials in automotive components as a way to reduce vehicle weight have progressed. DIC has focused particularly on PPS polymer, which weighs half as much as aluminum and delivers superb heat, chemical and flame resistance. Since 1976, DIC has promoted PPS compounds with attributes suited to use in automotive components while at the same time expanding applications from gasoline- and diesel-powered vehicles to include hybrid, electric and fuel cell vehicles, thereby contributing to improved fuel efficiency.

Using life cycle assessment (LCA)*, a technique for evaluating a product's environmental impact, DIC has also demonstrated that using PPS compounds rather than aluminum for certain electronic control components lowers CO₂ emissions attributable to such components by roughly 26%–31%.

* LCA: A technique used to assess the environmental impact of a product across all stages of its life, from raw material extraction through development, manufacture, use and recycling or disposal.



http://www.dic-global.

com/en/csr/special

18,000

5.000

23,000

A Distinctively DIC Response

An integrated configuration encompassing everything from polymer design through to molding compounds, underpinning a leading global market share



A key DIC strength is its integrated development and production configuration, which encompasses everything from polymer design through to mixing and compounding, enabling it to provide products tailored to the need of automakers. Recently, the Company developed a new compound for hybrid vehicles that combines the inherent heat resistance and electrical insulating properties of PPS polymer with superior strength, moldability and adhesiveness, among others, and which has been adopted for use in output power controls for batteries and lithium battery–related components. In light of rapidly expanding demand for PPS products worldwide, DIC has positioned PPS compounds as a key business that will drive growth going forward under its current medium-term management plan, DIC108, and is currently promoting the systematic expansion of its PPS compound production facilities. The Company is also increasing its annual production capacity for PPS compounds and has set a target for raising its share of the global PPS compounds market to 30% by fiscal year 2018.

In July 2016, an innovative PPS compound developed by DIC for use with

LDS—a process for forming circuits on 3D molded components—became the first such compound to gain approval for this application. A proprietary technology owned by a German manufacturer of printed circuit board (PCB) production equipment, LDS makes it possible to create circuit tracks on 3D molded component surfaces, which facilitates the integration of multiple components and the reduction of component size. These benefits have encouraged the expanded use of LDS by manufacturers of components for automobiles and medical devices. Materials produced for LDS must be approved by LPKF. Drawing on the wealth of technologies it has built up as a manufacturer of PPS compounds, DIC developed *LP-150-LDS*, the first PPS compound that has met LPKF Laser & Electronics AG's stringent standards for approval. As it preserves the renowned heat and chemical resistance of PPS products, *LP-150-LDS* can be used for automotive components, for which other LDS-grade materials are not suited. Expectations are thus high that its use will further accelerate efforts to reduce the weight as well as number of vehicle components.

The DIC Group's Global PPS Compound Production Network Zhangjiagang, PRC 6.000 metric tonnes /ienna, Austria Technical service center 6.000 metric tonne PPS Polymer Shanghai Technical service center Frankfur Kashima (Japan) Branched, linear 3 000 metric Technical service and Sodegaura (Japan) Branched, linear lopment center Chiba Total

Key People from DIC

DIC's principal strength is its close relations with automotive components manufacturers and its swift responsiveness.

Penang, Malaysia 4,500 metric tonnes Technical service cente Penang

To encourage the further use of PPS compounds in new vehicle components, it is crucial that we promptly grasp the technical requirements of customers and actively bring our proprietary know-how and new technologies to facilitate collaborative development. We must also fully leverage our integrated configuration, which encompasses everything from polymer design through to molding compounds, to promote the swift development and commercialization of new products. To these ends, we are creating opportunities to share information and strengthen communication, including organizing technological exchange meetings, so as to expand our selection of applicable materials. The effectiveness of this approach reflects the competitive advantage we enjoy thanks to our proven track record to date.

Left: Senior Manager, Nagoya EP Sales Department, Solid Compounds Product Division Kenji Hasegawa Center: PPS Products Manager and Senior Manager, PPS Products Group, Solid Compounds Product Division Toshiyuki Mori Right: Head Researcher, Polymer Processing Technical Group 2, Polymer Processing Technical Division Hirokiyo Nakase



Providing Materials that Facilitate Safe and Secure Production and Use

Emission

DMF

Environment-Friendly Polyurethane Resins

Value Creation

Promoting environment-friendly polymers worldwide

With the rapid tightening of environmental regulations in key global markets, including the PRC, a shift in demand from solvent-based to water-based and solvent-free products poses a considerable challenge for manufacturers of polyurethane resins. In the polymers business, the DIC Group is advancing the swift development of environment-friendly products that respond to pertinent laws and regulations and promoting sales of environment-friendly polymers worldwide. DIC is actively expanding its polymers business in the PRC, taking a multifaceted approach that includes growing markets for products exported from Japan and produced in Taiwan and using Group sites in the PRC to further business development. As a natural extension, the Group is also looking to expand its environment-friendly polymers business beyond the PRC to other markets in Asia. In addition, DIC is exploring the idea of collaborating with the Sun Chemical Group-a DIC Group member-to encourage a broader market presence in the Americas and Europe. Looking ahead, the DIC Group will take decisive steps to invest strategically and work in collaboration with other companies to create business systems for environment-friendly products to expand the scale of this business in a manner that responds to market needs.

Athletic shoes are constructed from multiple layers of artificial or synthetic leathers. Individual layers are supplied as shoe components and bonded together by hand.



Contributing to the manufacture of products with a lower environmental impact

Bolstered by outstanding performance features and a shift in preference from natural to artificial and synthetic leathers, demand for polyurethane resins, which are used as raw materials and adhesives for artificial and synthetic leathers, continues to increase. However, the process used to manufacture polyurethane resins for artificial and synthetic leathers uses the organic solvent dimethylformamide (DMF). VOCs emitted during this process and the health consequences of DMF residue in artificial and synthetic leathers are thus major concerns. For this reason, DMF is likely to be added to the European Union's Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) list of banned substances. The DIC Group, which develops and manufactures a diverse range of solventborne and waterborne polyurethane resins, has succeeded in developing and marketing DMFfree environment-friendly polyurethane resins with properties identical to their conventional counterparts. The Group is currently establishing a framework for providing total solutions, including raw materials and production systems, to manufacturers of athletic shoes.

A Distinctively DIC Response

Combining core technologies to establish technologies for the production of environment-friendly polyurethane resins



Artificial and synthetic leathers used in athletic shoes must deliver an appropriate texture (soft to touch and sufficiently strong), flex resistance at room temperature and low temperatures, durability and a light weight. Ensuring competitive production costs is also a key concern. With conventional solventborne polyurethane resin, the vaporization of solvent facilitates the formation of a strong surface skin, resulting in a product that satisfies performance requirements. In contrast, the use of waterborne resins hinders the achievement of a high molecular weight and even grain, making it difficult to realize sufficient strength, durability and scuff resistance.

By combining three key core technologies—polymer design technologies used in *HYDRAN* waterborne adhesive polyurethane resins, moisture-curing technologies used in *TYFORCE* solvent-free hot-melt adhesives, and foam expansion and reactivity control used in *PANDEX* thermosetting polyurethane resins—DIC has succeeded in developing DMF-free polyurethane resins that are comparable in quality to conventional solventborne products, as well as a highly efficient production system that shortens process times, thereby reducing energy consumption and production costs.

Providing a total production system that extends to processing rather than simply supplying materials

An environment-friendly production system requires not only production technologies but also process design technologies. DIC collaborated with equipment manufacturers to develop production processes optimized to suit product properties and in fiscal year 2016 completed a system, which it will provide to customers together with materials. To ensure swift delivery to the PRC production bases of leading global athletic shoes manufacturers, the system will be supplied through Taiwan-based Group company Lidye Chemical Co., Ltd. DIC will endeavor to establish this system, which facilitates local procurement of both resin and equipment, as an environment-friendly global standard across a wide range of industries. Of particular note, DIC's new total production system responds to the environmental requirements of automakers for materials used in vehicle interiors. Accordingly, the Company will continue working actively to improve the texture and durability (resistance to damage from wear, sebaceous matter, chemicals, heat, light and moisture) of artificial and synthetic leathers produced using the system, as well as to promote the system's appeal in the market.



DIC's Environment-Friendly Polyurethane Resin Production System



Key People from DIC

Recognizing tighter regulations as a business opportunity, we are working to define a new global standard for environment-friendly polyurethane resins.

The passing of increasingly stringent VOC emissions regulations worldwide is testing the technological capabilities of chemicals companies. We recognize this trend as a golden opportunity to leverage our comprehensive strengths to expand our business.

Success in the polyurethane resins business today demands more than the ability to provide materials. With consideration for the environment our guiding objective, we believe it is possible for us to define a new global standard by providing entire plants: in other words, comprehensive solutions. This distinctive business strategy is made possible by the DIC Group's thorough grasp of all the technologies involved, from polymer design through to production, as well as its global network of production facilities.

Left: General Manager, Osaka Urethanes Sales Dept., Polymers Product Division Masahiro Nishi Right: Group Manager, Polymer Technical Group 6, Polymer Technical Div. 2 Tamotsu Sakamoto



IZANO Folding Emergency Helmets

Delivering Easy Storability and Portability, **IZANO** Helmets Help Prevent and Mitigate **Injuries in Disaster Situations**

GOOD DESIGN

Cumulative sales since launch (2013) More than

Value Creation

Design a helmet that is suitable for use in self-help, mutual aid and public assistance initiatives during disaster situations

Helmets are indispensable in protecting the heads of people evacuating during a disaster from falling objects such as roof tiles and shards of glass. Wearing a helmet keeps one's hands free, reducing the risk of stumbling and allowing one to proceed safely while carrying a flashlight. Accordingly, there is a clear demand for emergency helmets that offer both efficient storability and outstanding performance and that can be used not only for evacuation but also for post-disaster recovery and reconstruction efforts.

Thanks to a split ring-format folding structure, IZANO helmets pop open instantly simply by pushing the center portion up. The volume of IZANO helmets is approximately 60% lower than conventional helmets, making them easy to store and to carry around.



An attractive helmet that boasts professional-level specifications, is easily stored and has sold upwards of 350 thousand units to date



DIC's ability to develop an outstanding design and structure, produce prototypes, conduct tests and analyze findings within the DIC Group is a key strength. Group company DIC Plastics, Inc., recently developed the IZANO helmet, which combines outstanding strength, storability and portability. The first nonseparation foldable helmet to comply with standards for headgear that protects against head injuries caused by flying and falling objects and falls from high places established by Japan's Ministry of Health, Labour and Welfare (MHLW), the IZANO helmet was also adopted by the Tokyo Metropolitan Police Department for off-duty personnel mobilized in the event of a disaster. The IZANO helmet is also used widely on construction sites and production floors. More than 350,000 units have been sold since the helmet was launched in October 2013. The IZANO helmet also received an award in the 2014 edition of Japan's Good Design Awards.

Key Person from DIC

A female architect told me this was exactly the helmet she has been looking for.

When we exhibited IZANO helmets at a trade fair, a female architect said that the IZANO helmet was exactly what she had been looking for. She went on to tell me that she could not stand the helmets usually handed out to visitors at construction sites and had been searching for a helmet that delivered both professional-level performance and an attractive design, and that could be carried in her bag. In that our aim had been to develop a helmet that was not only suited to disaster situations but also boasted outstanding versatility, her comments made me extremely happy. I look forward to developing other innovative products that respond precisely to the diverse needs of our customers.

Safety Materials Sales Group, Safety Materials Sales Department, DIC Plastics, Inc Yoshitaka Ikegami

Manager in Charge

TOPIC

Social Imperative

Helping Improve Food Packaging to Extend Product Shelf Life

Sun Chemical Promotes Initiatives Aimed at Addressing an Important Social Imperative

http://www.dic-global.com/en/csr/ special/topics.html

Sun Chemical, which oversees the DIC Group's operations in Europe and the Americas, is one of the world's leading manufacturers of printing inks. The company develops and supplies a broad range of products that address diverse social imperatives.

Shelf life and the lightweighting of packaging are business-critical activities for brand owners in today's marketplace. Under the increasing scrutiny of regulations worldwide,

packaging must protect products, giving them optimal freshness and shelf life, whether in transit, in-store or at home. This applies as much to products with a long shelf life as to fresh produce, which needs packaging that will preserve color, fragrance, texture and appeal, as well as ensure that it remains safe to consume.

Many external factors impact negatively on shelf life and freshness, from oxygen and UV light to moisture and odors. Protective packaging needs to be functional. While traditional packaging materials such as glass and metal are impermeable, their weight can be a disadvantage, increasing transportation costs and carbon footprint.

This has led to the trend of utilizing plastic packaging formats, including pouches, but to create packaging that enhances shelf life, these must be carefully structured to deliver optimum shelf life, in some cases using a considerable number of layers.

Sun Chemical's Response

free and waste-reducing solutions, can be addressed through a revolutionary approach that replaces current barrier technology with printable oxygen-barrier coatings. Sun Chemical's *SunBar*[®] (Aerobloc) oxygen-barrier coatings are technically advanced next-generation products

The packaging market's need for products that deliver enhanced shelf life, as well as sustainable, recyclable, metal-

designed to enable the lightweighting of packaging by removing ethylene vinyl alcohol (EVOH) polymer layers, as well as offering improved laminate flexibility. *SunBar** (Aerobloc) oxygen-barrier coatings provide a smooth, homogenous, pinhole-free layer that can be easily overprinted with inks and laminated to a variety of secondary films. These coatings are cost-effective, compostable and printable with either flexo or gravure inks, allowing for lighter-weight packaging, a reduced carbon footprint and easy application with few changes to

Sun Chemical's recent partnership with acpo, ltd., allows the latter to deliver *SunBar®* (Aerobloc) pre-coated films to converters who cannot coat their own films. acpo specializes in coating thin films with state-of-the-art equipment. These customers now have access to economically priced alternative barrier films with improved barrier protection without the need for capital investment in a coating unit.



from the DIC Group

/OICE Si

current equipment.

SunBar[®] (Aerobloc) can resolve many of the challenges that brand owners are facing.

Brand owners today face a variety of challenges—from sustainability, regulatory compliance and food safety to lightweighting packaging to cut costs—while at the same time enhancing product shelf life. Coated plastics offer barrier improvements, but also have downsides that pose substantial hurdles to overcome. *SunBar** (Aerobloc) oxygen-barrier coatings serve as a solution to offset these deficiencies and can resolve many of the challenges that brand owners are facing in today's competitive marketplace.

Product Manager, Coatings, Sun Chemical Corporation Robert O'Boyle



Directors, Corporate Auditors and Executive Officers

(As of April 2017)

Directors



1 Representative Director 2 Representative Director Masayuki Saito

3 Director 4 Director

5 Director 7 Director* 6 Director 8 Director* Hitoshi Wakabayashi Hideo Ishii Yukako Uchinaga

9 Director Yoshiyuki Nakanishi Yoshihisa Kawamura Kaoru Ino Takao Suzuki Kazuo Tsukahara * Outside



Corporate Auditors



1 Corporate Auditor Jiro Mizutani

2 Corporate Auditor Yoshiyuki Mase

3 Corporate Auditor*

Katsunori Takechi 4 Corporate Auditor*

Cindy Yoshiko Shirata

* Outside



> Outside Director Profiles

Takao Suzuki

January 2006 Vice President and Executive Officer. Hitachi, Ltd. June 2016 Representative Executive Officer, Hitachi Transport System, Ltd. Outside Director, DIC Corporation June 2016 Chairman Erneritus, Hitachi Transport System, Ltd.

Kazuo Tsukahara

April 2008 Director and Managing Executive Officer, IHI Corporation April 2018 Representative Director and Executive Vice President, IHI Corporation June 2014 Adviser, IHI Corporation

> Outside Corporate Auditor Profiles

Katsunori Takechi

 April
 2000
 Public Prosecutor, Civil Affairs Bureau, Ministry of Justice

 October
 2003
 Joins Anderson Mori and Tomotsune

 July
 2011
 Managing Partner, Takechi & Partners

Cindy Yoshiko Shirata

 April
 2002
 Professor, Nihon University College of Economics

 February 2010
 Visiting Professor, University of Munich

 October
 2014
 Professor, Faculty of Business Administration, Bunkyo University

Yukako Uchinaga April 204 Director and Senior Executive Officer, IBM Japan, Ltd. October 2009 Director and Executive Vice President, Benesse Holdings, Inc. April 2013 Honorary Chairman, Berlitz Corporation

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> Executive Officers



President and CEO Yoshiyuki Nakanishi



Managing Executive Officer Hitoshi Wakabayashi President, Fine Chemicals Segment General Manager, Pigments Product Division



Executive Officer Kaoru Ino In Charge of Corporate Strategy Division and Kawamura Memorial DIC Museum of Art



Executive Officer Hideki Inouchi Chairman and General Manager, DIC (China) Co., Ltd. Chairman, DIC (Shanghai) Co., Ltd.



Executive Officer Sakae Yoshida General Manager, Production Administrative Division



Executive Officer Hiroyuki Ninomiya In Charge of Finance and Accounting Division



Executive Vice President Masayuki Saito Aide to the President and CEO

Adde to the President and CEO CFO Chairman of the Board, Sun Chemical Corporation Chairman of the Supervisory Board, Sun Chemical Group Cooperatief U.A.



Managing Executive Officer Kazunari Sakai Managing Director, DIC Asia Pacific Pte Ltd



Managing Executive Officer Toshifumi Tamaki In Charge of Technical Segment (Technical Administrative Division and Corporate R&D Division) General Manager, Technical Administrative Division



Accure Once Massaya Nakafuji General Manager, Corporate Planning Department In Charge of Osaka Branch Office and Nagoya Branch Office



Executive Officer Taihei Mukose In Charge of Purchasing and Logistics & Information Systems Division General Manager, Purchasing Department



Executive Officer Kazuo Hatakenaka General Manager and Senior Manager, Liquid Crystal Materials, Liquid Crystal Materials Product Division



Managing Executive Officer Yoshiaki Masuda In Charge of General Affairs and Legal Division



Managing Executive Officer Hideo Ishii President, Printing Inks Segment General Manager, Printing Inks Product Division. and Printing Inks Production Division



Executive Officer Naoyoshi Furuta Deputy Managing Director (South Asia), DIC Asia Pacific Pte Ltd



Executive Officer Koji Tanigami President & CEO, DIC Graphics Corporation



Executive Officer Kiyotaka Kawashima General Manager, Corporate R&D Division and Central Research Laboratories



Executive Officer Paul Koek Chief Financial Officer, Regional Financial Director, DIC Asia Pacific Pte Ltd



Managing Executive Officer Toshio Hasumi President, Polymers Segment General Manager, Polymers Product Division



Managing Executive Officer Masami Hatao General Manager, Marketing Division



Executive Officer Rudi Lenz President and CEO, Sun Chemical Corporation



Executive Officer Shinsuke Toshima President, Application Materials Segment General Manager, Application Materials Product Division



Executive Officer Masanobu Mizukoshi President, Compounds Segment General Manager, Liquid Compounds Product Division



Executive Officer Myron Petruch President, Performance Pigments, Sun Chemical Corporation

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, the DIC Group also promotes ongoing measures to reinforce its management system and ensure effective monitoring thereof.

> Policy on Corporate Governance

DIC has prepared a Policy on Corporate Governance, which it has published on its corporate website. Policy on Corporate Governance **WEB** http://www.dic-global.com/en/about/pdf/governance_en.pdf

Corporate Governance Organization

A company with internal auditors, DIC maintains a Board of Directors and a Board of Corporate Auditors. DIC has also instituted an executive officer system and has established a Nomination Committee, a Remuneration Committee, an Executive Committee and a Sustainability Committee.



Board of Directors

To accelerate decision making and reinforce corporate governance, nine directors have been elected to the Board of Directors. Of the nine, three are outside directors. In principle, the Board meets once monthly. The Board of Directors is responsible for making decisions on matters stipulated in the Companies Act of Japan, and in DIC's own regulations, as requiring Board-level approval, as well as for monitoring the execution of business activities, as reported by the executive officers.

2 Nomination Committee

The Nomination Committee was established as an internal committee of the Board of Directors with the aim of ensuring objectivity in the nomination of candidates for the position of director, auditor or executive officer and the dismissal of serving directors, corporate auditors and executive officers. The committee, which submits proposals to the Board of Directors, meets as necessary. At present, three of the committee's five members are outside, while the position of committee chairman is currently filled by an outside director.

3 *Remuneration Committee*

The Remuneration Committee was established as an internal committee of the Board of Directors with the aim of enhancing the objectivity of procedures for determining executives' remuneration. The committee, which has been entrusted with responsibility for determining the salaries and bonuses of directors and executive officers, meets as necessary. At present, three of the committee's five members are outside, while the position of committee chairman is currently filled by an outside director.

4 Executive Committee

The Executive Committee deliberates and resolves issues related to the execution of business activities. In principle, the committee meets twice monthly. Committee members are directors and executive officers designated by the Board of Directors. Meetings are also attended by one corporate auditor as part of the auditing process. Details of deliberations and resolutions are reported to the Board of Directors.

5 Sustainability Committee

The Sustainability Committee, which functions as an advisory body, meets several times annually to formulate sustainability policies and activity plans, as well as to evaluate and promote initiatives. Committee members are directors and executive officers designated by the Board of Directors. As part of audit activities, one corporate auditor also attends Sustainability Committee meetings. The committee reports the matters upon which it deliberates and the results of its deliberations to the Board of Directors.

6 Board of Corporate Auditors

The Board of Corporate Auditors comprises four members, including two outside corporate auditors. In principle, the Board of Corporate Auditors meets once monthly. Board activities include debating and determining auditing policies and auditing plans. Board members also report on the results of audits conducted.

7 Internal Auditing Department

The internal auditing department is charged with internal auditing, which includes monitoring the effectiveness of internal controls at DIC and domestic DIC Group companies. For DIC Group companies in Asia, Oceania, the PRC, the Americas and Europe, internal auditing is the responsibility of local internal auditing teams.

8 Accounting Auditors

DIC has engaged Deloitte Touche Tohmatsu LLC as its independent auditors. DIC strives to ensure an environment that facilitates the accurate disclosure of information and fair auditing.

> Rationale Behind Current Corporate Governance Organization

DIC has instituted an executive officer system, a move aimed at separating decision making and implementation and thereby accelerating business execution and clarifying responsibilities. As well as appointing three highly independent outside individuals to its Board of Directors, the Company has taken steps to reinforce its monitoring of business execution. DIC also has a Nomination Committee and a Remuneration Committee, which include the three outside directors, to ensure objectivity in the nomination of, and in determining remuneration for, directors and executive officers. The four-member Board of Corporate Auditors, which includes one attorney and one university professor as outside corporate auditors, liaises with the accounting auditors and the internal auditing department. This structure ensures the effective functioning of DIC's corporate governance system.

Status of the System of Internal Controls

The DIC Group maintains a keen awareness of four key objectives, which are to ensure the effectiveness and efficiency of its businesses, uphold the reliability of its financial reporting, comply with laws and regulations relevant to its business activities, and safeguard its assets. To this end, DIC has prepared and operates a system of internal controls to ensure proper business activities, based upon the Companies Act of Japan and the Financial Instruments and Exchange Act of Japan. The Board of Directors hears annual reports on measures on the status of the system of internal controls, a summary of which is included in the Company's report on its business activities.

Outside Directors and Outside Corporate Auditors

Number and Role of Outside Directors and Outside Corporate Auditors

DIC currently has three outside directors and two outside corporate auditors. The three outside directors have extensive experience in and knowledge of corporate management, which they are able to leverage in the performance of their duties as outside directors of DIC. In addition to attending meetings of the Board of Directors, the outside directors serve as members of the Nomination Committee and the Remuneration Committee, enabling them to provide supervision with an independent point of view, thereby helping to reinforce DIC's corporate governance. The two outside corporate auditors—one an attorney specializing in corporate law and the other an academic expert in the field of accounting whose specialties are financial accounting and corporate management—advise management of the DIC Group from an expert, multifaceted and independent perspective, thereby helping to reinforce the auditing function.

2 *Standards Used to Evaluate the Independence of Outside Directors and Outside Corporate Auditors*

DIC has established standards for evaluating the independence of individuals appointed to the position of outside director or outside corporate auditor. DIC's outside directors and outside corporate auditors are individuals who, based on these standards, are unlikely to have conflicts of interests with ordinary shareholders and who comply with criteria for the independence of directors/auditors set by the Tokyo Stock Exchange.

> Other Initiatives to Enhance the Corporate Governance Organization

Composition of the Board of Directors

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With the aim or reinforcing its corporate governance organization, in March 2017 DIC increased the number of outside directors on its Board of Directors from two to three. One member of the Board of Directors is female, as is one member of the Board of Corporate Auditors.

Composition of the Board of Directors and the Board of Corporate Auditors

	In-house	Outside	Total	Percentage of outside members
Directors	6	3	9	33.3%
Corporate auditors	2	2	4	50.0%
Total	8	5	13	38.5%

Composition of the Board of Directors



2 Remuneration for Executives

Remuneration for directors is determined by the Remuneration Committee, which takes into account market rates. In addition to executive compensation, which is a fixed monthly sum, remuneration for directors includes bonuses, which are linked to consolidated operating results and the degree of achievement of individual targets, and share-based compensation, which is linked to medium-to long-term operating results. Remuneration for corporate auditors is based on internal rules established by the Board of Corporate Auditors, with consideration given to ensuring a balance with remuneration for directors, as well as to market rates for remuneration for auditors, and is determined through deliberations by the corporate auditors. In June 2017, DIC introduced a new Board Benefit Trust (BBT), a performance-based stock ownership plan for executives, thereby clarifying links between remuneration and degree of achievement of medium-to long-term operating results targets.

3 *Evaluation of the Board of Directors' Effectiveness*

DIC conducts an analysis and evaluation of the effectiveness of the Board of Directors annually via a self-evaluation conducted by the directors and corporate auditors. In fiscal year 2016, the Company conducted a survey of all directors and corporate auditors regarding the activities of the Board of Directors and the Board of Corporate Auditors, responses to which were analyzed and evaluated by the Board of Directors. As a result, the effectiveness of the Board of Directors was confirmed.

DIC will continue to review and modify the evaluation standards used in evaluating the Board of Directors' effectiveness. DIC recognizes modifying standards related to the Board of Directors and enhancing communications between the Board and executive officers, among others, as key challenges and will continue working to promote improvements.

Sustainability Report

Amid rising environmental concerns, including climate change, and increasingly urgent social imperatives, companies today face an ever-more diverse array of challenges. In line with its basic sustainability policy, the DIC Group promotes a variety of sustainability initiatives worldwide and works to maintain an accurate grasp of social imperatives pertaining to environmental, social and governance (ESG)-related issues.

Basic Sustainability Policy (Formulated in January 2014)

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 diversity and 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

The DIC Group's sustainability framework comprises 11 key themes, which are categorized as basic themes, themes that demonstrate unique capabilities and themes that combine elements of the previous two classifications. The Group implements a broad range of global initiatives that take into account its responsibility to ensure proper product stewardship, as well as its position as a leading manufacturer of fine chemicals.

In line with its basic sustainability policy, the DIC Group has formulated medium-term (fiscal year 2016–fiscal year 2018) policies and creates annual activity plans for each of these themes. The Group makes use of the plan–do–check–act (PDCA) cycle in promoting initiatives and reports on its achievements annually in the DIC Report.

Themes that demonstrate unique capabilities (A)	Business models that respond to social imperatives
(Themes that combine elements of (A) and (B)	Environment, safety and health · P37 Quality · P42 Human resources management · P43 Sustainable procurement · P46
Basic themes (B)	Compliance P35 Risk management P35 Information security P36

System for Promoting Sustainability Initiatives

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

> 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) 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.



The 2030 Agenda for Sustainable Development

At the UN Sustainable Development Summit in September 2015, a proposal titled "Transforming our world: the 2030 Agenda for Sustainable Development," later summarized as the Sustainable Development Goals (SDGs), was adopted with the participation of more than 150 UN member states. The agenda, which succeeded the Millennium Development Goals (MDGs), encompasses 17 goals and 169 targets. All UN member states are expected to mobilize efforts to attain the 17 goals, essential to sustainable development for the planet, by 2030. The DIC Group pledges to contribute through its business activities to the success of the SDGs.



Note: These SDG icons are used in this report (pages 35–49) to identify pertinent DIC initiatives. For more information on the SDGs, please see: http://www.un.org/sustainabledevelopment/sustainable-development-goals/

Towards Fair and Transparent Corporate Activities

http://www.dic-global.com/en/ csr/philosophy/management/ compliance.html



SDGs Goal 16

> The DIC Group Code of Business Conduct

The DIC Group completed the DIC Group Code of Business Conduct in July 2014. 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 has since been translated into 25 different languages to ensure that DIC Group employees worldwide 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.

DIC Group Code of Business Conduct http://www.dic-global.com/en/csr/pdf/code_of_business_conduct_en.pdf

Initiatives to Promote Compliance

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

- Compliance training is provided for employees at point of hire, when promoted and before overseas transfers. In addition, intranet-based comprehension checks are provided to promote awareness of the DIC Group Code of Business Conduct in Japan, the Asia–Pacific region and Greater China. Participation in all three regions averages 98%-plus of eligible employees.
- Compliance officers are appointed 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. In fiscal year 2016, there were no serious violations of compliance laws.

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 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.

🖐 Risk Management

http://www.dic-global.com/en/csr/ philosophy/management/bcm.html



Reducing Business Risks and Preventing the Recurrence of Incidents

Risk Management Policy

To date, the DIC Group's Risk Management Subcommittee has focused 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 real http://www.dic-global.com/en/csr/philosophy/management/bcm.html

DIC Group Code of Business Conduct:

> Risk Management System

The DIC Group risk management system, established by the Risk Management Subcommittee, begins with the distribution to directors of survey questionnaires regarding risks. Based on survey results, the subcommittee determines priority risks and oversees the continuous implementation of measures to manage those risks.

In fiscal year 2016, the Risk Management Subcommittee completed the implementation of risk management plan measures to address 15 of 16 identified priority risks, that is, all but "governance of subsidiaries," which is particularly broad in scale and will thus be carried over. The effectiveness of measures was assessed and an executive review conducted, based on which the designation for all 15 was shifted from "priority" to "routine." The subcommittee will continue to apply the PDCA cycle, taking decisive steps to further enhance DIC's ability to manage these risks.

DIC's first step in fiscal year 2017 was to incorporate materiality into the risk identification process. As a result, the Company identified six new priority risks to be addressed in fiscal year 2017: (1) Insufficient ability to create next-generation businesses; (2) Insufficient management of/responses to stricter regulations for chemical substances; (3) Inadequacy of/delays in efforts to foster global human resources; (4) Inadequacy of/delays in efforts to establish an optimal global production configuration; (5) Inadequacy of global R&D capabilities; and (6) Inadequacy of/delays in business continuity management (BCM). Rounding out the list of priority risks for fiscal year 2017 is (7) Governance of subsidiaries, which has been carried over from fiscal year 2016.

Looking ahead, DIC will continue to promote awareness and dissemination of the risk management policy and the risk management system. To enhance BCM, corporate headquarters will spearhead the preparation of Business Continuity Planning (BCP) Guidelines for lateral deployment across the Group.

BCM

Drawing on lessons from the Great East Japan Earthquake, the DIC Group now accounts for all risks with the potential to interrupt business continuity through BCM. These risks include natural disasters such as large earthquakes and floods; influenza and other pandemics; explosions, fires, leaks and other facility accidents; and major corporate scandals. The Group comprehensively estimates the probability of each risk and its impact on management, prioritizing response measures for more significant risks.

Initiatives to Strengthen Governance at Subsidiaries

A major global corporate entity, DIC recognizes that ensuring subsidiaries share the same values and vision, despite differences in culture, systems and business practices, while at the same time complying with local laws, regulations and rules, is critical to sustainable growth for the Group. DIC has thus positioned governance at subsidiaries as a crucial risk requiring ongoing initiatives and will continue to promote efforts to reinforce the governance configurations of subsidiaries worldwide.

Framework for Supporting the Management of Subsidiaries

As an organization with global operations, DIC has worked continuously to reinforce and increase the efficiency of its governance system. In fiscal year 2016, DIC outlined four key themes to guide these efforts: (1) Enhance the visibility of Group governance systems; (2) Ensure appropriate behavior by subsidiaries' boards of directors; (3) Ensure appropriate behavior by subsidiaries' executives; and (4) Implement measures that help subsidiaries ensure rational front-line operations.

'OICF Executive Officer (In Charge of Finance and Accounting Division) Hiroyuki Ninomiya

Governance leverages common DIC Group values and mechanisms to create an operating foundation that allows people on the front lines to focus on their responsibilities.

Making certain that all employees-whether at corporate headquarters or a DIC Group company-feel they are all on the same team and setting common Groupwide rules to promote cooperation will enable us to maximize and benefit from synergies. We will continue working to create an operating foundation that allows leaders on the front lines at each of the Group's bases to focus on their responsibilities, without being inundated by everyday management-related minutia. I am confident that creating a work environment that inspires pride in each and every employee will help further enhance the DIC Group's appeal and drive growth.

(Information Security

Initiatives to Ensure Information Security

Globally Maintaining and Enhancing Information Security

Initiatives in Japan In fiscal year 2016, the DIC Group continued working to update rules for addressing security threats arising from cloud computing, smart devices and other emerging IT technologies. Looking ahead, the Group will press forward with efforts to revise rules to accommodate changes in working styles and other developments attributable to the progress of digitization. Preparations are also under way to develop an e-learning program and implement information security awareness initiatives targeting employees Groupwide.

Initiatives in Asia and Oceania In fiscal year 2016, the DIC Group formulated information and communications technology (ICT) usage and management guidelines for Asia and Oceania. By promoting the deployment and firm establishment of these rules, the Group will continue working to reinforce the information security measures of DIC Group companies in these regions.

Initiatives in the Americas and Europe Having recognized information security as a challenge of vital importance, the Sun Chemical Group, which oversees operations in the Americas and Europe, took steps to expand its existing information security system and made infrastructure investments aimed at facilitating prompt postdisaster recovery. The group also modified its information security policy and countermeasures to facilitate effective responses to ever-more extensive and sophisticated information security risks.

Safeguarding Information Security Environments in Asia and Oceania

The DIC Group has developed an overall plan for introducing a security system for Asia and Oceania based on a unified infrastructure. In fiscal year 2017, the Group will begin building country-specific management systems with the aim of combating, among others, computer viruses and software vulnerabilities.

IT Manager, PT. DIC Graphics and Head of the IT Help Desk for Southeast Asia and Oceania Revi Septiana Rachman OICE

We are working to ensure and enhance information security in Southeast Asia and Oceania.



In addition to being in charge of the IT help desk for Southeast Asia and Oceania, I am involved in efforts to devise and firmly establish various information security measures. Because ensuring internal information security is critical to conducting our business, we must devote considerable attention to creating a framework for protecting the various types of data we handle. Accordingly, we are promoting regional infrastructure improvements, which will enable us to guarantee a superior level of data security. We are also working to deploy and firmly establish regional ICT usage and management guidelines to further improve the security of our information.



Basic Themes



from the DIC Group

http://www.dic-global.com/en/csr/ philosophy/management/security.html

Environment, Safety and Health (ESH)





Toward the Achievement of a Sustainable Society

SDGs Goals 3, 6, 7, 12, 13, 14 and 15

Promoting Responsible Care

Initiatives in Fiscal Year 2016

In line with the DIC Group's Responsible Care activity plans for fiscal year 2016, the Responsible Care Department provided broad-based support to the initiatives of Group companies worldwide with the aim of reinforcing overall Group efforts. Overseas, the Group is working to rebuild its framework for promoting Responsible Care. In the Asia–Pacific region, the Group established country heads (individuals in charge of Responsible Care in individual countries), under the supervision of the regional ESH officer, and in October 2016 held a meeting of regional country heads in Singapore to exchange views on the region's ESH policy, activity plans, targets/challenges and energy-saving investment plans for fiscal year 2017.

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Steps were also taken to strengthen the ESH framework in Greater China. This included dispatching the parent company's ESH manager to serve as regional ESH director and the assignment of ESH coordinators to oversee efforts in the south and the east of the PRC.

ESH Audits

> Audits in Fiscal Year 2016

In Japan, Responsible Care Department specialists audit the Responsible Care efforts of domestic consolidated subsidiaries. In addition to regular audits in fiscal year 2016, the Group assessed the progress of remedial measures at 13 domestic Group sites in response to issues

Outline of ESH Audits Implemented (Fiscal Year 2016)



identified in fiscal year 2015 audits. The Group promotes similar efforts overseas and in fiscal year 2016 conducted inspections to determine the status of management systems, as well as audits in three areas (environment, safety and health) in Greater China, the Republic of Korea (ROK) and the Asia–Pacific region.

ESH and Disaster Prevention

> ESH

In Japan, the DIC Group introduced full-scale hands-on safety training in 2012. Since then, the Group has offered training that bases simulations on previous accidents, including those being caught in machinery, electrical discharges or fires from static electricity. In 2014, the Group opened the Saitama Hands-On Safety Training Center, a facility boasting equipment that allows the simulation of an array of accidents.

To reduce the incidence of occupational accidents among inexperienced employees, in fiscal year 2014 DIC and DIC Graphics began including handson safety training and Kiken Yochi Training (KYT) ("hazard prediction training") in training curricula for new employees. In fiscal year 2015, the Group downsized six types of hands-on training equipment for a mobile initiative and focused on enhancing the capabilities of instructors. In fiscal year 2016, the Group loaned 20 pieces of hands-on training equipment for a mobile initiative encompassing five sites. The Group is also promoting the adoption of hands-on safety training at overseas Group companies.

Status of Occupational Accidents

The DIC Group promotes a variety of initiatives aimed at eliminating occupational accidents. In fiscal year 2016, the number of occupational accidents resulting in workdays lost across the DIC Group were down from the fiscal year 2015 level. Looking ahead, the Group will continue working to analyze the causes of occupational accidents resulting in workdays lost that have occurred to date and to reflect its findings in concrete improvements with the goal of preventing the further occurrence of such accidents.

Principal ESH and Disaster Prevention Initiatives (Fiscal Year 2016)

	1	Made regional data visible through monthly reports
	2	Reduced risks
	3	Promoted e-learning-based training for employees
	4	Trained skilled safety personnel to predict risks
	5	Advanced hands-on safety training
Ν	lote:	For more information, please see the complete version of DIC Report 2017.
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Number of Hands-On Safety Training Participants (Fiscal Year 2016)

	DIC Group (Japan)	DIC Group (overseas) (Greater China: 4 companies; Asia-Pacific region: 2 companies)	Total
FY2016	252	504	756
Cumulative total (FY2012-2016)	7,990	2,352	10,342

Workdays Lost Due to Occupational Accidents (FY2014-2016)

	DIC			DIC Group (Japan)			DIC Group (Global)			
	2014	2015	2016	2014	2015	2016	2014	2015	2016	
Number of workdays lost	0	1	3	4	5	5	80	88	71	
Frequency rate	0.000	0.181	0.541	0.429	0.556	0.548	2.133	2.375	1.893	
Severity rate	0.000	0.005	0.012	0.006	0.018	0.026	-	-	-	
TRIR *	1.29	1.27	2.35	2.25	2.11	3.07	4.37	4.32	3.84	

* Total recordable injury rate (TRIR): Number of occupational accidents resulting lost work days + number of occupational accidents not resulting in lost work days / million work hours The DIC Group handles a broad range of chemicals, including specified chemical substances and organic solvents. To safeguard the health of employees handling these chemicals, the Group regularly conducts health checkups and environmental measurements, and modifies and improves working conditions as needed. Industrial physicians, health supervisors and other experts inspect workplaces to manage employee health.

Security and Disaster Prevention

Management System

In addition to establishing a security management system to prevent fires, explosions and leaks of hazardous substances, the DIC Group operates and maintains its facilities in line with pertinent laws and regulations. The Group also regularly conducts emergency drills.

DIC also undertakes risk assessments to ensure its ability to construct safe production facilities. In 2013, the DIC Group formulated the DIC Process Risk Management (PRM) Guidelines*. To aid in effective BCP, in fiscal year 2016 the Group identified priority risks and implemented emergency response drills.

* 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.

ΤΟΡΙΟ

DIC Wins Special Jury Award in the JCIA's 2016 Responsible Care Awards

In May 2016, DIC was presented with a Special Jury Award from the Japan Chemical Industry Association (JCIA) as part of the 10th JCIA Responsible Care Award program. The award was in recognition of the role played by DIC's Safe Corporate Climate Cultivation Working Groups in reducing the incidence of occupational accidents. The JCIA acknowledges sites, divisions, groups and individuals for outstanding initiatives and contributions under this annual program with the aim of promoting and expanding Responsible Care.

Manager in charge of safety, Saitama Plant Toshiyuki Tanaka

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Reducing Discharge of Chemical Substances

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

Principal Initiatives in Fiscal Year 2016

1 Reducing VOC Emissions

In fiscal year 2016, emissions of VOCs into the air generated by DIC amounted to 189 metric tonnes, down 9.0% from fiscal year 2015, while those by domestic Group companies, at 385 metric tonnes, were up 1.0%. The principal factor behind this increase was malfunctioning solvent recovery equipment at one site, which resulted in a decrease in the equipment's hours of operation.

Overseas, Group companies in Greater China and the Asia-Pacific region continued to promote ongoing emissions reductions. In the PRC, in particular, the Group is updating facilities and stepping up management practices in response to the tightening of regulations governing emissions of VOCs.

2 PRTR

In fiscal year 2016, the DIC Group in Japan monitored emissions of 462 class-1 chemical substances designated under the Pollutant Release and Transfer Register (PRTR) and of 89 PRTR chemical substances (other than class-1 substances) and one chemical substance group (chain hydrocarbons with up to 4–8 carbon atoms) targeted by the JCIA*. During the period, DIC and domestic Group companies used 111 and 124 of these chemical substances, respectively, in amounts exceeding 1.0 metric tonne, while emissions of such substances by the DIC Group in Japan edged up 1.0%.

* In 2014, the JCIA reviewed PRTR-designated chemical substances and revised the number of substances on its target list from 105 to 89.

3 *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. The Group is also working to reduce 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.

To reduce COD, the Group is 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.

4 Managing Water Resources

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. In fiscal year 2016, the Group continued to promote efforts to improve production processes, share information and centralize data on fresh water withdrawn, water used and wastewater discharged. Fresh water withdrawn by the global DIC Group in fiscal year 2016 rose 1.5% from the fiscal year 2015 level, to 41,528,000 m³, comprising withdrawals by the DIC Group in Japan (including the parent company) of 30,513,000 m³, an increase of 1.5%, and by Group companies overseas of 11,015,000 m³, up 1.4%. Wastewater discharged by the global DIC Group in fiscal year 2016 amounted to 37,593,000 m³, 28.0% higher than in fiscal year 2015.

Note: Regarding the scope of reporting, effective from fiscal year 2016, the scope of reporting for wastewater discharged has been expanded to include the Sun Chemical Group, which oversees DIC Group operations in the Americas, Europe, the Middle East and Africa. This change was the principal factor behind the sharp increase in wastewater discharged by the global DIC Group in fiscal year 2016. Data for the Sun Chemical Group was already included in the calculation of fresh water withdrawn.

Basic Themes

Reducing Industrial Waste

Principal Initiatives in Fiscal Year 2016

Reducing Waste Disposed of as Landfill

The DIC Group works actively 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.



In fiscal year 2016, the total volume of industrial waste disposed of as landfill by the DIC Group in Japan increased 31.8% from fiscal year 2015, to 183 metric tonnes. This was due principally to a temporary increase in sludge disposed of as landfill by the Tokyo Plant accompanying steps taken to optimize the facility's wastewater treatment process. In fiscal year 2017, all DIC Group companies in Japan will step up the implementation of measures aimed at reducing the total volume of industrial waste generated by its production facilities from the fiscal year 2016 level, while at the same time promoting zero emissions initiatives*. DIC is also collecting data for the global DIC Group with the aim of reducing the Group's impact on the environment.

* Zero emissions initiatives: DIC is promoting initiatives aimed at reducing the volume of waste disposed of as landfill by 95% from the fiscal year 2000 level.

> Environmental Impact of the DIC Group's Operating Activities

The DIC Group quantifies the environmental inputs (consumption of energy and other resources) and outputs (emissions into the environment) of its operating activities, and uses its findings to formulate comprehensive and efficient strategies for reducing its environmental footprint.

Managing Chemical Substances in Products

> Promoting the Safety of Chemical Substances and Products

Framework for Promotion

In 2009, DIC established CIRIUS (Chemical Substance Information Comprehensive Management System) for domestic products. In addition to complying with the UN Economic Commission for Europe's Globally Harmonized System of Classification and Labelling of Chemicals (GHS), CIRIUS enables DIC to provide customers with complete information on hazards associated with chemical substances, thereby helping to reduce related risks. CIRIUS centralizes the management of information about raw materials and chemicals to facilitate the provision of reliable safety data sheets (SDSs). The system also automatically checks various laws and regulations. In 2013, DIC began using the Wercs (a global SDS and label creation system developed with knowhow from DIC) for products for export. As a result, DIC now has a structure that enables it to compile GHS-compatible SDSs for all exported products that comply with national and regional laws and regulations and is accessible in relevant local languages.

> Complying with Laws and Regulations

DIC collects information on chemical substances in overseas markets to ensure that it can respond swiftly and effectively to revisions in local laws and regulations. In light of the reinforcement of regulations in the PRC, the ROK and Thailand, in fiscal year 2016 the Group positioned dedicated officers at its regional headquarters for the PRC and the Asia–Pacific region. In the United States, revisions to the Toxic Substances Control Act (TSCA) in 2016 involved a comprehensive inventory reset (review of existing chemicals on the TSCA list). In advance of the May 2018 deadline for registering existing chemical substances under the European Union's Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) regulation, DIC is registering existing exported low-volume chemical substances, i.e., those exported in volumes of up to 100 metric tonnes annually, as well as promoting ongoing efforts to respond to substance evaluations and collecting information, including that related to substances of very high concern (SVHCs).

Training in Chemical Substance Management

Recognizing legal and regulatory compliance as central to risk management for DIC as a comprehensive chemicals manufacturer, the Company endeavors to improve employees' awareness and knowledge of chemical substance regulations in Japan and overseas. In Japan, the Company provides 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., among others, and issues licenses, valid for two or three years, to employees who have passed in-house examinations. As of fiscal year 2016, 1,407 employees held a Class A license, which requires specialized knowledge, and 242 held a Class B license, which pertains to ancillary operations. A further 98 individuals had completed an advanced course demanding superior capabilities. Overseas, DIC Group companies in the PRC staged a group training session with consultants serving as instructors.

Themes that Demonstrate Unique Capabilities

Preventing Global Warming

> 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 CO₂ emissions.

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

> Principal Initiatives in Fiscal Year 2016

Formulation of a Medium-Term Target for Reducing CO₂ Emissions by Fiscal Year 2020

In October 2016, the Sustainability Committee, which is responsible for formulating the DIC Group's annual sustainability policy and activity plans, approved a new medium-term target for the reduction of CO_2 emissions. In line with this target, the Group will work to achieve an average annual decrease of 1.0% with the aim of realizing a 7.0% reduction from the fiscal year 2013 level by fiscal year 2020.

2 Energy Consumption and CO₂ Emissions by the Global DIC Group

Despite a 2.4% increase in production volume, as a result of which energy consumption by DIC Group companies worldwide rose 2.5%, to the equivalent of 293,577 kiloliters of crude oil, compared with 286,392 kiloliters in fiscal year 2015, global CO_2 emissions remained essentially level at 659,378 metric tonnes, compared with 658,811 metric tonnes. The principal factors behind these increases included the start of full-scale operation of a new cogeneration system at the Kashima Plant, efforts to achieve an appropriate balance of renewable energy sources and the implementation of energy-saving initiatives at various sites. In contrast, CO_2 emissions per metric tonne of production (" CO_2 emissions per unit of production," expressed in terms of kilograms of CO_2 per metric tonne of production) declined 2.3% in fiscal year 2016, to 338.0 kg/metric tonne, from 345.8 kg/metric tonne in fiscal year 2015, a decrease of 2.0% from fiscal year 2013, the Group's current base year.

Global CO₂ Emissions in Fiscal Year 2016



CO₂ Emissions in Fiscal Year 2016 by Region



3 Energy Consumption and CO₂ Emissions by the DIC Group in Japan

In fiscal year 2016, the DIC Group in Japan—encompassing the 54 sites of DIC Corporation and domestic DIC Group companies—reported a 1.2% increase in production volume and a 1.4% increase in energy consumption from fiscal year 2015. In contrast, CO₂ emissions declined 3.4%, while CO₂ emissions per unit of production were down 4.5%. The principal factors behind these decreases included the start of full-scale operation of a new cogeneration system at the Kashima Plant, efforts to achieve an appropriate balance of renewable energy sources (biomass boilers, wind power and solar power) and the implementation of energy-saving initiatives at various sites, including developing a system that measures, monitors and verifies waste and irregularities in energy use that has been rolled out at DIC sites across Japan. In addition, a system to enhance visibility that also analyzes energy consumption during different production processes was installed at the Chiba, Kashima and Sakai plants to reproduce optimum yields for materials inputs. In fiscal year 2016, DIC installed a more advanced version of the system at the Yokkaichi Plant.

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

The DIC Group in Japan is advancing the systematic adoption of cogeneration in Japan. With cogeneration systems already in operation at five domestic plants (Chiba, Shiga, Saitama, Gunma and Tokyo), in late 2015 DIC installed a natural gas turbine–powered cogeneration system with a capacity of 1,700 kW at its Kashima Plant. In April 2017, the Group replaced the existing cogeneration system at its Chiba Plant, which had a capacity of 6,000 kW, with a new high-efficiency 3,800 kW capacity system.

The DIC Group also actively promotes the use of energy from renewable sources. At the Kashima Plant, the Group aims to achieve an optimal power mix of purchased electric power, electric power produced through cogeneration systems and electric power generated using renewable energy, by combining a biomass boiler (generating capacity: 4,000 kW and 30 tons of steam per hour) with two wind power facilities (each with a generating capacity of 2,300 kW) and a solar power generation system (100 kW).

In fiscal year 2016, electric power generated in Japan using cogeneration systems and other independent means amounted to 70,140,000 kW, representing 25.6% of total energy consumed by the DIC Group in Japan.



CO₂ Emission Reductions at Kashima Plant (January–December 2016)



TOPIC

Project Launched at Karawang Plant to Explore the Use of Coconut Shells as an Alternative to Coal that Will Help Reduce CO₂ Emissions

As a part of the DIC Group's global environmental management efforts, specialists from the Production Management Department visit production sites in the PRC and the Asia–Pacific region every year to assess progress in the promotion of management systems and follow up on improvements.

Capitalizing on Indonesia's Position as a Coconut Producer to Promote a Unique Breakthrough

One issue that was identified through this process is the considerable amount of CO₂ emissions at the Karawang Plant of Indonesian subsidiary PT. DIC Graphics, which primarily uses coal. Because output at the plant, which produces organic pigments, continues to rise sharply, reducing energy consumption and finding low-carbon fuel sources is a critical challenge. To this end, the plant kicked off a CO₂ emissions reduction project that has focused on exploring low-carbon alternatives to coal. One particularly promising candidate identified was coconut shells, which are left over after the extraction of coconut oil and other products. Japan currently imports coconut shells as part of an effort to replace a portion of fuel used in coal-fired electric power generating facilities with biomass. Indonesia is the world's second-largest producer of coconut oil, so coconut shells are easy to secure in large quantities. Tests confirmed that coconut shells, the calorific value of which is approximately 5,000 kCal/kg, could be used together with coal in a mixture of up to 80–20 with no impact on boiler operation. The Karawang Plant plans to continue testing a 90–10 mixture, which DIC estimates would facilitate a reduction in the plant's annual global CO₂ emissions of approximately 10%.



Carawang Plant boiler



Coconut shells to be used as fuel

Reducing CO₂ Emissions by Installing New Solar Panels (Siam Chemical Industry Co., Ltd.)

Siam Chemical Industry in Thailand manufactures and sells a broad range of polymer products, including acrylic, amino and polyurethane resins, and has seen a sharp increase in demand for acrylic coating resins, underpinned by increases in automobile production. The use of renewable energy is attracting considerable attention, thanks to, among others, tax breaks offered by the Thai government. Against this backdrop, in fiscal year 2016 the company installed new solar panels with a combined capacity of 704 kW to produce electric power for its own use. The new facility is expected to commence operation in late July 2017.

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Switching from Light Oil to Biomass Boilers (Hainan DIC Microalgae Co., Ltd.)

Hainan DIC Microalgae is DIC Group company DIC Lifetec Co., Ltd.'s Spirulina production facility in the PRC. The company produces Spirulina, which is attracting attention as a superfood, and Spirulina-derived natural food colorings. Until recently, the facility used light oil boilers to produce steam, which is necessary for its production processes. In October 2016, the company replaced its light oil boiler with a biomass boiler fueled with waste rubber tree timber from forest thinning. This move resulted in a 1,250 metric tonne reduction in the facility's annual CO_2 emissions, a decline of 44.0% from the previous fiscal year This initiative also accounted for a 1.8% reduction in the Group's annual CO_2 emissions in Greater China.



Siam Chemical Industry (Thailand)



Biomass boiler

Hainan DIC Microalgae' s general manager, Hideyuki Tsuda

Basic Themes

Themes that Demonstrate Unique Capabilities

> Basic Policy and Framework for Promoting Initiatives

DIC's commitment to promoting Responsible Care encompasses initiatives aimed at ensuring safety in logistics, that is, at lowering chemical risks associated with the distribution of chemicals, and at reducing CO₂ emissions attributable to the transport of its products. Accordingly, the Company sets annual targets and promotes a variety of initiatives. With the aim of better responding to social imperatives associated with the transport of chemicals, in January 2016 DIC combined the logistics components of its various departments to create an independent Logistics Department. As consignor, the new department, which comprises three sections—domestic planning, overseas planning and the global trading group—is charged with formulating logistics policies and promoting efforts to enhance efficiency, as well as with coordinating with partners, that is, third-party logistics (3PL) firms* providing complete outsourced logistics services, to further enhance safety and reduce environmental impact.

* 3PL: Firms that provide partial or complete outsourced logistics services.

Safety Management in Logistics

The firms to which the DIC Group outsources logistics use containers that comply with the transportation laws. The Group supplies information needed to display labels complying with GHS as well as provides SDSs and other documentation to ensure safe shipping worldwide. In Japan, the Logistics Department meets regularly with logistics firms to discuss measures for improving the safety of both loading and transport work.

The Logistics Department also inspects operations at the offices of logistics partners located on-site at its 20 main domestic production facilities. In fiscal year 2016, inspections were implemented at seven of these offices, after which issues were pointed out and improvements confirmed. DIC endeavors to maintain and enhance safety by requiring transport personnel to carry Yellow Cards* to ensure proper responses in the event of an emergency.

* Yellow Cards are part of activities recommended by the Japan Chemical Industry Association (JCIA). The cards contain information about the right actions to take if an accident occurs. They provide 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.

> Reducing Greenhouse Gas Emissions Attributable to Logistics

In fiscal year 2016, CO₂ emissions attributable to logistics and energy consumption for the same purpose decreased 1.0%. In contrast, owing to a decrease in the volume of products shipped by truck, which caused the efficiency of truck transport to deteriorate, energy consumption per unit of production attributable to logistics rose 2.0%. In this environment, the volume of products shipped using modes of transport qualifying as "modal shift" rose 8.0%, as shipments by container ship remained level, while shipments by rail climbed 14.0%. Principal factors behind the increase in the volume of products shipped by rail included the combining of lots and the purchase of containers as part of an effort to encourage use of this mode. As a consequence, the DIC Group's modal shift rate was 9.3%, up from 8.3% in fiscal year 2015. The Group will continue to promote modal shift, as well as to explore remedial measures for truck transport, including increasing load factor.

Quality

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



Enhancing Product Quality and Customer Satisfaction

DIC's Quality Policy

"Contribute to the prosperity of customers and society by consistently providing reliable products" (Updated in May 2015)

> Framework for Implementation

To better leverage its agility and comprehensive capabilities, DIC has established a matrix-like quality management configuration that positions product divisions on the vertical axis and the Technical Administrative Division and Production Administrative Division on the horizontal axis. DIC has also introduced a quality management system (QMS) based on ISO 9001—the International Organization for Standardization's benchmark for such systems—in product divisions and subsequently earned ISO 9001 certification for all of its production facilities. The Company capitalizes on this QMS, as well as on two other management systems, to promote ongoing efforts to enhance quality.

DIC's quality assurance configuration divides product quality into two functions: Product quality across the entire DIC Group, which is the responsibility of the Quality Assurance Department, and product-specific quality management, which is overseen by product division quality assurance sections to facilitate prompt and appropriate quality management. By thus dividing Groupwide and product-specific quality management, DIC has positioned itself to advance close communication among these departments and to secure product quality.

The Quality Assurance Department implements regular product quality audits of DIC Group companies in Japan to ensure that quality management is functioning effectively, as well as to lift product quality levels, thereby ensuring customer satisfaction.

1 Initiatives Aimed at Increasing Customer Satisfaction

To ensure its ability to provide high-quality products that customers feel secure using, DIC promotes a variety of quality improvement initiatives during product planning, design and development, the procurement of raw materials and sales. Meticulous risk evaluation is conducted at the design review stage to guarantee safety.

2 New Efforts to Enhance Product Quality-Related Educational Initiatives

DIC recognizes the importance of ensuring that employees maintain a high awareness of quality, as well as a constant commitment to achieving further quality improvements and upholding high quality standards. To this end, the Company provides education regarding product quality to all DIC Group employees at specific times, including through training for those newly promoted. In fiscal year 2016, DIC also began offering training led by external experts in the field for employees involved in quality management. To date, a total of 45 individuals have participated in such training.

Human Resources Management

Working to Enhance Job Satisfaction

SDGs Goals 3, 4, 5, 8 and 10





91.3%

91.7%

91 4

32

8

0.3%

0.2%

0.3%

4∕€

Respect for Human Rights

The DIC Group supports global codes governing human rights. The DIC Group Code of Business Conduct lays down provisions prohibiting human rights violations and requiring respect for diversity and mandates voluntary human rights and labor practices inspections. Domestic and overseas Group companies support the UNGC's 10 principles, which include tenets regarding human rights and labor. The Company continues to implement related initiatives in all areas of its corporate activities to reinforce respect for human rights in the human resources management practices of all Group companies and prevent violations from occurring. In response to the Modern Slavery Act 2015, DIC is reinforcing training regarding supply chain due diligence.

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. A total of 67.6% of parent company employees belong to the DIC Employees' Union. (100% of nonmanagerial employees are union members.)

Global Human Resources Management

With the rapid expansion of its global operations, DIC recognizes the importance of fostering human resources and creating an environment that encourages cross-border career advancement and mobility. To these ends, the Company has sought to further develop harmonized promotion, personnel evaluation and remuneration systems, the cornerstones of its global human resources management framework for DIC Group companies under its jurisdiction. Having unified personnel evaluation systems for executives in Japan, the PRC and the Asia-Pacific region, as well as created a human resources database, DIC is promoting systematic efforts to cultivate executives, including introducing specialized management training and systematic training programs. Through such efforts, the Company is striving to create a structure that allows it to cultivate executives that best suit its needs without regard for nationality.

Fiscal year 2014 Fiscal year 2015 Fiscal year 2016 Fiscal year 2014 Fiscal year 2015 Fiscal year 2016 (Fiscal year 2011 hires) (Fiscal year 2012 hires) (Fiscal year 2013 hires) Male 2,876 2,898 2,653 95.7% Male 91.2% Female 666 683 660 Female 100% 100% 3,542 3,581 .313 Total Total 92.6% 96.5% 42.2 42.2 41.9 Male 23 37 39.8 40.3 Male Female 40.6 Average age voluntary) number of 7 8 Female Total 41.7 41.8 41.6 45 30 Total 18.2 17.8 18.2 Male Average 0.8% 1.3% years of Male 17.4 17.7 18.5 Female 18.1 18.1 Female 1.1% 1.2% Total 18.2 voluntary) Total 0.9% 1.3% 72 75 Male 38 New graduates Female 19 20 14 hired Total 91 95 52

Basic Personnel Statistics(DIC)

Ensuring Fair and Consistent Treatment

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

Remuneration and personnel evaluation 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 management by objectives (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.

2 Fostering Human Resources to Reinforce Front-Line Capabilities and Accelerate Change

Having recognized fortifying its Group organizational capabilities and enhancing the skills of its people as important challenges, DIC has declared the medium-term focus of its human resources development program as being to nurture human resources capable of reinforcing front-line capabilities and accelerating change.

DIC's training system comprises programs in six categories. These programs are based on curricula that emphasize a systematic approach to helping each employee acquire critical skills. In fiscal year 2016, training emphasized the concepts of "global" and "diversity," with training to improve English-language skills expanded and Japanese-language training for non-native speakers and entry-level education for mid-career hires added.

DIC Training Programs

Management- level training	Promote globalization, strengthen/foster the ability of management-level employees to deal with risks	DIC Management School, media training
Global human resources development	Systematic efforts to foster managers and employees of overseas Group companies, enhance the skills of Japanese employees assigned to overseas posts, improve the Japanese-language abilities of employees who are not native speakers	Global Management (preparatory training for employees assigned to overseas posts), Global Challenge Program, Target Global Program (training to enhance English-language communication skills), Effective E-Mailing (training in how to compose e-mails in English), Japanese- language training for employees who are not native speakers
Level-specific training	Education and training to equip employees with the skills to fulfill responsibilities at each level	Qualification-specific training (J, M, S, senior); training tailored to different management ranks
Department- and job-specific training	Education and training to enhance capabilities required by different departments and jobs	Human resources development programs tailored to production departments (Kaizen Skill Improvement Training Program, others), technical departments (training to support the ability to propose R&D themes, others), sales departments (training to cultivate proposal development capabilities, others) and support departments ("why-why analysis" training, others)
On-the-job training	Hands-on training in the workplace to foster employees and cultivate skills	Workplace-specific on-the-job training, domestic technical department trainee program, Overseas Trainee Program, Global Capability Development Program
Self development	Support for employees seeking to enhance their skills	Correspondence courses, e-learning courses, in-house seminar courses, Skype-based English conversation courses, preparatory courses for the TOEIC Institutional Program (IP) Test

> 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.

Hiring Diverse Human Resources

With the objective of securing talented individuals with advanced specialized capabilities, global perspectives and language capabilities, DIC actively promotes the hiring of international students completing undergraduate or graduate studies at Japanese universities; Japanese and foreign nationals completing undergraduate or graduate studies at overseas universities; and experienced mid-career candidates with extensive experience and expertise. At present, 40 foreign nationals work in various capacities at DIC. Fiscal year 2016 new hires included 10 foreign nationals.





L'on

the DIC Group

Polymer Processing Technical Group 2, Polymer Processing Technical Division, Chiba Plant Jia Ying

I will work to increase my product knowledge with the aim of playing an active role in product development.

When I began hunting for a job as I was getting ready to graduate, DIC held a recruitment event at my university. I was really impressed by the pleasant atmosphere and by the impression they gave of being emphatically open to hiring foreign nationals. So even though I am not Japanese, there was no uncomfortable pressure on me because of that when I entered the company. My job is in the area of PPS product development and the provision of technical services to customers. My responsibilities currently involve performing comparisons with materials produced by competitors and identifying the causes of quality problems. When I first joined the company, I could read and comprehend the content of various forms and documentation I dealt with, but my spoken Japanese was not so great, so many minute nuances went over my head and I found verbal communication a challenge. My on-the-job training supervisor was so kind and always responded patiently no matter how many questions I asked! Everyone in my department is friendly, too, so I really enjoy working here. I look forward to increasing not only my language

skills but also my product knowledge, and to playing an active role in PPS product development. (Ms. Ying is originally from Zhejiang Province in the PRC.)

2 Expanding Career Opportunities for Women

*1 "C3" represents the three "Cs" in "childcare" and "career."

In line with its commitment to promoting diversity, DIC implements a variety of initiatives to expand career opportunities for female employees. Since launching a full-scale program with this objective in 2007, the Company has pushed ahead with measures to transform the mindset of all employees and its corporate culture, provide education designed to encourage the drive and determination of female employees and broaden the range of jobs open to women. In fiscal year 2015, DIC established the C³ ("C Cubed")*¹ Advisor System, whereby 12 female employees with experience in handling the demands of career and childcare are appointed to advise their juniors who are currently taking childcare leave on ways to maintain an effective balance once they return to work. In fiscal year 2016, the Company held the Women in DIC Forum, an event devoted to the issue of career opportunities for female employees.

The Company will continue working to broaden the range of jobs open to women, including studying the introduction of a telework^{*2} system. Through such efforts, the Company aims to boost the percentage of management positions occupied by female employees, with a target of 8.0% by fiscal year 2020. DIC will also continue working to expand its recruitment of new female graduates from technical schools and bachelor's and master's degree programs, both sources of talented human resources. DIC has also formulated an action plan based on Japan's Act on Promotion of Women's Participation and Advancement in the Workplace.

*2 Telework is a work arrangement that enables employees to work at home or another remote location using ICT, eliminating the time and location

Female Employees in Management Positions





Basic Themes

constraints of traditional work arrangements.

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3 Advancing the Employment of Individuals with Disabilities

DIC is committed to creating inclusive work environments that help individuals with disabilities enjoy active and fulfilling careers. One initiative, which began in fiscal year 2015, is an internship program, organized in collaboration with a facility providing support for individuals with intellectual disabilities, designed to transition into part-time employment. At the beginning of fiscal year 2017, three program participants were offered clerical positions.

As of December 31, 2016, individuals with disabilities accounted for 2.04% of DIC's total labor force, in line with Japan's legally mandated quota of 2.0%. Going forward, DIC will continue striving to enhance work environments and increase workplace accessibility with the aim of lifting this figure to 2.2% by fiscal year 2018.



Initiatives that Support a Healthy Work–Life Balance

DIC views work-life balance as essential to both self-realization and sustainable corporate growth. Believing that greater productivity is key to creating workplaces that are conducive to job satisfaction, 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.

1 Enhancing Programs that Help Employees Balance the Demands of Work and Home

In 1986, DIC blazed a trail for chemicals manufacturers in Japan by implementing a childcare leave program. Having established work and childcare balance support programs that exceed legal requirements in 2007, the Company continues promoting measures that make it easier for employees to make use thereof. DIC has also deployed a system that gives regular employees the option to accept or refuse transfers requiring relocation. In 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 individuals who are unable to accept transfers that involve relocation because of childbirth, childcare, nursing care or other responsibilities to effectively balance their professional and private lives, reduce overtime hours, encourage the taking of annual paid leave and promote health management.

To encourage use and promote knowledge of its leave programs, in fiscal year 2017 DIC published the Childcare and Nursing Care Handbook, to reflect revisions to Japan's Child Care and Family Care Law in 2016. This was followed up with an employee awareness campaign that began in June 2017.

Number of Employees Using the Childcare Leave and Leave to Assist with Parenting Programs

	Fiscal year 2014	Fiscal year 2015	Fiscal year 2016
Number of employees using the Childcare Leave Program	28	29	35
Number of employees using the Leave to Assist with Parenting Program	63	64	62

Thanks to the introduction of various systems and the creation of an environment that encourages employees to make use thereof, the percentage of DIC employees who return to work after taking leave is currently 100%. In addition, awareness of the Company's Leave to Assist with Parenting Program among male employees has risen, underscored by the fact that more than 67.4% of eligible employees took advantage of this program in fiscal year 2016. Underscored by efforts to enhance these systems, the average years of employment for female employees in fiscal year 2016 was 18.5 years, exceeding the average for male employees, which was 17.8 years.

2 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. 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.

Caring for Mental Health

DIC takes steps to create environments in which employees can feel secure and works to ensure that its labor management practices comply with legal requirements. The Company places a particularly high priority on caring for psychological and emotional well-being and has established a comprehensive mental health program, engaging an in-house occupational psychologist, encouraging awareness as a way of warding off mental health problems and providing support to ensure a smooth return to work for employees taking leave. Access to counseling from an occupational psychologist has had a particularly positive impact in terms of ensuring employees get treatment and are able to return to work as soon as possible.



Kokoro no Kenko ("Psychological Health") self-check handbook

DIC has also offered voluntary stress checks since fiscal year 2013. Looking ahead, the Company will continue to promote active, systematic efforts with the goal of preventing mental health disorders in accordance with related legislation passed in Japan in fiscal year 2016.

Mental Health Initiatives

- Guidance from an in-house occupational psychologist
- (engaged as an occupational physician since fiscal year 2012)
- Internal and external help desks
 Line-care training* for supervisors

- Mental health self-checks as a part of training for new employees
 - Distribution of Kokoro no Kenko ("Psychological Health") self-check handbook to all employees
 - · Flexible process to support employees returning to work after 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.

Sustainable Procurement

Ensuring Extended Supply Chain Functions in a Socially Responsible Manner

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



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The DIC Group CSR Procurement Guidelines

- Compliance with laws and social norms
- Respect for human rights and consideration for work environments
- Safety and hygiene
- Promotion of sound business management
- Consideration for the environment 6

- 6 Information security
- 7 Appropriate quality and safety and improved technologies
- Flexible attitude to ensure stable supplies and respond to change 8
- Contribution to local communities and society 9
- 10 Promoting CSR and deploying it in the supply chain

Promoting CSR Procurement

DIC has formulated the DIC Group CSR Procurement Guidelines, a series of requirements pertaining to ESG-related imperatives, including the management of chemical substances in and reduction of the environmental impact of raw materials, as well as respect for human rights across its entire supply chain. With the aim of compelling suppliers to observe these guidelines, the Group conducts assessments and on-site inquiries in accordance with the DIC Group Supply-chain CSR Deployment Guidebook. (Version 2 of the guidebook was published in July 2013.) These efforts have proven effective in enabling the Group to reinforce relations with its suppliers.

Analyzing the Results of Questionnaires

From November 2013 through December 2016, the DIC Group conducted assessments for 682 suppliers using version 2 of the DIC Group Supply-chain CSR Deployment Guidebook,

accounting for 90%-plus of its procurement spending. The Group analyzed and assessed questionnaire responses, providing feedback to all 682 suppliers and requesting corrective measures for significant issues through on-site inquiries or written comments.

Feedback provided

Cumulative number of suppliers assessed (November 2013–December 2016)





Assessment Distribution Chart (682 Suppliers)



Note: Based on DIC's analysis of questionnaire responses, 91% of suppliers assessed to date scored 3.0 or higher on the Group's 5.0-point scale

Conducting On-Site Inquiries to Advance CSR

From fiscal year 2011 through fiscal year 2016, the DIC Group conducted on-site inquiries for 55 suppliers. The objective of these inquiries is to help suppliers further their understanding of CSR.

Global Procurement Initiatives

In fiscal year 2016, procurement departments in Japan, Greater China and the Asia-Pacific region collaborated to conduct CSR procurement assessments for and provide feedback to materials suppliers in core businesses. DIC also conducted on-site inquiries for six suppliers in Greater China, working with these suppliers to fortify their understanding of issues related to local environmental regulations, and of environmental issues in the supply chain related to local legal and regulatory compliance, as well as to implement corrective actions.



On-site inquiry at a supplier in the PRC

VOICF Group Purchasing, DIC (Shanghai) Co., Ltd. Kevin Ke



My job is in the purchasing of materials for DIC Group companies in Greater China. I have gained extensive know-how in the area of CSR through in-house training, among others, and have been actively involved in promoting CSR among suppliers. One of the biggest challenges has been finding an easy-tounderstand way to explain the need for CSR to suppliers, because it is not easy to fully grasp actual initiatives based on responses to supplier self-evaluation questionnaires. In fiscal year 2016, we conducted on-sight inquires for six suppliers in Greater China. While the standards for these inquiries centered on traditional concerns, namely, quality, cost and delivery, we explained to suppliers the need to give consideration to ESG in advance and secured their understanding. We also exchanged opinions with suppliers regarding CSR initiatives. When we discovered particularly outstanding initiatives being implemented by suppliers, as well as when we felt suppliers' understanding of CSR fell short, we introduced DIC initiatives as case studies. This has allowed us to build win-win relationships with suppliers that I am confident will underpin sustainable growth for all concerned going forward.





Cultivating Next-Generation Businesses

SDGs Goals 8, 9 and 11

Promoting Businesses that Respond to Future Social Imperatives

One of the central strategies of the DIC Group's current medium-term management plan, DIC108, is to create next-generation businesses. The Group is responding to this challenge through the cultivation of business models that address social imperatives.

For example, one of the principal objectives behind efforts to expedite the development of electric vehicles (EVs) is the need to address increasingly crucial issues such as global warming and the depletion of fossil fuels. However, the practicality of EVs depends on resolving a number of key technological challenges, notably increasing the capacity of storage batteries and developing new power semiconductors, battery charging devices. The DIC Group conducts tireless research aimed at addressing such technological challenges, and is developing innovative materials and systems for storage batteries, power semiconductors and sensors, among others, that will yield concrete, viable solutions, thereby contributing to sustainability. The Group will continue to promote business activities with roots in the needs of society with the aim of further evolving its business models.

> Examples of Optimized Business Models that Respond to Social Imperatives

1 Linablue[®] Natural Blue Food Coloring: Contributing to Food Safety

The DIC Group's health foods business centers on Spirulina, a cyanobacteria rich in vitamins and minerals that contributes to a balanced diet. Spirulina also absorbs CO₂ as it grows, thus helping to reduce CO₂ in the air. The Group also produces and markets *Linablue*[®], a Spirulina-derived natural blue food coloring that is the only natural food coloring approved as safe by regulatory authorities in the United States and Europe, as well as Japan. The Group will continue to actively promote the expansion of markets for *Linablue*[®] as a product that responds to a variety of social imperatives.

2 PASLIM Oxygen–Barrier Adhesive: Keeping Food Fresh Longer

With the aim of realizing more functional packaging materials that help reduce food loss and of contributing to the conservation of packaging resources, DIC developed *PASLIM*, an adhesive that prevents oxygen permeation. The Company continues to promote the development of packaging materials that improve the barrier properties of food packaging with the aim of extending product shelf life, thereby reducing food loss in distribution, retailing and consumption, and conserving packaging resources.

3 Plastics Products: Safeguarding Lifestyles

In addition to manufacturing and selling a broad range of plastics products in line with its ultimate objective of safeguarding lifestyles, DIC Group company DIC Plastics, Inc., is an active proponent of environment-friendly business practices, particularly material recycling*. Among the company's noteworthy achievements is its development of a system for sorting waste plastics, generated during the manufacture of original products, by type and color, which 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. *Material recycling involves the recycling of material from an original application but in a different form.

Anticipating Trends and Promoting Efforts to Identify and Cultivate Promising New Markets

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 six key areas—resources, materials and energy; logistics and industrial equipment; electronic and electrical equipment; pharmaceuticals 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 key 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. Such efforts have demonstrated considerable demand for building materials



Sheet-form heat storage material

that contribute to more energy-efficient, comfortable and healthy homes. Materials that absorb and dissipate heat work to maintain a comfortable room temperature, reducing energy used for heating and cooling. One issue with conventional heat storage agents is oozing and leakage when they change from solid to liquid form, making the incorporation of such agents into building materials a key challenge. DIC has succeeded in leveraging its proprietary technologies to develop a sheet-form heat storage material that can easily be laminated together with a variety of building materials. The new material exhibited effectiveness in a demonstration project implemented by the New Energy and Industrial Technology Development Organization (NEDO) in fiscal year 2016. DIC is currently in the process of obtaining Japan Industrial Standards (JIS) certification, among others, with a view to gaining wide market acceptance.

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. The Group is taking active steps to reinforce and expand its presence in key Asian markets, which are expected to see significant growth going forward, focusing particularly on core businesses, while at the same time broadening its reach to include emerging economies in Eastern Europe, South America and the Middle East, with the aim of driving further growth.

∞ New Technology Development and Value Creation

Proposing Solutions that Leverage Elemental Technologies

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

SDGs Goals 9 and 12

'/=:)

Achieving Sustainable Growth

With the aim of achieving its Color & Comfort by Chemistry management vision, the DIC Group is leveraging its basic technologies, including those in the areas of optics and color, organic molecular design, polymer design and dispersion, as well as its core 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 by integrating technological resources originating across the Group, as well as actively promoting open innovation, to drive sustainable growth.

Specific Initiatives and Achievements

The DIC Group is promoting the development and use of clean technologies. The Company is encouraging a shift toward materials with reduced environmental impact-notably energy-saving, water-based and solvent-free materials, as well as materials for the electronics, automotive, packaging and other industries-that improve the environmental performance of the products in which they are used, which it has positioned as environment-friendly products.

The DIC Group's R&D Configuration

A Global R&D Configuration that Underpins Product Development

The DIC Group's global R&D bases work as one to promote R&D aimed at realizing new technologies and products. DIC's Technical Administrative Division and Corporate R&D Division cooperate with the R&D components of DIC Group companies around the world. These include DIC Graphics Corporation; the Sun Chemical Group's research centers in the United States, the United Kingdom and Germany; Qingdao DIC Finechemicals Co., Ltd., which conducts comprehensive R&D tailored to market needs in the PRC; printing inks technical centers (Asia-Pacific region and the PRC); polymer technical centers (Asia-Pacific region and the PRC); and PPS technical service centers (PRC and Germany). In addition, an algae research center in the United States capitalizes on the Group's accumulated expertise as a producer of Spirulina to conduct comprehensive algae-related research in areas ranging from cultivation to practical application.



Universities and research organizations in Japan and overseas, national projects (Japan)

Promoting Environment-Friendly Products

The DIC Group is committed to effective stewardship of the products it provides. (For related information, please see page 57 of the complete version of the DIC Report.) 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. The Group has established internal rules for designating products "environment-friendly" and works to increase the weighting of products that have earned this designation in their portfolio. In fiscal year 2016, environment-friendly products accounted for 56% of all products put out by DIC and subsidiary DIC Graphics. The Group also strives to maintain a solid grasp of laws and regulations in different countries and territories, and of trends in environmental measures-thereby ensuring its ability to design products that comply with diverse regulations governing the use of chemical substances in different markets-and conducts environmental assessments on a continuous basis.

For printing inks, adhesives and other products used in food packaging, which the Group supplies to customers around the world, the DIC Group has established a global product stewardship team. The team shares information on regulations and relevant topics from different markets, as well as promotes awareness thereof and provides education. Knowledge thus gained is incorporated into product design and used to produce compliance certificates across the supply chain, which are essential for customers worldwide.



Assistant Manager, Polymer Technical Group 5, Polymer Technical Division 1 Takeshi Ibe

We are addressing the challenge of developing next-generation technologies from the perspective of chemistry.



With the trend toward ever-higher levels of miniaturization, sharp increases in fabrication processes and costs have become a key issue for semiconductor manufacturers. DIC's Corporate R&D Division recently developed a resin that is appropriate for resists used in nanoimprint lithography (NIL), a technology that shows promise as a next-generation semiconductor fabrication process. with NIL, control of the unique organic-inorganic hybrid compound structure used facilitates rapid curing and superb etching resistance, significantly

streamlining fabrication. We will continue to leverage the wealth of technologies we have amassed as a manufacturer of fine chemicals to address nextgeneration challenges and promote sustainable development.

Harmony with the Community and Social Contributions

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

SDGs Goals 3 and 4



Adding Color & Comfort to Lifestyles

> Examples of Recent Initiatives

Visiting Science Lab Program

Comment

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 and DIC Graphics 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. The DIC Group's visiting science lab program was nominated and won gold in the 2016 Education Support Grand Prix, sponsored by Tokyobased Leave a Nest Co., Ltd.



Visiting science lab

This is a model for educational support efforts by B-to-B companies

DIC's visiting science lab program won gold in our 2016 Education Support Grand Prix. DIC's initiative stood out among nominated programs from more than 100 other companies because rather than being an effort centered on advertising potential or boosting sales, it is an initiative that genuinely seeks to contribute to society. This approach earned high marks. Also worthy of praise is the fact that the program instructors who visit schools in the vicinity of DIC sites are trained researchers who do so as part of their regular work duties. Participation in the program is actually factored into employees' performance reviews. DIC's view of the program as a crucial initiative and active steps to position it as such serves as a model for educational support efforts by B-to-B companies. I look forward to DIC continuing to promote efforts that both support education for the next generation and foster the skills of its own employees.



Representative of the jury, Education Support Grand Prix General Manager, Leave a Nest Education Research Institute Daigo Fujita

Initiatives Led by the Central Research Laboratories

The Central Research Laboratories offer a variety of programs in such uniquely DIC topics as synthesis and chromatics to the students of local schools. In October 2016, students from Seishin Gakuen High School in Ibaraki Prefecture—a 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 featured experiments and a hands-on lesson on the use of laboratory equipment. The young researchers who serve as lab instructors also incorporated a career education component, taking time to talk to students about how they became interested in science and the challenges and rewards of being a researcher.



Lab lesson for students of Seishin Gakuen High School

* 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 MEXT's official guidelines with the aim of fostering the next generation of talented engineers and scientists.

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 2017, the museum celebrates its 28th anniversary. The museum's extensive collection spans numerous genres, encompassing works by Rembrandt; Impressionists such as Monet and Renoir; modern European artists such as Picasso and Chagall; early modern, modern and postwar Japanese artists; and luminaries of late-20th century American art, including Mark Rothko, Cy Twombly and Frank Stella. 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 literary works and other artifacts that evoke the cultural atmosphere at the time 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 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 that serves as an exhibition space for local amateur artists and is also made available to elementary and junior and senior high schools in the Sakura area for an exhibition of local students' works.



Kawamura Memorial DIC Museum of Art

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 2016 drive and matching gift program were donated to 20 children's homes and facilities providing support for disabled individuals.

Core and Category-Specific Themes

****** Communication with Stakeholders

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



Promoting Disclosure and Communication

The DIC Group places a priority on communication with its stakeholders worldwide, as outlined in Article 7 of its Policy on Corporate Governance.

Article 7 (Ensuring Appropriate Information Disclosure and Transparency)

The Company shall ensure transparency and fairness; and in order to gain the correct understanding and trust from stakeholders, shall timely and appropriately disclose information relating to matters such as the DIC Group's management philosophy, management policies, business plans, financial condition and sustainability activities.

	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	Websites Product pamphlets Corporate profile DVDs DIC Report Corporate PR film Television advertisements	Websites Press conferences Quarterly results announcements Vuka Shoken Hokokusho (financial disclosure document required of listed companies in Japan) Shareholder newsletters Corporate profile DVDs DIC Report Corporate PR film Television advertisements	Websites Site reports Corporate profile DVDs DIC Report Television advertisements	 DIC Plaza (in-house newsletter) Intranet DIC Packet Book (in-house Group data file) DIC Report Corporate PR film 	Press conferences Interviews with journalists DIC Report Television advertisements
Opportunities for communication	 Sales activities Participation in exhibitions 	General shareholders' meetings Results presentations IR conferences IR meetings OIC IR Day	 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



DIC Plaza in-house newsletter

(February 2016)

Basic Themes

Core and Category-Specific Themes

DIC Group Milestones

1908 **Established** as Kawamura Ink Manufactorv

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



Dragon product trademark



DIC's founder, Kijuro Kawamura

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)



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.



Promotes expansion of printing inks business

1973

Establishes the

Diversifies operations by building on base in printing inks, organic pigments and synthetic resins Actively introduces technologies from overseas and promote further diversification

Sustainability Initiatives

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.



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 lower energy consumption.



2006

Becomes signatory to the Responsible Care Global Charter Signs the CEO's 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.



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.

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 a leading name in the 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.

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.

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

2016

Launches DIC108 medium-term management plan

Sets forth a growth scenario aimed at realizing sustainable growth and outlines what DIC must do between now and fiscal year 2018.

2016

Introduces branding program

Introduces new branding program based on the Group's "Color & Comfort" brand slogan, which sets forth three corporate values, and in October airs a new television advertisement



Brand advertisement for television

Prepares for a new phase of growth

Seeks to advance globalization of core businesses and diversify into new areas

2010

responsible corporate entity.

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

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."



2015

Selected for inclusion in the **Dow Jones Sustainability** Indices Asia Pacific Index Included for the first time in the DJSI Asia Pacific Index, a global family of indices for socially responsible investing and a benchmark of global sustainability.

Included again in 2016. MEMBER OF **Dow Jones** Sustainability Indices

In Collaboration with RobecoSAM 🧆

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.



protection and expands global presence

Takes steps to advance environmental

Third-Party Verification





Mr. Yoshiyuki Nakanishi Representative Director, President and CEO DIC Corporation

Objective

SGS Japan Inc. (hereinafter referred to as "SGS") was commissioned by DIC Corporation (hereinafter referred to as "the Organization") to conduct independent verification based on criteria of verification (ISO 14064-3: 2006 and the SGS verification protocol) regarding the data prepared by the Organization on the scope of verification (hereinafter referred to as "the assertion"). The objective of this verification is to confirm that the assertion in the Organization's applicable scope has 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 at 12 DIC parent company sites (including 3 offices and 1 laboratory), 42 domestic Group companies (including 18 offices and laboratories), and 188 overseas Group companies.

GHG emissions included in this performance data are Scope 1, Scope 2, and Scope 3: category 5. The performance data of Scope 1 and Scope 2 include CO_2 emissions from energy consumption at DIC parent company sites, and domestic and overseas Group companies, and CO_2 emissions from non-energy consumption at DIC parent company sites and domestic Group companies.

The performance data of Scope 3: category5 and waste generation, and the number of occupational accidents including the number of accidents leading to workdays lost, the number of accidents not leading to workdays lost and the workdays lost are for DIC parent company sites and domestic Group companies.

The percentage of female employees and the percentage of management positions occupied by female employees are for DIC parent company sites.

The period subject to report is from 1 January 2016 to 31 December 2016.

Procedure of Verification

The assertion was verified in accordance with criteria of verification, 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 and review of vouchers at the Hokuriku Plant and the 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 "GHG Emissions Calculation and Reporting Manual Ver.4.2" 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. SGS Japan Inc. affirms our independence from the organization, being free from bias and conflicts of interest with the organization.



The DIC Group commissioned SGS Japan Inc. to conduct third-party verification of its data for greenhouse gas emissions, discharge of industrial waste and number of occupational accidents (including number of accidents leading to workdays lost).

> Analysis of Results of Operations

Overview of Operating Results

In fiscal year 2016, ended December 31, 2016, the economies of North America and Europe continued to see moderate recovery. In Asia, a revival was seen in the PRC and Southeast Asia. Conditions in India remained on a gentle upswing. Japan's economy, while still fragile, showed signs of a gradual rally.

In this environment, consolidated net sales declined 8.4%, to ¥751.4 billion, notwithstanding firm shipments, owing to the appreciation of the yen against other major currencies, among others.

Operating income advanced 6.1%, to ¥54.2 billion. Factors behind this result included increased sales of high-value-added products and cost reductions.

Ordinary income rose 13.9%, to ¥55.8 billion. Both operating income and ordinary income results represented record highs.

Net income attributable to owners of the parent decreased 7.0%, to ¥34.8 billion, with contributing factors including a decline in gain on sales of noncurrent assets.

				(Billions of yen)
	FY2015	FY2016	Change (%)	Change (%) excluding the impact of foreign currency fluctuations
Net sales	820.0	751.4	-8.4%	-0.3%
Operating income	51.1	54.2	6.1%	14.7%
Ordinary income	49.0	55.8	13.9%	—
Net income attributable to owners of the parent	37.4	34.8	-7.0%	_

Note: The exchange rates used to translate the results of overseas DIC Group companies for fiscal years 2016 and 2015, respectively, are as follows: Fiscal year 2016: ¥109.96/US\$1.00 (average for the year ended December 31, 2016) Fiscal year 2015: ¥120.85/US\$1.00 (average for the year ended December 31, 2015)

Segment Results

	Net sales				Operating income (loss)			
	FY2015	FY2016	Change (%)	Change (%) excluding the impact of foreign currency fluctuations	FY2015	FY2016	Change (%)	Change (%) excluding the impact of foreign currency fluctuations
Printing Inks	412.6	365.2	-11.5%	-0.7%	19.0	18.4	-3.3%	8.8%
Fine Chemicals	135.5	128.2	-5.4%	2.2%	13.1	14.4	10.0%	16.8%
Polymers	194.6	180.9	-7.0%	-3.0%	16.0	19.6	23.0%	29.6%
Compounds	63.6	61.1	-3.9%	3.5%	5.7	5.0	-13.3%	-6.1%
Application Materials	57.5	55.7	-3.2%	-0.5%	2.1	1.9	-11.1%	-9.4%
Others, Corporate and eliminations	(43.8)	(39.7)	_	_	(4.8)	(5.1)		_
Total	820.0	751.4	-8.4%	-0.3%	51.1	54.2	6.1%	14.7%

Note: Effective from January 1, 2016, the Company revised its segmentation to coincide with the launch of its new medium-term management plan, DIC108. Accordingly, certain figures for fiscal year 2015 have been restated.

Segment results in key markets are as follows. Year-on-year percentage changes in squared parentheses represent increases or decreases excluding the impact of foreign currency fluctuations. Interregional transactions within the Printing Inks segment are included. Accordingly, the aggregates of regional net sales and operating income figures for the Printing Inks segment differ from the figures presented above.

(Billions of ven)

📕 Japan			
Net sales	¥79.8 billion	Change	-1.2%
Operating income	¥5.1 billion	Change	62.5%
Sales of packaging ir for publishing inks an Operating income so an improved product	nks benefited from d news inks and th pared, underpinned mix, among others	healthy shipm e erosion of sa d by the aforem	nents. However, overall sales in Japan slipped, reflecting decreased demand ales prices across the board. nentioned shipments, as well as by the positive impact of cost reductions and

Net sales	¥232.7 billion	Change	-14.8%	[-1.1%]		
Operating income	¥8.4 billion	Change	-19.7%	[-0.0%]		

Although sales of packaging inks rose, sales in Europe and North America were down, owing to waning demand for publishing inks and news inks. Sales in Central and South America advanced, buoyed by brisk shipments of packaging inks and publishing inks. As a consequence of various factors, including these results, and of the impact of foreign currency fluctuations, overall sales in the Americas and Europe declined.

Foreign currency fluctuations also hindered operating income, which decreased despite being level in local currency terms.

Asia and Oceania								
Net sales	¥61.6 billion	Change	-12.6%	[-0.3%]				
Operating income	¥4.8 billion	Change	-8.9%	[3.5%]				

While shipments of packaging inks were solid, flagging sales prices in all product categories pushed down sales in the PRC. A sharp increase in sales of publishing inks and packaging inks underpinned higher sales in Southeast Asia. In Oceania, sales rose, bolstered by robust shipments of publishing inks and packaging inks. Sales in India slipped, with contributing factors including falling sales of news inks. For these and other reasons, overall sales in Asia and Oceania decreased, hampered by foreign currency fluctuations.

Operating income was up in local currency terms, bolstered by higher sales of high-value-added products, cost reductions and other factors, but down after translation, reflecting foreign currency fluctuations.

Fine Chemicals									
Net sales	¥128.2 billion	Change	-5.4%	[2.2%]					
Operating income	¥14.4 billion	Change	10.0%	[16.8%]					

In pigments, sales in Japan were lifted by brisk shipments of functional pigments, including those for color filters, while sales in the Americas and Europe decreased, notwithstanding a substantial increase in sales of pigments for cosmetics, as a consequence of foreign currency fluctuations. Sales of TFT LCs recovered substantially, reflecting higher shipments from a new production facility in the PRC and the start of full-scale shipments from Japan, which had been delayed. While these factors boosted results in local currency terms, segment sales were down after translation, owing to foreign currency fluctuations.

Segment operating income advanced substantially, underpinned by an improved product mix, among others.

Polymers				
Net sales	¥180.9 billion	Change	-7.0%	[-3.0%]
Operating income	¥19.6 billion	Change	23.0%	[29.6%]

Despite generally firm shipments, sales in Japan declined as a result of falling sales prices. Sales overseas were also down, hindered by the deterioration of sales prices and by foreign currency fluctuations, although sales to customers in the electrical and electronics industries were solid. For these and other reasons, segment sales decreased.

Cost reductions and other factors sparked a sharp increase in segment operating income.

Compounds				
Net sales	¥61.1 billion	Change	-3.9%	[3.5%]
Operating income	¥5.0 billion	Change	-13.3%	[-6.1%]

Sales of PPS compounds advanced, as shipments were healthy both in Japan and overseas. Thanks to robust shipments overseas, sales of jet inks were up overall, despite the negative impact of foreign currency fluctuations on exports, which hurt domestic sales. Although these factors led to an increase in local currency terms, segment sales decreased after translation, owing to foreign currency fluctuations.

Segment operating income declined, reflecting segment sales results, among others.

Application Materials

Net sales	¥55.7 billion	Change	-3.2%	[-0.5%]		
Operating income	¥1.9 billion	Change	-11.1%	[-9.4%]		

Persistently robust shipments sustained an increase in sales of hollow-fiber membrane modules. Nonetheless, segment sales declined, despite being level in local currency terms. Reasons for this result included dwindling sales of industrial adhesive tapes, which were hindered by sluggish demand for products used in smartphones.

Segment operating income fell, with contributing factors including the aforementioned segment sales results.

> Consolidated Financial Statements

Consolidated Balance Sheet As of December 31, 2015 and 201	(Millions of yen)	(Thousands of U.S. dollars)	
	2015	2016	2016
Assets			
Current assets			
Cash and deposits	15,363	17,241	147,359
Notes and accounts receivable — trade	221,006	215,369	1,840,761
Merchandise and finished goods	87,947	82,611	706,077
Work in process	9,369	9,461	80,863
Raw materials and supplies	52,245	53,605	458,162
Deferred tax assets	11,435	9,915	84,744
Other	21,947	21,374	182,684
Allowance for doubtful accounts	(10,654)	(10,839)	(92,641)
Total current assets	408,658	398,737	3,408,009
Non-current assets			
Property, plant and equipment			
Buildings and structures	258,731	256,603	2,193,188
Accumulated depreciation	(162,852)	(164,511)	(1,406,077)
Buildings and structures, net	95,879	92,092	787,111
Machinery, equipment and vehicles	410,713	397,740	3,399,487
Accumulated depreciation	(340,487)	(331,398)	(2,832,462)
Machinery, equipment and vehicles, net	70,226	66,342	567,026
Tools, furniture and fixtures	60,387	59,652	509,846
Accumulated depreciation	(50,782)	(49,510)	(423,162)
Tools, furniture and fixtures, net	9,605	10,142	86,684
Land	50,775	50,169	428,795
Construction in progress	6,660	7,915	67,650
Total property, plant and equipment	233,145	226,660	1,937,265
Intangible assets			
Goodwill	906	501	4,282
Software	6,470	4,878	41,692
Other	3,880	3,563	30,453
Total intangible assets	11,256	8,942	76,427
Investments and other assets			
Investment securities	37,075	41,007	350,487
Deferred tax assets	38,939	36,996	316,205
Net defined benefit asset	24,885	28,074	239,949
Other	25,296	25,899	221,359
Allowance for doubtful accounts	(397)	(1,487)	(12,709)
Total investments and other assets	125,798	130,489	1,115,291
Total non-current assets	370,199	366,091	3,128,983
Total assets	778,857	764,828	6,536,991

Consolidated Balance Sheet		(Millions of yen)	(Thousands of U.S. dollars) *	
	2015	2016	2016	
Liabilities				
Current liabilities				
Notes and accounts payable — trade	95,569	94,392	806,769	
Short-term loans payable	20,632	52,744	450,803	
Current portion of long-term loans payable	61,630	43,647	373,051	
Commercial papers	4,000	_	_	
Current portion of bonds	8,000	-	_	
Lease obligations	572	584	4,991	
Income taxes payable	8,347	4,153	35,496	
Deferred tax liabilities	295	322	2,752	
Provision for bonuses	6,914	7,050	60,256	
Other	65,321	62,447	533,735	
Total current liabilities	271,280	265,339	2,267,855	
Non-current liabilities	<u>.</u>			
Bonds payable	20,000	30,000	256,410	
Long-term loans payable	139,900	109,918	939,470	
Lease obligations	4,718	4,394	37,556	
Deferred tax liabilities	8,555	9,598	82,034	
Net defined benefit liability	32,833	28,072	239,932	
Asset retirement obligations	1,213	1,334	11,402	
Other	10,501	9,156	78,256	
Total non-current liabilities	217,720	192,472	1,645,060	
Total liabilities	489,000	457,811	3,912,915	
Net assets				
Shareholders' equity				
Capital stock	96,557	96,557	825,274	
Capital surplus	94,161	94,094	804,222	
Retained earnings	137,071	159,541	1,363,598	
Treasury shares	(5,911)	(1,213)	(10,368)	
Total shareholders' equity	321,878	348,979	2,982,726	
Accumulated other comprehensive income	· · · ·			
Valuation difference on available-for-sale securities	3,688	5,248	44,855	
Deferred gains or losses on hedges	(73)	(187)	(1,598)	
Foreign currency translation adjustment	(29,925)	(48,626)	(415,607)	
Remeasurements of defined benefit plans	(33,101)	(26,879)	(229,735)	
Total accumulated other comprehensive income	(59,411)	(70,444)	(602,085)	
Non-controlling interests	27,390	28,482	243,436	
Total net assets	289,857	307,017	2,624,077	
Total liabilities and net assets	778,857	764,828	6,536,991	

Consolidated Statement of Income Years ended December	(Millions of yen)	(Thousands of U.S. dollars) *	
	2015	2016	2016
Net sales	819,999	751,438	6,422,547
Cost of sales	635,106	571,895	4,887,991
Gross profit	184,893	179,543	1,534,556
Total selling, general and administrative expenses	133,825	125,361	1,071,462
Operating income	51,068	54,182	463,094
Non-operating income			
Interest income	1,198	575	4,915
Dividends income	365	401	3,427
Equity in earnings of affiliates	2,735	3,266	27,915
Foreign exchange gains	_	607	5,188
Other	2,383	2,182	18,650
Total non-operating income	6,681	7,031	60,094
Non-operating expenses			
Interest expenses	5,485	3,227	27,581
Foreign exchange losses	567	-	-
Other	2,702	2,189	18,709
Total non-operating expenses	8,754	5,416	46,291
Ordinary income	48,995	55,797	476,897
Extraordinary income			
State subsidy	255	842	7,197
Gain on bargain purchase	-	78	667
Gain on sales of non-current assets	14,229	_	_
Gain on sales of subsidiaries and affiliates securities	2,723	-	-
Compensation income	704	_	_
Gain on sales of investment securities	555	-	-
Total extraordinary income	18,466	920	7,863
Extraordinary loss			
Loss on disposal of non-current assets	3,550	4,412	37,709
Severance costs	3,787	1,416	12,103
Provision of allowance for doubtful accounts	_	553	4,726
Loss on disaster	-	440	3,761
Loss on valuation of investments in capital	716	_	-
Impairment loss	674	_	_
Loss on reduction of non-current assets	168	-	-
Total extraordinary loss	8,895	6,821	58,299
Income before income taxes and non-controlling interests	58,566	49,896	426,462
Income taxes—current	14,351	11,565	98,846
Income taxes — deferred	4,634	767	6,556
Total income taxes	18,985	12,332	105,402
Net income	39,581	37,564	321,060
Net income attributable to non-controlling interests	2,187	2,797	23,906
Net income attributable to owners of the parent	37,394	34,767	297,154

* Yen amounts have been translated, for readers' convenience only, at the rate of ¥117 to US\$1, the approximate rate of exchange on December 31, 2016.

Consolidated Statement of Comprehensive Income Years ended December 31, 2015 and 2016 (Millions of yen)

Consolidated Statement of Comprehensive Income	Years ended December 31, 2015	(Thousands of U.S. dollars) *	
	2015	2016	2016
Net income	39,581	37,564	321,060
Other comprehensive income			
Valuation difference on available-for-sale securities	845	1,609	13,752
Deferred gains or losses on hedges	102	(112)	(957)
Foreign currency translation adjustment	(14,523)	(18,179)	(155,376)
Remeasurements of defined benefit plans, net of tax	3,560	6,266	53,556
Share of other comprehensive income of associates accounted for using equity method	(1,309)	(965)	(8,248)
Total other comprehensive income	(11,325)	(11,381)	(97,274)
Comprehensive income	28,256	26,183	223,786
Comprehensive income attributable to			
Comprehensive income attributable to owners of the parent	26,782	23,734	202,855
Comprehensive income attributable to non-controlling interests	1,474	2,449	20,932

Consolidated Statement of Changes in Net Assets Years ended December 31, 2015 and 2016

(Millions of yen)

	Capital stock	Capital surplus	Retained earnings	Treasury shares	Total shareholders' equity
Balance at January 1, 2015	96,557	94,161	108,726	(896)	298,548
Cumulative effects of changes in accounting policies			(2,316)		(2,316)
Restated balance	96,557	94,161	106,410	(896)	296,232
Dividends from surplus			(6,733)		(6,733)
Net income attributable to owners of the parent			37,394		37,394
Purchased treasury shares				(5,015)	(5,015)
Net changes in items other than shareholders' equity					
Balance at December 31, 2015	96,557	94,161	137,071	(5,911)	321,878
Dividends from surplus			(7,585)		(7,585)
Net income attributable to owners of the parent			34,767		34,767
Purchased treasury shares				(19)	(19)
Retired treasury shares		(5)	(4,712)	4,717	-
Changes in treasury shares of parent arising from transactions with non-controlling shareholders		(62)			(62)
Net changes in items other than shareholders' equity					
Balance at December 31, 2016	96,557	94,094	159,541	(1,213)	348,979

(Thousands of U.S. dollars)*

	Shareholders' equity					
	Capital stock	Capital surplus	Retained earnings	Treasury shares	Total shareholders' equity	
Balance at December 31, 2015	825,274	804,795	1,171,547	(50,521)	2,751,094	
Dividends from surplus			(64,829)		(64,829)	
Net income attributable to owners of the parent			297,154		297,154	
Purchased treasury shares				(162)	(162)	
Retired treasury shares		(43)	(40,274)	40,316	_	
Changes in treasury shares of parent arising from transactions with non-controlling shareholders		(530)			(530)	
Net changes in items other than shareholders' equity						
Balance at December 31, 2016	825,274	804,222	1,363,598	(10,368)	2,982,726	

* Yen amounts have been translated, for readers' convenience only, at the rate of ¥117 to US\$1, the approximate rate of exchange on December 31, 2016.

(Millions o							(Millions of yen)
	Accumulated other comprehensive income						
	Valuation difference on available-for-sale securities	Deferred gains or losses on hedges	Foreign currency translation adjustment	Remeasurements of defined benefit plans	Total accumulated other comprehensive income	Non-controlling interests	Total net assets
Balance at January 1, 2015	2,914	(178)	(14,817)	(36,718)	(48,799)	26,974	276,723
Cumulative effects of changes in accounting policies						(99)	(2,415)
Restated balance	2,914	(178)	(14,817)	(36,718)	(48,799)	26,875	274,308
Dividends from surplus							(6,733)
Net income attributable to owners of the parent							37,394
Purchased treasury shares							(5,015)
Net changes in items other than shareholders' equity	774	105	(15,108)	3,617	(10,612)	515	(10,097)
Balance at December 31, 2015	3,688	(73)	(29,925)	(33,101)	(59,411)	27,390	289,857
Dividends from surplus							(7,585)
Net income attributable to owners of the parent							34,767
Purchased treasury shares							(19)
Retired treasury shares							-
Changes in treasury shares of parent arising from transactions with non-controlling shareholders							(62)
Net changes in items other than shareholders' equity	1,560	(114)	(18,701)	6,222	(11,033)	1,092	(9,941)
Balance at December 31, 2016	5,248	(187)	(48,626)	(26,879)	(70,444)	28,482	307,017

(Thousands of U.S. dollars) *

	Accumulated other comprehensive income						
	Valuation difference on available-for-sale securities	Deferred gains or losses on hedges	Foreign currency translation adjustment	Remeasurements of defined benefit plans	Total accumulated other comprehensive income	Non-controlling interests	Total net assets
Balance at December 31, 2015	31,521	(624)	(255,769)	(282,915)	(507,786)	234,103	2,477,410
Dividends from surplus							(64,829)
Net income attributable to owners of the parent							297,154
Purchased treasury shares							(162)
Retired treasury shares							-
Changes in treasury shares of parent arising from transactions with non-controlling shareholders							(530)
Net changes in items other than shareholders' equity	13,333	(974)	(159,838)	53,179	(94,299)	9,333	(84,966)
Balance at December 31, 2016	44,855	(1,598)	(415,607)	(229,735)	(602,085)	243,436	2,624,077

Consolidated Statement of Cash Flows Years ended December 31, 2015 and 2016

(Thousands of U.S. dollars) *

(Millions of yen)

	2015	2016	2016
Net cash provided by (used in) operating activities			
Income before income taxes and non-controlling interests	58,566	49,896	426,462
Depreciation and amortization	32,886	32,444	277,299
Amortization of goodwill	477	373	3,188
Increase (decrease) in allowance for doubtful accounts	583	1,540	13,162
Increase (decrease) in provision for bonuses	383	149	1,274
Interest and dividends income	(1,563)	(976)	(8,342)
Equity in (earnings) losses of affiliates	(2,735)	(3,266)	(27,915)
Interest expenses	5,485	3,227	27,581
Loss (gain) on sales and retirement of non-current assets	(10,679)	4,412	37,709
Impairment loss	674	_	_
Loss (gain) on sales of subsidiaries and affiliates securities	(2,723)	_	_
Loss (gain) on sales of investment securities	(555)	—	-
Loss on valuation of investments in capital	716	_	_
State subsidy	(255)	(842)	(7,197)
Decrease (increase) in notes and accounts receivable —trade	(15,878)	(2,150)	(18,376)
Decrease (increase) in inventories	1,940	(828)	(7,077)
Increase (decrease) in notes and accounts payable-trade	(12,383)	(1,810)	(15,470)
Other, net	(12,844)	(2,775)	(23,718)
Subtotal	42,095	79,394	678,581
Interest and dividends income received	2,731	2,130	18,205
Interest expenses paid	(5,724)	(3,254)	(27,812)
Income taxes paid	(9,989)	(15,766)	(134,752)
Net cash provided by (used in) operating activities	29,113	62,504	534,222
Net cash provided by (used in) investing activities			
Payments into time deposits	(3,297)	(6,505)	(55,598)
Proceeds from withdrawal of time deposits	3,387	6,219	53,154
Purchase of property, plant and equipment	(31,247)	(30,310)	(259,060)
Proceeds from sales of property, plant and equipment	14,670	455	3,889
Purchase of intangible assets	(841)	(969)	(8,282)
Purchase of investments in subsidiaries resulting in change in scope of consolidation	(1,873)	(114)	(974)
Proceeds from sales of investments in subsidiaries resulting in change in scope of consolidation	2,100	_	_
Purchase of subsidiaries and affiliates securities	(49)	—	_
Proceeds from sales of subsidiaries and affiliates securities	6,356	_	
Purchase of investment securities	(48)	(971)	(8,299)
Proceeds from sales and redemption of investment securities	642	376	3,214
Payments for transfer of business	-	(275)	(2,350)
Proceeds from subsidy income	209	842	7,197
Other, net	18	(950)	(8,120)
Net cash provided by (used in) investing activities	(9,973)	(32,202)	(275,231)
Net cash provided by (used in) financing activities			
Net increase (decrease) in short-term loans payable	(8,847)	30,364	259,521
Increase (decrease) in commercial papers	4,000	(4,000)	(34,188)
Proceeds from long-term loans payable	62,440	30,069	257,000
Repayment of long-term loans payable	(79,137)	(75,576)	(645,949)
Proceeds from issuance of bonds	20,000	10,000	85,470
Redemption of bonds	(10,000)	(8,000)	(68,376)
Cash dividends paid	(6,733)	(7,585)	(64,829)
Cash dividends paid to non-controlling interests	(987)	(1,047)	(8,949)
Net decrease (increase) in treasury shares	(5,015)	(19)	(162)
Other, net	(522)	(1,058)	(9,043)
Net cash provided by (used in) financing activities	(24,801)	(26,852)	(229,504)
Effect of exchange rate change on cash and cash equivalents	4,381	(1,892)	(16,171)
Net increase (decrease) in cash and cash equivalents	(1,280)	1,558	13,316
Cash and cash equivalents at beginning of the period	16,393	15,113	129,171
Cash and cash equivalents at the end of the period	15,113	16,671	142,487

Corporate Data

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

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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 March 31, 2017.)

Principal Subsidiaries and Affiliates

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Cast Film Japan Co., Ltd. DC Katsuya Co., Ltd. DIC Color Coatings, Inc. DIC Color Design, Inc. DIC Covestro Polymer Ltd. DIC Covestro Polymer Ltd. DIC Decor, Inc. DIC EP Corp. DIC Estate Co., Ltd. DIC Graphics Corporation DIC Interior Co., Ltd. DIC Investments Japan, LLC. DIC Investments Japan, LCC. DIC Kako, Inc. DIC Kitanihon Polymer Co., Ltd. DIC Kiyushu Polymer Co., Ltd. DIC Lifetec Co., Ltd. DIC Machinery & Printer's Supplies, Inc. DIC Material 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.

Asia and Oceania (Excluding Japan)

Aekyung Chemical Co., Ltd. Changzhou Huari New Material Co., Ltd. DIC Alkylphenol Singapore Pte., Ltd. DIC Asia Pacific Pte Ltd DIC Asia Pacino 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 Fine Chemicals Private Limited DIC Graphics (Guangzhou) Ltd. DIC Graphics (Hong Kong) Ltd. DIC Graphics (Thailand) Co., Ltd. DIC Graphics Chia Lung Corp. DIC (Guangzhou) Co., Ltd. DIC India Ltd. DIC India Ltd. DIC Korea Corp. DIC Lanka (Private) Ltd. DIC (Malaysia) Sdn. Bhd. DIC New Zealand Ltd. DIC Pakistan Ltd. 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. Guangzhou Lidye Resin Co., Ltd.

Hainan DIC Microalgae Co., Ltd. Kangnam Chemical Co., Ltd. Lianyungang DIC Color Co., Ltd. Lidye Chemical Co., Ltd. Nantong DIC Color Co., Ltd. Nantong Shan Kai Ming Ke Trading 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. Seiko PMC (Shanghai) Commerce & Trading Corp. Seiko PMC (Zhangjiagang) Corporation Shanghai DIC Ink Co., Ltd. Shanghai DIC Pressure-Sensitive Adhesive Materials Co., Ltd. Shenzhen-DIC Co., Ltd. Siam Chemical Industry Co., Ltd. Sun Branding Solutions (India) Pvt. Ltd. Sun Chemical (Hai'an) Limited Sun Chemical Holding (Hong Kong) Ltd. Sun Chemical Trading (Shanghai) Co., Ltd. Suqian Lintong New Materials Co., Ltd. Suzhou Lintong Chemical Science Corp. TOA-DIC Zhangjiagang Chemical Co., Ltd. Zhongshan DIC Colour Co., Ltd.

Europe and Africa

Benda-Lutz Skawina Sp. z.o.o. Benda-Lutz Volzhsky ooo Benda-Lutz Werke GmbH Coates Brothers (East Africa) Ltd. Coates Brothers (West Africa) Ltd. Coates Screen Inks GmbH DIC Europe GmbH DIC Holdings Austria GmbH DIC Holdings B.V. DIC Performance Resins GmbH ECG Holdings Ltd. Gibbon FineCal Ltd. Glenside Properties Limited Hartman D.O.O. Hartmann Druckfarben GmbH Hartmann-Sun Chemical EOOD Kingfisher Colours Ltd. Lorilleux Maroc S.A. Parker Williams Design Ltd. Sun Branding Solutions Ltd. Sun Chemical AB Sun Chemical AG Sun Chemical AG (S.A., Ltd.) Sun Chemical A.O Sun Chemical A/S Sun Chemical A/S Sun Chemical B.V. Sun Chemical d.o.o. Sun Chemical for Graphic Arts S.A.E. Sun Chemical GmbH Sun Chemical Group Coöperatief U.A. Sun Chemical Group S.p.A. Sun Chemical Holding B.V.

Sun Chemical Inks A/S Sun Chemical Inks Ltd. Sun Chemical Lasfelde GmbH Sun Chemical Ltd. Sun Chemical N.V./S.A. Sun Chemical Nyomdafestek Kereskedelmi es Gyarto KFT Sun Chemical Osterode Druckfarben GmbH Sun Chemical Oy Sun Chemical Pigments S.L. Sun Chemical Portugal-Tintas Graficas Unipessoal Ltda. Sun Chemical Printing Ink d.o.o. Sun Chemical Publication A.E. Sun Chemical Publication Romania S.R.L. Sun Chemical Publications Bulgaria EAD Sun Chemical S.A.U. Sun Chemical S.A.S. Sun Chemical (South Africa) (Pty) Ltd. Sun Chemical s.r.l. Sun Chemical, s.r.o. Sun Chemical, s.r.o. Sun Chemical Sp. z.o.o. Sun Chemical Turkey Sun Chemical Ukraine Ltd. Sun Chemical ZAO Sun Inkjet Ceramics, S.L. North, Central and South America

Benda-Lutz Corporation Camus Water Technologies LLC Coates Brothers (Caribbean) Ltd. DIC Imaging Products USA, LLC DIC International (USA), LLC Earthrise Holdings Inc. Earthrise Nutritionals, LLC. Inmobiliaria Sunchem, S.A. de C.V. Mondis Manufacturers Insurance Company N.V. New England Manufacturers Insurance Corp. Rycoline Products, LLC SC Funding LLC SC (Puerto Rico) Ink Sinclair International Inc. Sinclair S.A.S. Sinclair Sun Chemical Ecuador S.A. Sun Chemical (Chile) S.A. Sun Chemical Corporation Sun Chemical de Centro America, S.A. de C.V. Sun Chemical de Panama, S.A. Sun Chemical do Brasil Ltda. Sun Chemical Inks S.A. Sun Chemical Ltd. Sun Chemical Management, L.L.C. Sun Chemical of Michigan LLC Sun Chemical Peru S.A. Sun Chemical S.A. de C.V Tintas S.A.S. Wiseman International Co., Ltd.

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