



Color & Comfort

# DIC REPORT 2019

The DIC Group Integrated Report

## Color & Comfort

English Version

**DIC Corporation**

# 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



## Color & Comfort

### Making it Colorful

DIC helps make life colorful



### Innovation through Compounding

DIC brings innovation to society through its core compounding technologies

### Specialty Solutions

DIC draws on its expertise and comprehensive strengths to offer solutions



## Connecting the DIC Group and its Stakeholders

### DIC Group Communications Tools

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

#### Printed/PDF-Form Publications

##### Reports on activities

**DIC Report**  
(summary version)



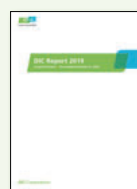
Summary integrated  
report (published annually)  
(printed publication)

**DIC Report**  
(complete version)



Complete report  
(published annually)  
(PDF-form publication)

**DIC Report**  
Financial Section



Report on results  
of operations and  
financial condition  
(published annually)  
(PDF-form 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



### About this Report

In previous years, the DIC Group 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. Since 2018, the Group has published the DIC Report as 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: As used herein, the term "Asia-Pacific region"—a geographic designation that, like "Europe and the Americas" and "Greater China," represents a grouping of companies overseen by a regional headquarters—refers to Asia (excluding Japan and Greater China) and Oceania. The term "Asia and Oceania" refers to Asia (excluding Japan) 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\\_2019.pdf](http://www.dic-global.com/en/csr/pdf/dic_report_scope_en_2019.pdf)

#### Reporting Period

Fiscal year 2018 (January 1–December 31, 2018)

#### Date of Publication

June 2019 (The next report is scheduled for publication in June 2020.)

#### 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 GRI Standards.

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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.



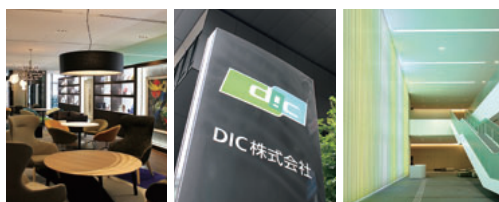
# The DIC Group: A Global Powerhouse

## Corporate Data

Registered name:	<b>DIC Corporation</b>
Corporate headquarters:	DIC Building, 7-20, Nihonbashi 3-chome, Chuo-ku, Tokyo 103-8233, Japan
Date of foundation:	February 15, 1908
Date of incorporation:	March 15, 1937
Paid-in capital:	¥96.6 billion
Number of employees:	20,620 (Nonconsolidated: 3,290)
Number of subsidiaries and affiliates:	174 (Domestic: 32 ) (Overseas: 142)

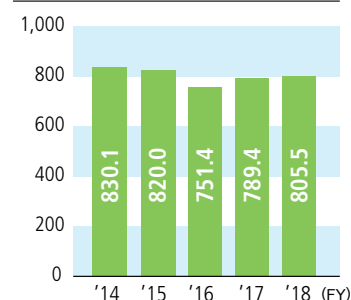


Corporate headquarters (Tokyo)



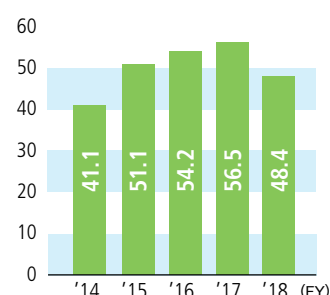
## Net Sales

(Billions of yen)



## Operating Income

(Billions of yen)



Note: Corporate data is as of December 31, 2018. Net sales and operating income are for fiscal year 2018.

## Global Network

DIC has 174 companies in 64 countries and territories around the world.



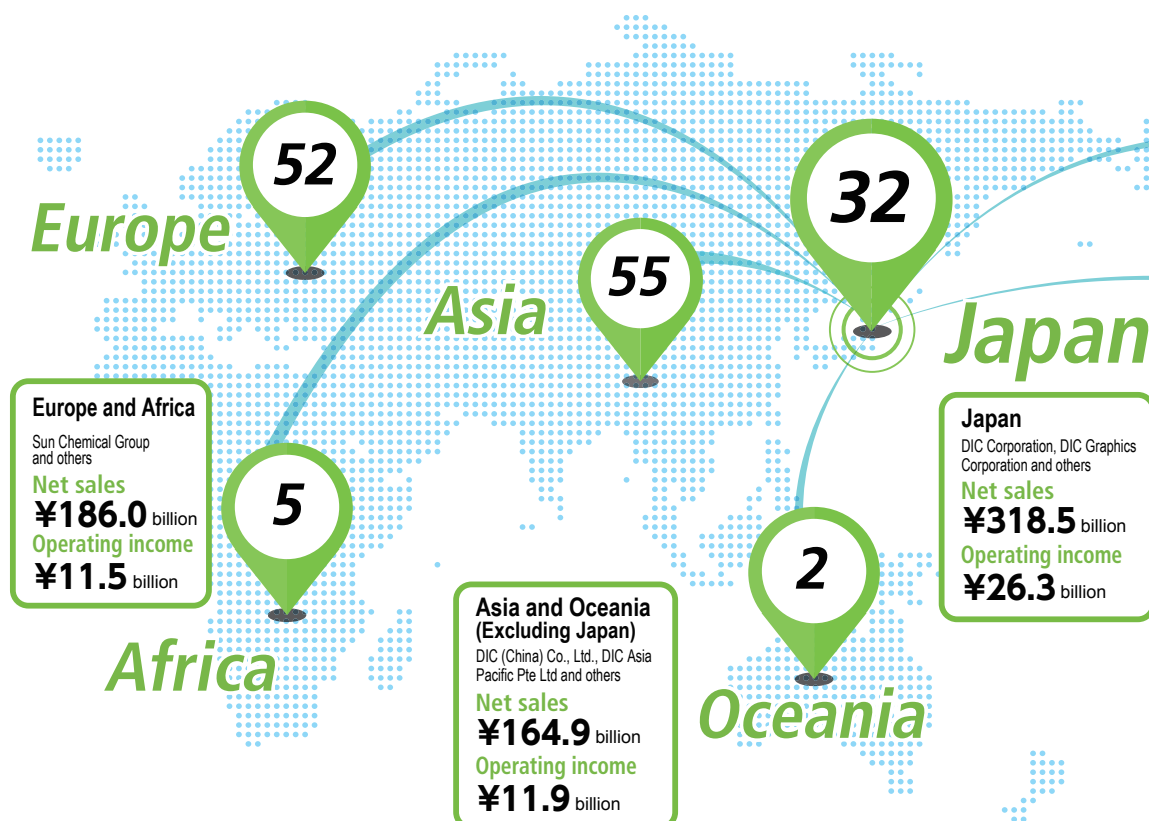
DIC (China) Co., Ltd. (PRC)



DIC Asia Pacific Pte Ltd (Singapore)

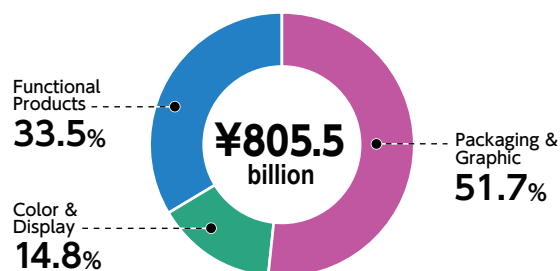


Sun Chemical Corporation headquarters (United States)

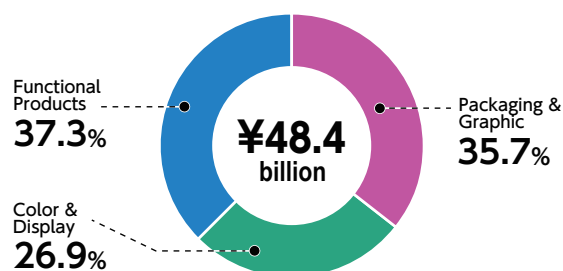




### Breakdown of Fiscal Year 2018 Net Sales by Segment

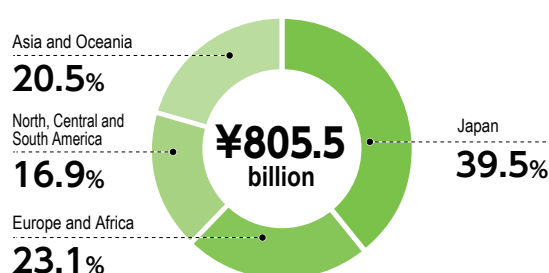


### Breakdown of Fiscal Year 2018 Operating Income by Segment

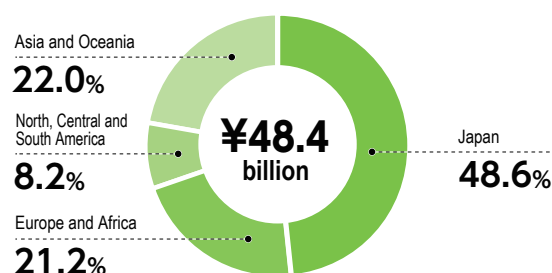


Note: Fiscal year 2018 net sales and operating income as used here include intersegment transactions. For this reason, and because of the existence of transactions classified as "others," which are not attributable to reportable segments, these figures differ from reported net sales and operating income.

### Breakdown of Fiscal Year 2018 Net Sales by Region

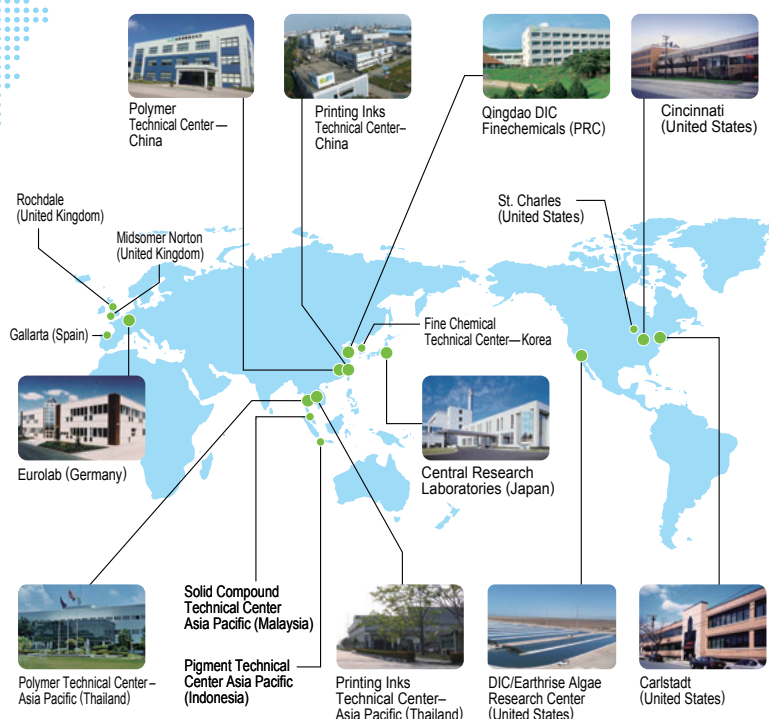
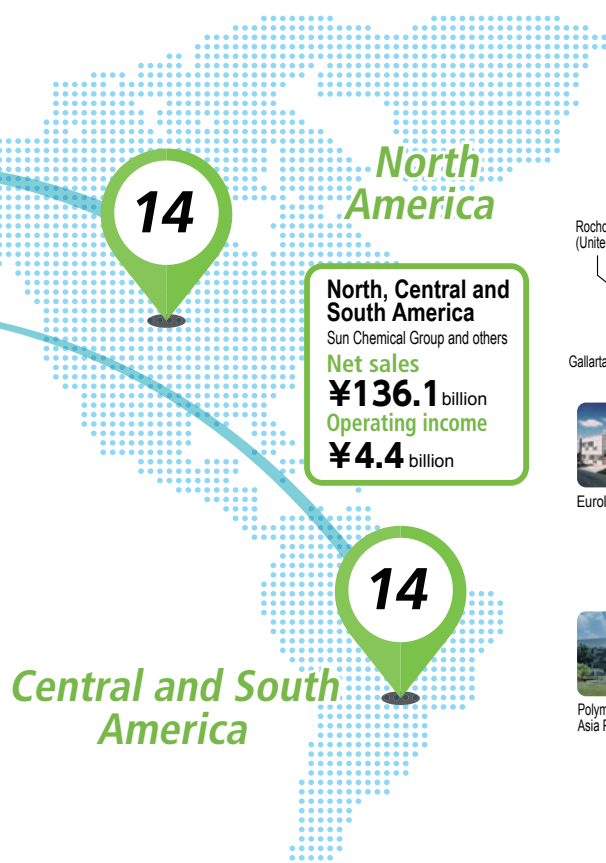


### Breakdown of Fiscal Year 2018 Operating Income by Region



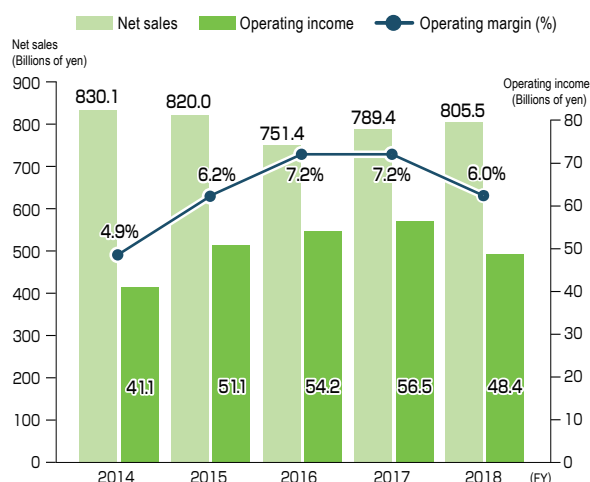
Note: Operating income as used here includes eliminations (approximately ¥5.8 billion). Accordingly, these percentages do not represent shares of reported operating income.

## Principal Global R&D Sites

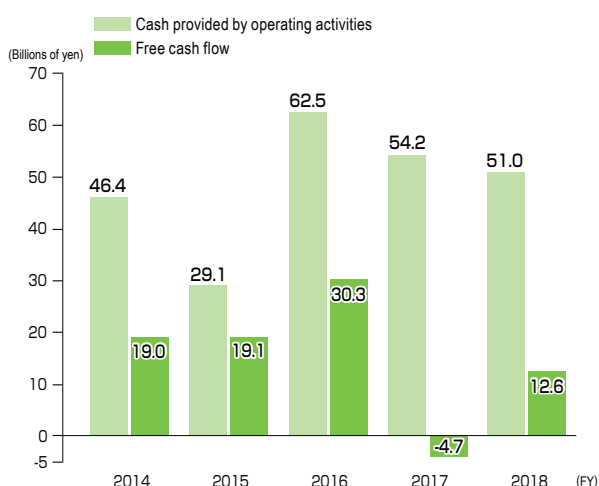


# Financial Information

## Net Sales, Operating Income and Operating Margin

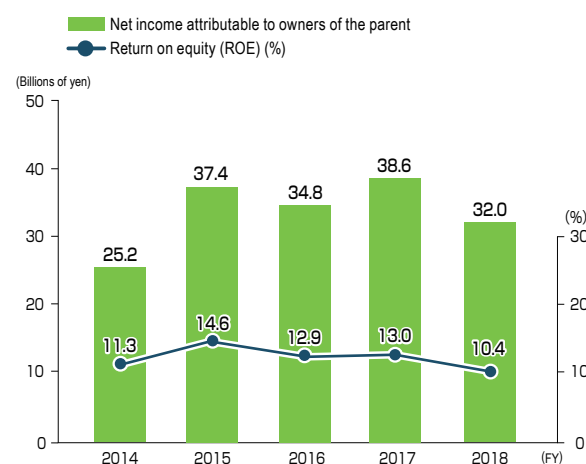


## Cash Provided by Operating Activities and Free Cash Flow

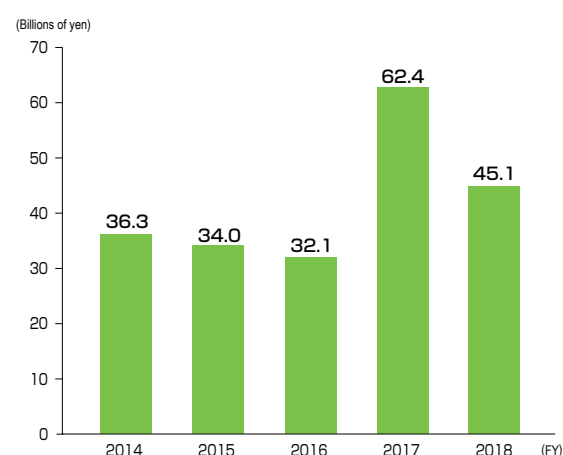


\* Owing to an investment of ¥24.9 billion in Taiyo Holdings Co., Ltd., cash used in investing activities increased in fiscal year 2017.

## Net Income Attributable to Owners of the Parent and ROE

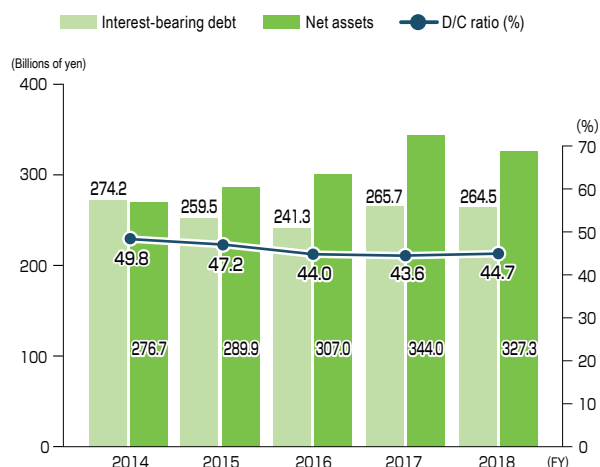


## Capital Expenditure and Investment



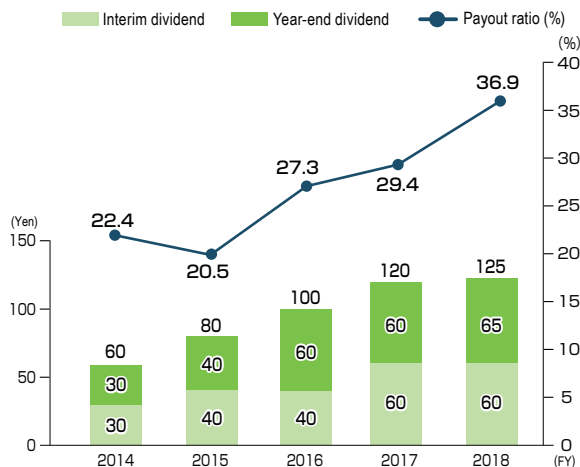
\* Owing to an investment of ¥24.9 billion in Taiyo Holdings Co., Ltd., capital expenditure and investment increased in fiscal year 2017.

## Net Assets, Interest-Bearing Debt and D/C Ratio\*



\* Debt-to-capital (D/C) ratio: Interest-bearing debt / (Interest-bearing debt + Net assets)

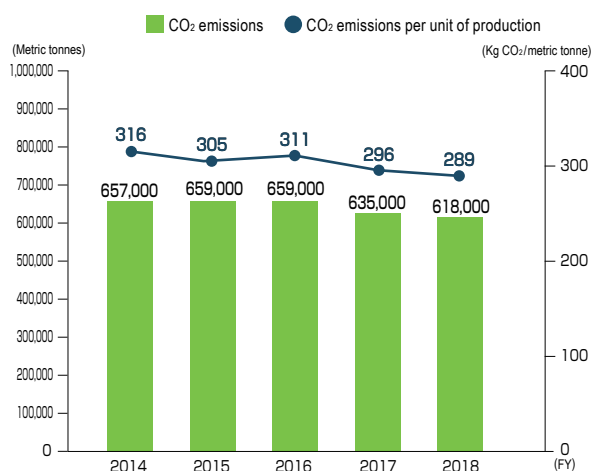
## Returns to Shareholders\* (Dividends per Share and Payout Ratio)



\* Figures have been adjusted to reflect the impact of the consolidation of shares. (In fiscal year 2015, DIC purchased and retired treasury shares.)

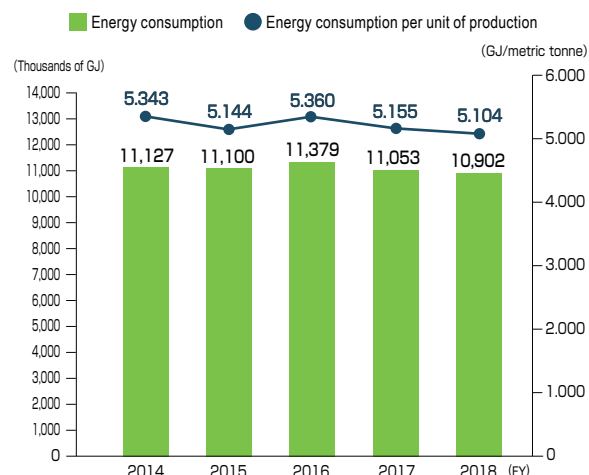
# Nonfinancial Information

## Global CO<sub>2</sub> Emissions and CO<sub>2</sub> Emissions per Unit of Production (DIC Group)



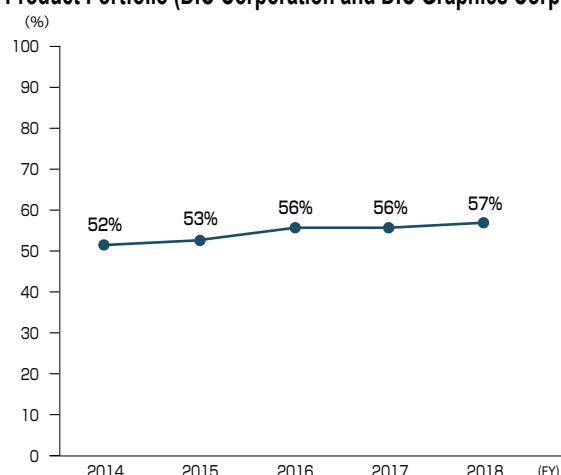
\* CO<sub>2</sub> emissions per unit of production is calculated using adjusted production volume (parent company in Japan only). (Notification submitted to Japan's Ministry of Economy, Trade and Industry)

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



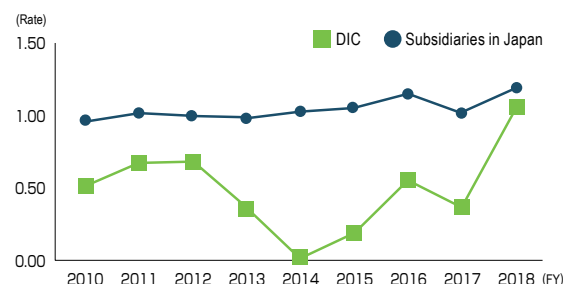
\* Energy consumption per unit of production is calculated using adjusted production volume (parent company in Japan only). (Notification submitted to Japan's Ministry of Economy, Trade and Industry)

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



\* Owing to the introduction of a new SAP enterprise resource planning (ERP) system in fiscal year 2014, the method used to calculate environment-friendly products has changed.

## Occupational Accident Frequency Rate (DIC Corporation)

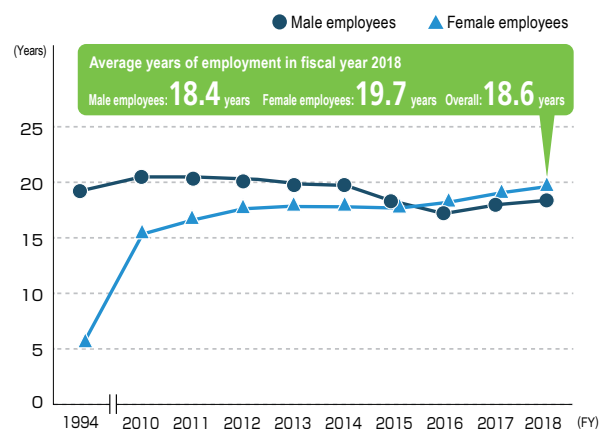


Note: The frequency rate expresses the frequency of accidents resulting in lost workdays in a fiscal year, calculated as the number of deaths or injuries per million work hours.

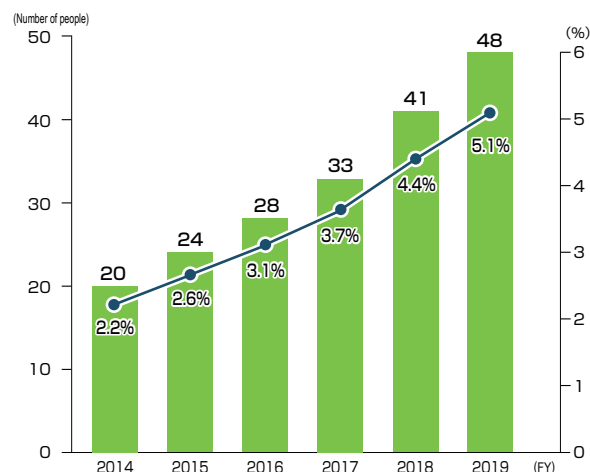
$$\text{Frequency rate} = \frac{\text{Number of deaths or injuries due to occupational accidents}}{\text{Total work hours}} \times 1,000,000$$

A frequency rate of 1.00 means one occupational accident resulting in workdays lost in one year at a site with 500 employees.

## Average Years of Employment (DIC Corporation)



## Female Employees in Management Positions (DIC Corporation)





## Addressing Social Imperatives as We Work to Reposition DIC on a Growth Trajectory

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Future vision:

“Become a unique global company  
that is trusted by society  
by providing value (safety and  
peace of mind, color and comfort)”

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Representative Director,  
President and CEO  
DIC Corporation

**Kaoru Ino**



In February 2019, we celebrated DIC's 111th anniversary. In addition to commanding the top share of the global market for printing inks, a core business since our establishment, we have succeeded in growing pigments and polymers, both derived from printing inks, into prosperous components. Today, we provide indispensable products and services to customers in a broad range of industries, including packaging, housing, automotive, cosmetics, electronics and healthcare.

The DIC Group comprises 174 companies in 64 countries and territories. Approximately 60% of our consolidated net sales are generated by, and over 70% of our more than 20,000 Group employees are located at, bases outside of Japan. Accordingly, a global perspective is crucial to any discussion of the Group.

In recent years, the rapid spread of advanced digital technologies, as represented by the increasing importance of artificial intelligence (AI) and the Internet of Things (IoT), have brought dramatic changes to lifestyles and society, as well as to the business environment. At the same time, social imperatives related to concerns such as climate change, food safety and marine plastics have become increasingly urgent. Amid such significant changes, how do materials manufacturers contribute to society going forward? Since taking the reins as CEO, I have seen this as my principal mission. Ensuring an accurate grasp of global, dynamic paradigm shifts is essential to our ability to achieve sustainable growth and also to enhance our intrinsic value. This recognition underpinned the formulation of our new medium-term management plan, DIC111, which kicked off in fiscal year 2019. Under this plan, we will work to strengthen our business, financial and human resources strategies while taking steps to improve management efficiency and strength.

## I A Look Back at DIC108 (Fiscal Years 2016–2018)

Our previous medium-term management plan, DIC108, was positioned as the first phase in a growth scenario developed to guide the DIC Group's evolution through to fiscal year 2024. The plan centered on two core policies: Ensure the sustainability of businesses with stable earnings bases—e.g., printing inks, pigments and polymers—by responding to environmental concerns, promoting rationalization and making strategic investments, and create business models that address social imperatives in such areas as electronics, packaging, healthcare and decarbonization. In line with these policies, we focused on strengthening our technology development capabilities and business expansion efforts, as well as our financial base. As a consequence, both businesses with stable earnings bases and growth businesses reported steady results over the three years of the plan, underpinning record-high income in fiscal years 2016 and 2017. However, in fiscal year 2018 consolidated operating income declined 14.3%, to ¥48.4 billion, despite a 2.0% increase in consolidated net sales, to ¥805.5 billion. The principal factors behind this are the fact that efforts to revise product prices failed to keep pace with rising raw materials prices and the depreciation of currencies in European emerging economies. Consolidated ordinary income decreased 14.5%, to ¥48.7 billion, and consolidated net income attributable to owners of the parent fell 17.0%, to ¥32.0 billion. Nonetheless, we declared a full-term dividend of ¥125 per share, an increase of ¥5.0 from fiscal year 2017, as a consequence of which our dividend payout ratio exceeded 30.0% in the final year of DIC108.

As demonstrated by our performance in fiscal year 2018, our profitability relies heavily on existing core businesses, meaning that our business structure is vulnerable to macroenvironmental conditions, including rising prices for raw materials. This underscored our recognition of the urgency of transforming our business portfolio so that it's able to withstand demand declines in mature markets and repositioning DIC on a growth trajectory by creating new businesses with the potential to become mainstays. It also clarified what we need to do as we move toward this new growth trajectory.

In fiscal year 2019, risks arising from economic trends in the People's Republic of China (PRC) and worldwide—a consequence of trade friction between the PRC and the United States—and from financial market fluctuations attributable to the United Kingdom's withdrawal from the European Union continue to warrant caution. Nonetheless, we will continue working to revamp our business structure, reinforcing its ability to withstand macroenvironmental changes and drive continuous, robust growth while at the same time applying our inherent talent for resolving issues to our efforts to implement the strategies of DIC111. Our forecasts for the period include consolidated net sales of ¥850.0 billion and consolidated operating income of ¥52.0 billion, up 5.5% and 7.5%, respectively, from fiscal year 2018.

**Consolidated operating income reached record highs in two consecutive years (fiscal years 2016 and 2017), but was significantly below our original target in fiscal year 2018, owing to rising raw materials prices.**

### Achievements

- Reorganized production system in line with demand trends in mature markets (publication inks and polymers)
- Growth in functional pigments business exceeded target
- Strengthened foundation of electronics business through capital and business alliance with Taiyo Holdings Co., Ltd.
- Realized continuous growth in net sales and record-high income (fiscal year 2017)
- Dividend payout ratio exceeded target, thanks to efforts to maintain/improve financial balance

### Challenges

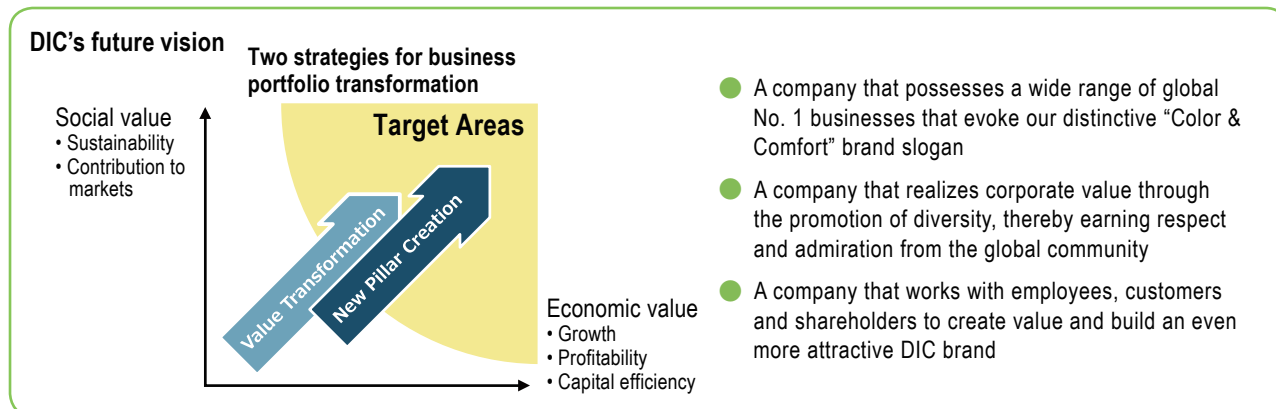
- Reform business structure to offset further demand declines in mature markets (publication inks and general processed products)
- Establish robust business foundation that is impervious to fluctuations in raw materials prices, taking into account the decline in profitability in fiscal year 2018, a consequence of rising raw materials prices
- Create new mainstay businesses to compensate for shrinking demand for publication inks to reposition DIC on a growth trajectory
- Steadily implement strategic investments

Promoting business portfolio transformation and an improved management infrastructure with the aim of achieving consolidated net sales of ¥1.0 trillion in fiscal year 2025

## I Realigning Businesses by Illuminating the Relationship Between Social Value and Economic Value

As a first step in formulating DIC111, we reconfirmed our vision for the DIC Group in the future.

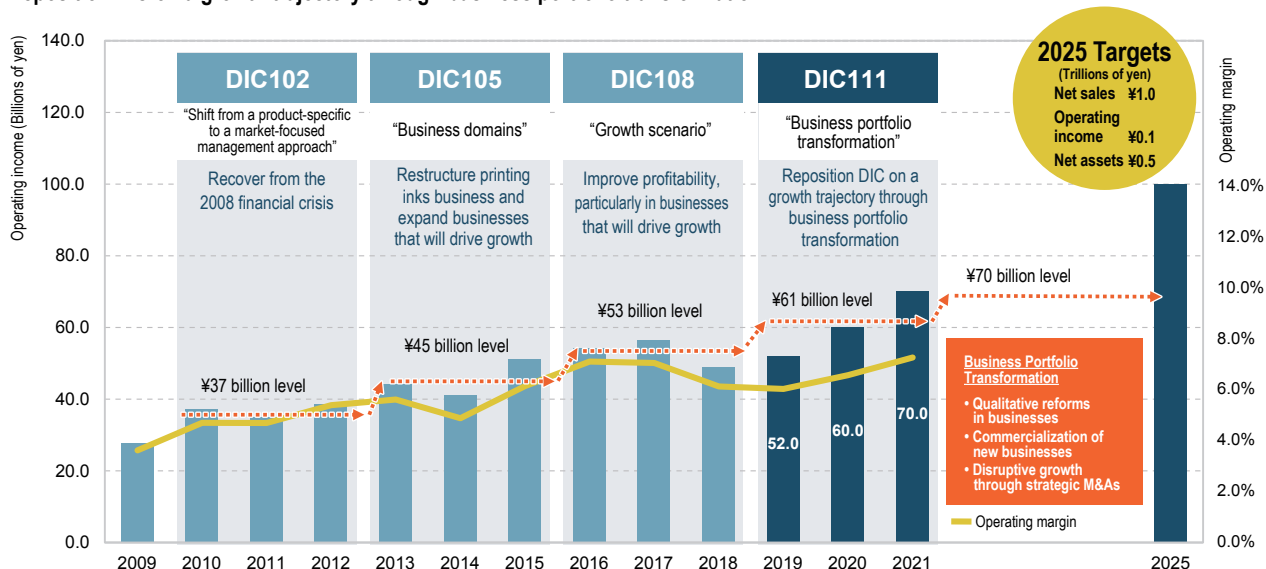
Become a unique global company that is trusted by society by providing value (safety and peace of mind, color and comfort)



To ensure that we realize this vision, we established the Intrinsic Value Working Group, comprising mid-tier and young employees, through which we promoted extensive debate and discussion aimed at better defining the value that DIC provides to society, identifying the challenges we must address and determining how best we can contribute to further sustainability through our operations. This process led us to review existing businesses from the twin perspectives of "social value" and "economic value" and to advance business portfolio transformation in a manner that addresses key imperatives arising from social changes such as the spread of digitization and environment, safety and health (ESH)-related issues, including those affecting the global environment and food supplies.

Leveraging our position as a manufacturer of fine chemicals, we have sought consistently to provide functionality and added value to society in a multitude of forms, thereby helping make people's lives more convenient. We have also always maintained an awareness of the negative aspects of our operations, including the impact of our production activities on the environment. Going forward, we will further advance this approach with the goal of becoming an organization capable of delivering increased functionality and other features that improve convenience and of providing social value, one facet of which is environmental value. We will bolster efforts to help address ESH-related issues—including climate change, sustainable resource use and human health—through our operations to provide enhanced value that contributes to a richer, more vibrant society. Combining economic value with social value will enable us to realize sustainable growth for the DIC Group. A natural extension of this approach is the milestone performance targets we have set for fiscal year 2025, namely, consolidated net sales of ¥1.0 trillion, operating income of ¥100 billion and net assets of ¥500 billion. Recognizing the achievement of these targets as critical to becoming a unique global company that is trusted by society, over the three years of DIC111 we will emphasize advancing qualitative reforms in existing businesses and commercializing new businesses, and on accelerating disruptive growth through strategic mergers and acquisitions (M&As).

### Reposition DIC on a growth trajectory through business portfolio transformation





## 1 Reorganization of business segments

Effective from fiscal year 2019, we have reorganized our five existing business segments, shifting our focus to value provided, into three new segments: Packaging & Graphic, Color & Display and Functional Products. As a company that provides complex products to customers in a broad range of industries, we often hear from investors that they find it difficult to understand our corporate direction. In that sense, I believe that it's important for us to have a business structure and message that are simple and easy for external stakeholders to understand and at the same time to ensure that all employees are on the same wavelength as we work together to confront challenges ahead.

- **Packaging & Graphic**  
Packaging materials that bring safety and peace of mind
- **Color & Display**  
Color and display materials that make life colorful
- **Functional Products**  
Functional products that add comfort

### Packaging & Graphic

To date, we have pursued independent strategies for printing inks, coextruded multilayer films and adhesives. Grouping these businesses together under the heading “packaging” will bring together common issues such as food safety and food loss. Looking ahead, we will capitalize on our ability to provide printing inks, films and adhesives to marshal technologies and know-how to offer packaging materials that bring safety and peace of mind and promote the expansion of our business while at the same time helping resolve social imperatives.



Presentation introducing DIC111

### Color & Display

This segment focuses on pigments, liquid crystals (LCs) and natural colorants as businesses that make life more colorful. In the area of pigments, we see products for cosmetics as particularly promising. We also expect growth in the market for *Linablue*<sup>®</sup>, a natural blue food coloring derived from *Spirulina*, owing to increasing concerns worldwide regarding food safety. In the highly profitable area of LCs, we are promoting the joint development of inks for inkjet-printed quantum dot color filters (QDCFs) that use inkjet technology as next-generation display materials.

### Functional Products

This segment centers on polymers and compounds. Guided by the concept of functional products that add comfort, we will leverage our specialized composite technologies to enhance our competitiveness in a variety of areas, including coatings and molded products, with the goal of adding comfort. This segment also includes products such as hollow-fiber membrane modules, which allow gases but not liquids to permeate.

We have also identified four priority areas for developing new businesses—Electronics, Automotive, Next-Generation Packaging and Healthcare—and have established the New Business Development Headquarters to oversee related efforts. The New Business Development Headquarters integrates three key functions—our R&D team, which encompasses medium- to long-term development; the Product Innovation Center, which is charged with bringing together core technologies; and our marketing team, which is responsible for enhancing popularity and market penetration—to seamlessly oversee all stages of new business development.

## 2 Value Transformation: Strengthening our corporate structure through qualitative reforms of businesses

Having defined “qualitative reforms” as clarifying competitive advantages and shifting to products capable of withstanding macroenvironmental changes, we will encourage a shift to businesses with more of a focus on social value and sustainability. In the Packaging & Graphic segment, we will concentrate resources on packaging solutions and specialty inks. In the Color & Display segment, efforts will center on high-performance products, notably functional pigments, and naturally derived products. In the Functional Products segment, we will emphasize environment-friendly products and high-value-added products such as epoxy resins. Shifting to businesses with more of an emphasis on social value will also entail a review of general-purpose products and a bold revamping of business models, including those for core businesses. In some cases, this may necessitate moving resolutely to replace certain businesses. Accordingly, we established Groupwide criteria for withdrawing from a business, which calls for a three-pronged evaluation of any business from three perspectives, namely, growth potential, profitability and scale, and consideration for market standing when plotting exit strategies. The Board of Directors and senior management will have the final say, but establishing criteria will enable us to accelerate the decision-making process, which will in turn strengthen the entire Group.

Segment	Value Transformation
Packaging & Graphic	<ul style="list-style-type: none"> <li><b>Publication inks</b></li> <li>• <b>Packaging solutions</b> Printing inks, adhesives, films, polystyrene</li> <li>• <b>Specialty inks</b> Jet inks, security inks</li> </ul>
Color & Display	<ul style="list-style-type: none"> <li><b>General-purpose pigments</b></li> <li>• <b>High-performance products</b> Functional pigments (pigments for color filters, effect pigments, pigments for cosmetics and pigments for NIP*), LC materials, next-generation display materials</li> <li>• <b>Naturally derived products</b> Natural colorants * Nonimpact printing</li> </ul>
Functional Products	<ul style="list-style-type: none"> <li><b>General processed products</b></li> <li><b>Solvent-based products</b></li> <li>• <b>Environment-friendly products</b> Waterborne resins, polyurethane resins, UV-curable resins</li> <li>• <b>High-value-added products</b> Epoxy resins, PPS compounds, industrial adhesive tapes, hollow-fiber membrane modules</li> </ul>

### 3 New Pillar Creation: Creating new businesses in response to ESH-related issues and social changes

The New Business Development Headquarters has identified four priority areas for developing new businesses: Electronics, Automotive, Next-Generation Packaging and Healthcare. In Electronics, we will seek to apply our ink dispersion technologies in such areas as flexible printed circuit boards (PCBs) and next-generation displays to develop functional materials that contribute to a digital society. Under the Automotive banner, we will foster businesses that make use of our composite technologies, including those used to produce carbon fiber-reinforced plastic (CFRP), which helps reduce vehicle weight, thereby improving fuel efficiency. In Next-Generation Packaging, we will work to develop packaging materials that help address issues such as food safety and food loss. Recognizing the elimination of marine plastics, a result of inappropriately discarded used plastic products, as a critical challenge, we have also established a project team to promote a switch to viable alternatives and develop biodegradable materials. Our focus in Healthcare will be on developing products that leverage biotechnological processes accumulated in the cultivation of algae and contribute to health and longevity. We will also make strategic investments to expedite our entry into new markets. This will include investing in startups in related fields and seeking advantageous M&A opportunities.

### 4 A financial strategy centered on cash flow management

DIC111 places top priority on optimizing cash flow management by working continuously to strengthen our financial health and investing in portfolio transformation. The plan budgets ¥250.0 billion for strategic investments aimed at accelerating growth. Through such investments, we will endeavor to maintain stable, appropriate dividends while at the same time ensuring sufficient risk management capabilities. We are confident that this will enable us to attain the ¥70.0 billion target we have set for consolidated operating income in fiscal year 2021, the final year of DIC111. We have adopted return on invested capital (ROIC) as an indicator of investment efficiency and earnings before interest, taxes, depreciation and amortization (EBIDTA)\*, used globally as a measure of a company's profitability.

\* Differences in interest rates and methods for calculating taxes and depreciation make it impossible to directly compare the profitability of companies in different countries and territories using simple income figures. Because it minimizes these differences, EBITDA is widely used around the world to assess the relative profitability of companies.

## Ensuring the DIC Group is loved and respected worldwide by maintaining effective ESG and human resources management

### I Strengthening Our Management Foundation

Against a backdrop of rapid social change, promoting qualitative reforms in businesses and strengthening our management foundation will be crucial to our ability to respond appropriately and achieve sustainable growth. To this end, we will promote ambitious initiatives in line with three key themes.

#### 1 Using digital transformation to reengineer business processes

We are taking active steps to advance digitization, which we acknowledge will dramatically change our business processes. In production, we are using digital technologies to further automation and enhance the visibility of various data with the goal of improving quality and efficiency. In R&D, we are reengineering business processes by utilizing materials informatics (MI), which involves applying material properties databases and AI to materials science.

Guided by DIC111, we launched a project that employs two main approaches to this challenge. The first is using backcasting to formulate future predictions that take into account advances in IT and other external changes. The second involves exploring how to elevate current themes and what sort of future we can create by doing so. Such initiatives will focus on, among others, advancing factory automation, discovering new chemical materials and creating new business models.

#### 2 Human resources management

The success of our efforts to develop new business models is linked inextricably to our ability to bring together the expertise and energy of diverse human resources. To this end, we inaugurated WING, a program with four core themes that seeks to rally our diverse human resources to enhance our responsiveness to social change and drive diversity management, through which we will transform DIC's fundamental identity. Of paramount importance is to reform work styles to capitalize on individual talents, particularly by shifting the focus of evaluation from quantity to quality. At the same time, we will establish a new global human resources system and a system for selecting our next management team to help us uncover new core human resources from among the more than 20,000 DIC Group employees in 64 countries and territories, as well as to ensure that we have the right people in the right places. To facilitate the efficient execution of these initiatives, in fiscal year 2019 we established the Human Resources Strategy Department.

#### Human resources management (WING)

Work Style Reform
Reform work styles to capitalize on diversified individuality
HR Infrastructure Reform
Adopt global human resources system and unify Group system
Next Management Selection
Establish system to appoint the next management team
Global Talent Development
Develop global human resources

### 3 Promoting ESG management, including the setting of numerical targets










Recent years have reconfirmed our awareness of the fact that addressing environmental, social and governance (ESG)-related issues is crucial to realizing sustainable growth and that this is what ultimately determines corporate value over the long term. In fiscal year 2018, we established the ESG Unit to facilitate a more systematic approach to related initiatives. Group companies continue to work as one to promote a variety of efforts worldwide and have set a number of specific numerical targets.

In the area of environmental issues, we aim to reduce carbon dioxide (CO<sub>2</sub>) emissions across global DIC Group sites by 30% from the fiscal year 2013 level by fiscal year 2030. To this end, we encourage sites to introduce or switch entirely to energy from renewable sources, including solar power and biomass. In May 2019, we declared our support for the Task Force on Climate-related Financial Disclosures (TCFD), pledging to disclose climate-related information in line with TCFD recommendations going forward. We also remain committed to effective stewardship of the products we provide and have stepped up efforts to develop products such as inks made with bio-derived materials and highly recyclable polystyrene. As an outgrowth of this, we introduced a proprietary sustainability index that evaluates businesses based on environmental impact and contribution to the aforementioned targets, underscoring our commitment to developing products and solutions that benefit both customers and markets. We have aligned this index to the United Nations' Sustainable Development Goals (SDGs).

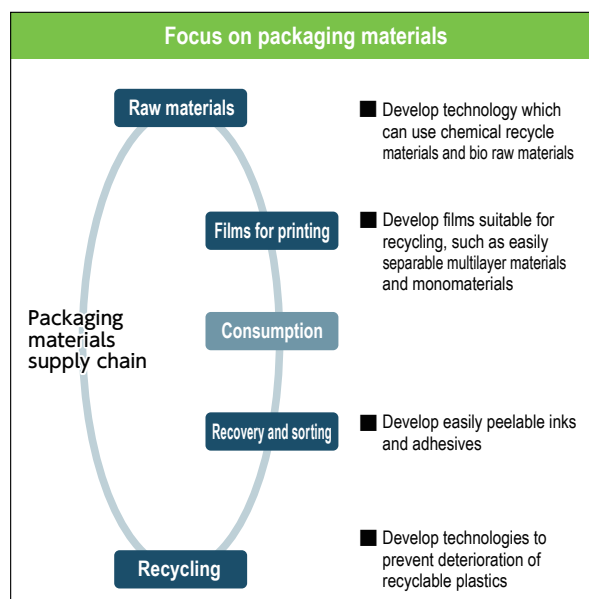
Note: For more information on the SDGs, please see page 37.



#### Introduced a proprietary sustainability index

Social issues	Primary value of DIC products
<p>Climate change Resource conservation</p>     <p>SDGs Goals 7, 13, 14 and 15</p>	<ul style="list-style-type: none"> <li>● Contain renewable raw materials</li> <li>● Energy saving and thermal insulation</li> <li>● Reduce weight</li> <li>● Cope with marine plastics</li> </ul>
<p>Sustainable use of natural resources</p>    <p>SDGs Goals 9, 11 and 12</p>	<ul style="list-style-type: none"> <li>● Recyclable</li> <li>● Reduce waste</li> <li>● Long life</li> <li>● Reduce volume</li> </ul>
<p>Food, safety and health</p>   <p>SDGs Goals 2 and 3</p>	<ul style="list-style-type: none"> <li>● Health and comfort</li> <li>● Reduce food waste</li> <li>● Safety</li> <li>● Low VOCs</li> </ul>

#### Enhanced measures to cope with waste plastic and marine plastics



Under the “social” heading, we also remain committed to furthering the incorporation of diversity into management to create a corporate culture that allows a wide range of individuals to reach their full potential. In May 2018, we formulated the DIC Group Human Rights Policy, which conforms with global codes governing human rights to guide related initiatives in the years ahead.

Efforts to address governance-related issues include creating a system based on Japan's Corporate Governance Code and establishing key performance indicators (KPIs) to measure diversity in management, including the percentage of foreign nationals and women in executive positions, both of which we intend to boost to 30% by fiscal year 2025.

In closing, as a manufacturer of fine chemicals we continue to recognize ensuring operational and occupational safety, reducing our impact on the environment and promoting the stringent management of chemical substances as fundamental to our business activities, and to see “doing the right thing and doing it right” as the true way forward. We pledge to continue working to ensure that DIC remains a company that is loved and respected worldwide.



# New Medium-Term Management Plan: DIC111

DIC has formulated a new medium-term management plan, DIC111, to clarify strategies for transforming its business portfolio, that is, for building a sophisticated portfolio focused on ESH-related issues and social changes by advancing qualitative reforms in existing core businesses and creating new businesses with the potential to become mainstays.

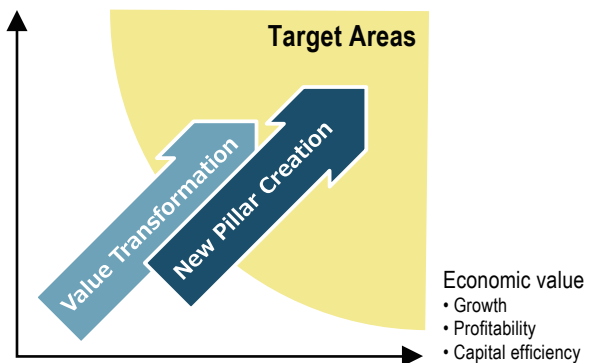
## I DIC's Future Vision

- Establish a vision based on proactive efforts to address key imperatives arising from social changes such as the spread of digitization and ESH-related issues, including those affecting the global environment and food supplies

**Become a unique global company that is trusted by society by providing value (safety and peace of mind, color and comfort)**

Social value  
• Sustainability  
• Contribution to markets

### Two strategies for business portfolio transformation

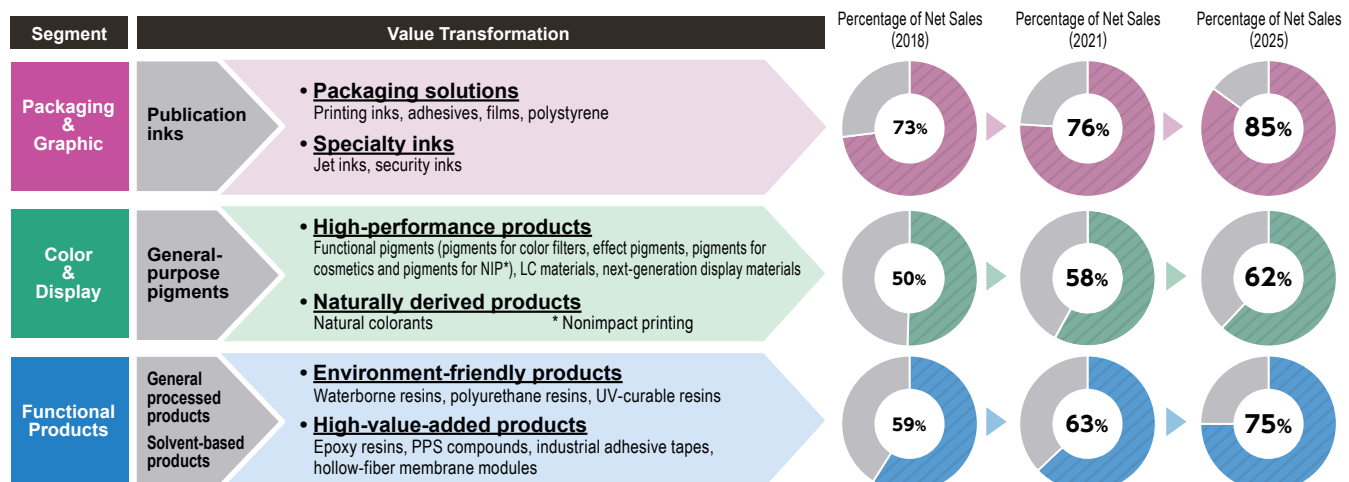


## I Basic Strategies: Business Portfolio Transformation to Achieve Growth

### 1 Value Transformation

**Generate sustainable cash inflow by making qualitative reforms to businesses**

- Bolster competitiveness by transforming DIC's business structure  
Shift from businesses vulnerable to macroenvironmental changes to those with differentiated high-value-added products
- Make businesses more conscious of social value  
Shift to businesses with more of a focus on value provided to customers and markets and on sustainability throughout product life cycles



### 2 New Pillar Creation

**Create new pillars by elevating and gaining competencies in priority areas**

- Create new businesses from the perspective of ESH-related issues and social changes  
Contribute to the resolution of challenges through business activities by identifying areas at the intersection of ESH-related issues/social changes and DIC's core competencies
- Make active use of external resources  
Help establish new social ecosystems through M&As and the use of corporate venture capital (CVC)

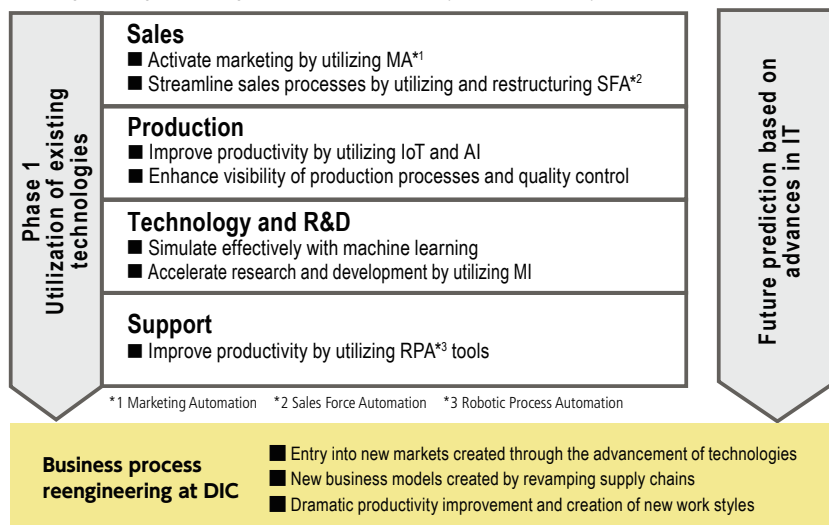
Priority area	ESH-related challenges	DIC's competencies	Targets
<b>Electronics</b>	• High-speed communications • Shift to AI, IoT and the Internet of Everything (IoE)	Optical control technology Design technologies for functional materials Dispersion and ink technologies	• <b>Next-generation display</b> QD inks, peripheral materials • <b>PCB, semiconductors, sensors</b> Insulating and conductive materials, sensors
<b>Automotive</b>	• Connected • Autonomous • Shared • Electric	Composite technologies	• <b>Multi-materialization</b> CFRP, expanded lineup of engineering plastics • <b>Next-generation battery materials</b> Inorganic active materials for negative electrodes and binder resins
<b>Next-Generation Packaging</b>	• Food issues • Food safety and security • Marine plastics • Distribution revolution	Global channels Packaging solutions	• <b>Approach to safety, security and food loss</b> Barrier materials • <b>Sustainable packaging</b> Monomaterials, recyclable and biodegradable materials
<b>Healthcare</b>	• Health and longevity • Food safety and security	Algae cultivation technology Color materials	• <b>Replacement of artificial colorants</b> Natural colorants for foods and beverages • <b>Nutrition</b> Functional foods, supplements

# I Strengthening Management Infrastructure

## 1 IT and Human Resources Strategies

### Digital transformation for business process reengineering

- Realize targeted business process reengineering by using backcasting to formulate future predictions that take into account advances in IT, while at the same time using existing technologies to improve efficiency over the three years of DIC111



### Human resources management

- Rally diverse human resources as the source of DIC's competitiveness as a global company (WING)



## 2 Promotion of ESG Management

### Set targets in each area of ESG and accelerate implementation of initiatives

<b>Environmental</b> <ul style="list-style-type: none"> <li>Reduce CO<sub>2</sub> emissions attributable to production</li> <li>Supply products and solutions that contribute to sustainability</li> </ul>	<b>Target: 30% reduction of CO<sub>2</sub> emissions*1 (2030)</b>
<b>Social</b> <ul style="list-style-type: none"> <li>Promote diversity and work style reform</li> <li>Enforce "safety first" principle</li> </ul>	<b>Target: Rate of female employees in management positions in Japan:</b> 4.4% (2018) ⇒ 8% (2021) ⇒ 20% (2025) <b>Rate of foreign employees in Japan:</b> 1.0% (2018) ⇒ 5% (2021) ⇒ 10% (2025)
<b>Governance</b> <ul style="list-style-type: none"> <li>Diversify management team</li> <li>Reflect cost of capital in decision making</li> </ul>	<b>Target: Rate of foreign nationals or women in executive positions:</b> 15% (2018) ⇒ 20% (2021) ⇒ 30% (2025)

\*1 Compared with 2013

# I Cash Flow Management

## Budget ¥250.0 billion for strategic investments aimed at business portfolio transformation and balance financial health and shareholder returns

- Prioritize efforts to maximize cash flow by promoting business portfolio transformation, guided by DIC111, and budget ¥250.0 billion for strategic investments aimed at accelerating growth, while working continuously to strengthen financial health
- Shareholder returns (Dividend payout ratio): Around 30%  
Pay dividends in line with profit growth maintaining stable dividends
- Financial health (D/C ratio): Around 50%  
Support growth by maintaining financing and risk management capabilities

Dividend  
payout ratio  
**30%**

D/C ratio  
**50%**

# I Quantitative Targets

Set target for consolidated operating income of ¥70.0 billion in the final year of DIC111. Achieve target by shifting to high-value-added products.

(Billions of yen/%)

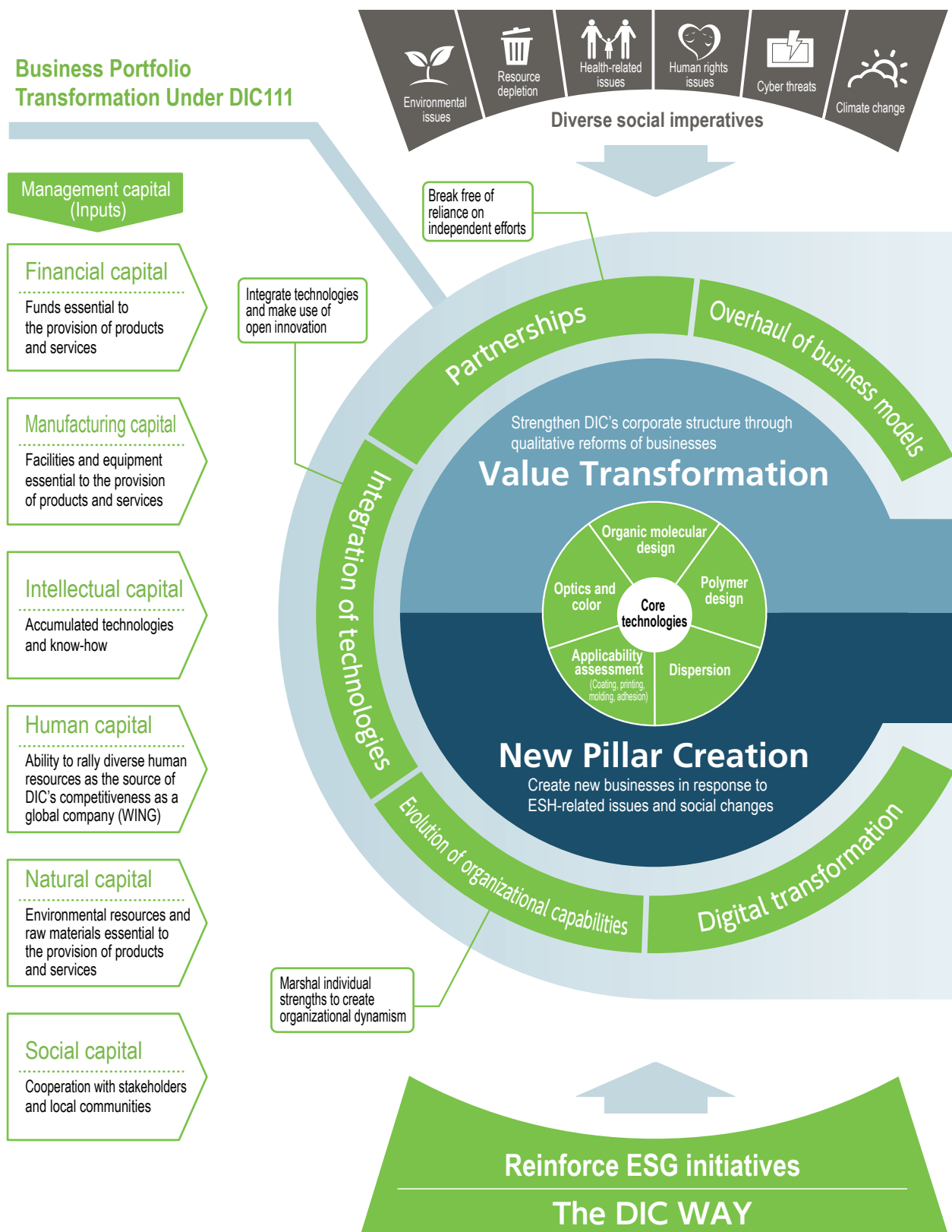
	2018 Actual	2019 Target	2020 Target	2021 Target	Change (2021/2018)
Net sales	¥805.5	¥850.0	¥900.0	¥950.0	+18%
Operating income	48.4	52.0	60.0	70.0	+45%
Operating margin	6.0%	6.1%	6.7%	7.4%	—
Net income*1	32.0	35.0	37.0	45.0	+41%
EBITDA*2	81.4	87.0	91.0	102.0	+25%
EBITDA to net sales ratio	10.1%	10.2%	10.1%	10.7%	—
ROE	10.4%	10–12%			—
¥/US\$	¥110.46	¥110.00	¥110.00	¥110.00	

\*1 Net income attributable to owners of the parent

\*2 EBITDA = Net income\*1 + Total income taxes + (Interest expenses – Interest income) + Depreciation and amortization







# The DIC Group's Approach to Value Creation

## Delivering Color & Comfort





With the aim of ensuring a sustainable society, the DIC Group strives to provide products and solutions that respond to the needs of markets and its customers and add color and comfort to life.

Segment	Outputs	Outcomes
 Packaging & Graphic	Next-generation packaging inks and coatings, functional packaging adhesives, industrial-use jet inks, others	Packaging materials that bring safety and peace of mind 
 Color & Display	Pigments for color filters, pigments for cosmetics, effect pigments, natural colorants, LC materials, next-generation display materials, others	Color and display materials that make life colorful 
 Functional Products	Sustainable polymers, environment-friendly PPS compounds for automotive components, high-performance industrial adhesive tapes, others	Functional products that add comfort 

Business area	Outputs	Outcomes
 Electronics	Technologies and functional products that support the spread of digitization	Provide functional materials that contribute to a digital society
 Automotive	Technologies and functional materials that underpin efforts to transform the automotive industry	Provide composite materials that contribute to a mobility society
 Next-Generation Packaging	Packaging materials that help reduce food loss and support sustainability	Provide packaging solutions that contribute to environmental sustainability
 Healthcare	Algae cultivation technologies with applications extending from food safety to advanced medical care	Provide fine chemicals produced using biotechnological processes that contribute to health and longevity

#### SDGs



SDGs Goals  
2, 3, 6, 7, 9, 11,  
12, 13, 14 and 15

## Messages from Top Executives at Regional Headquarters



### Sun Chemical Corporation

President and CEO  
**Myron Petruch**

### Ensuring the Success of DIC111

With over \$3.0 billion in revenue and more than 8,000 employees, Sun Chemical is a proud member of the DIC group. Sun Chemical is a global leader in inks, pigments and rapidly growing in advanced materials, where many of these products have been developed internally by DIC. As we embark on a new Mid Term Plan with DIC111, we look forward to the opportunities and challenges presented by a changing and dynamic marketplace. We will continue to upgrade our products and market portfolio. We will have a global focus yet service our customers' needs locally.

Anchored by our core ink and pigment businesses, Sun Chemical is establishing a platform of high growth, high margin specialty products. These products, which have been added to our portfolio through an active acquisition program and internal development, provide Sun Chemical the opportunity to enter or enhance



### DIC Asia Pacific Pte Ltd

Managing Director  
**Paul Koek**

### Transformation and Growth through Collaboration

The Asia Pacific region is a vibrant and one of the fastest growing region. It is made up of several countries, which is rich in culture, language and ethnicity. With a dynamic and professional workforce of 3,600 employees, we are presently operating in 11 countries with 19 facilities across Asia Pacific.

The Group's vision as embedded in the DIC111 is on the principle of sustainable growth through value transformation. This is against the backdrop where the global economy has significantly changed and the fact that globalisation itself has now taken a different meaning. All this coupled with the dawn of the Fourth Industrial Revolution has taught us that change and transformation is inevitable. The once sheltered Asia Pacific Region is now vulnerable but this can bring us many opportunities.

As part of the strategy to support the DIC111 in the Asia Pacific region, the concept of the "3 S" will be implemented. This will entail the Support and the



### DIC (China) Co., Ltd.

Chairman  
**Shinsuke Toshima**

### Promoting Our New DIC111 Medium-Term Management Plan

DIC (China) oversees the operations of the DIC Group in Greater China, encompassing 29 companies—including two in Hong Kong and five in Taiwan—and approximately 2,300 employees. Having set a target for regional net sales of ¥85 billion-plus for fiscal year 2019, we recognize that achieving Value Transformation, a core policy of DIC111, is the most critical challenge we face in the rapidly evolving local economy. Accordingly, we will press ahead with decisive efforts to make qualitative changes to our core businesses, maintaining an accurate grasp of the direction of market change.

While the size and potential of the market in Greater China cannot be denied, the existence of a wide range of regional business risks is another point that is often raised. Of particular note in recent years is the swift and seemingly relentless deployment of environmental regulations in the PRC, which in

its position in valuable growth markets such as cosmetics, security inks, plastic and ID cards and printed electronics.

We have benefitted from the ability to leverage the significant resources of the DIC group as we execute our strategy. The world-class research and development resources of the DIC group are the strongest among all our competitors. These resources allow Sun Chemical to continually present our customers and brand owners with new and innovative products and ideas to enable them to succeed in their markets, thereby strengthening our business relationships.

As we continue to develop our product portfolio in order to bring new and innovative products to our customers, we

remain mindful of our obligation to do so in a responsible manner that considers our impact on the environment. We are committed to the promotion and development of sustainable products that are eco-friendly and reduce the environmental footprint that we and our customers leave on the planet.

We are excited about our future at Sun Chemical and we are committed to doing our part to make the DIC group and DIC111 a success.

strengthening of the functional and specialist organisations that we will need to transform into. Capitalising on the professional skillsets of our valued employees and technology, new business pillars aligned to the sustainable theme will be identified, developed and launched. The drive for business alignment through partnership and M&A's activities will be one of our main focus.

Through Specialization, the "Shared Economy" framework will be expounded, driven and implemented. Driving business efficiency through the use of digital tools and analytics, will help the region to focus on "doing things right the first time" while enhancing our valued Customer's experience and touchpoints through sustainable quality products.

Capitalising on the Group's strength in technology and aligning with the fast changing laws in the Region, DIC

Asia Pacific group will also drive the Sustainability pillar. This will improve and embrace our outreach to our valued Customers – through "Color and Comfort", business collaboration with our partners through our practice of the "DIC Way" and promoting "Diversity, Mobility and Transparency" in a safe work environment for our valued employees. We strongly believe that through effective collaboration with all our stakeholders, the drive to success is assured.

addition to causing considerable confusion in the market has given rise to uncertainty regarding business continuity. The DIC Group must take measures to prepare for near-future risks in a number of its businesses. However, if we look at it from another perspective this may also be a major business opportunity. That is to say, the certainty that multiple companies will drop out of the market will likely help dispel the futile, price only-based competition that currently dominates every sector as a result of overcapacity for some time. In such a market, the critical competitive strength will be brand reliability.

Against this backdrop, as a member of the DIC Group—an organization strongly committed to advancing sustainability—we will actively and earnestly promote

ESG-related initiatives, leveraging the trust we earn to expand our operations and contributing to achievement of the targets of DIC111.

In the current fiscal year, we established a Corporate Communications Department at DIC (China) with the aim of bolstering recognition of the DIC name and increasing the Group's profile. The new department will work with DIC's Corporate Communications Department to promote effective branding efforts in Greater China and support the efforts of product divisions.

## Topic

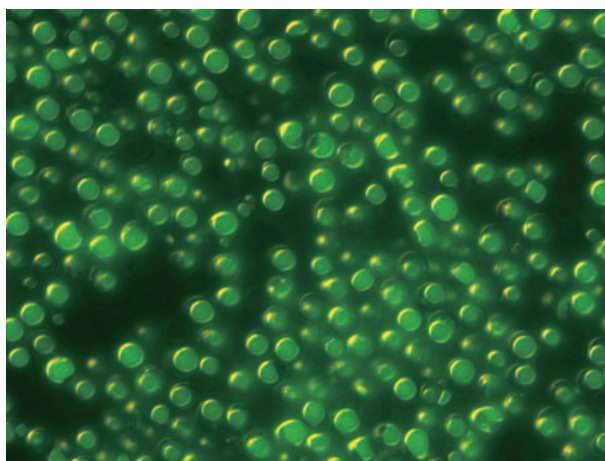
### 1

## DIC Teams Up with Biotech Startups in the Development of Naturally Derived Materials

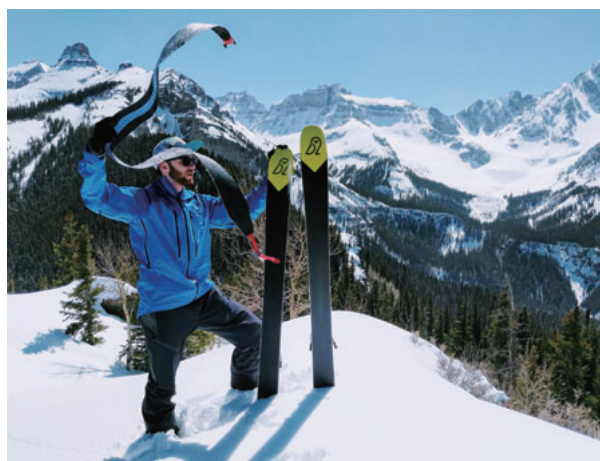
### 1 DIC and U.S. Firm Checkerspot Enter Into JDA for Advanced High-Performance Materials

DIC and Checkerspot, Inc., a high-performance materials innovation company, entered into a joint development agreement (JDA) to create a new class of novel, high-performance polyols. Checkerspot, which boasts unique capabilities in biotechnology, including genetic modification technologies and highly efficient cultivation systems for algae, creates original materials from sugars and other carbohydrate molecules generated from CO<sub>2</sub>. In addition to aligning with its goal of contributing to the realization of a low-carbon society, partnering with Checkerspot is a clear fit for DIC from the perspective of its Value Transformation strategy. The Company also anticipates synergies with its own extensive and pioneering cultivation technologies for Spirulina.

The agreement will enable the two companies to leverage DIC's compounding, polymer design technologies and Checkerspot's bio-derived materials technologies to develop products that reduce the use of petroleum-based ingredients and provide novel performance and functions. The partnership will focus on products and formulations with applications in core DIC business areas, including adhesives, coatings, printing inks and lubricants. DIC will capitalize on the performance features of such materials to develop distinctive products, underpinning its efforts to deliver new value and create new markets.



Algae observed with a microscope



Ski and ski wear made with materials manufactured by Checkerspot

### 2 DIC Invests in Japanese Startup to Develop Bio-Derived Chemicals

On August 31, 2018, DIC completed investment in Tokyo-based Green Earth Institute Co., Ltd. (GEI), a biotech startup carved out from Research Institute of Innovative Technology for the Earth (RITE) to commercialize sustainably produced "green" chemicals. GEI is engaged in the development and commercial production of bioethanol from nonfood biomass feedstocks and of amino acids for use as food and animal feed additives. GEI has leveraged innovative *Corynebacterium* fermentation technologies to realize a low-cost production process for bio-derived chemicals. The two companies will also capitalize on DIC's global market network, as well as its ability to develop applied products.

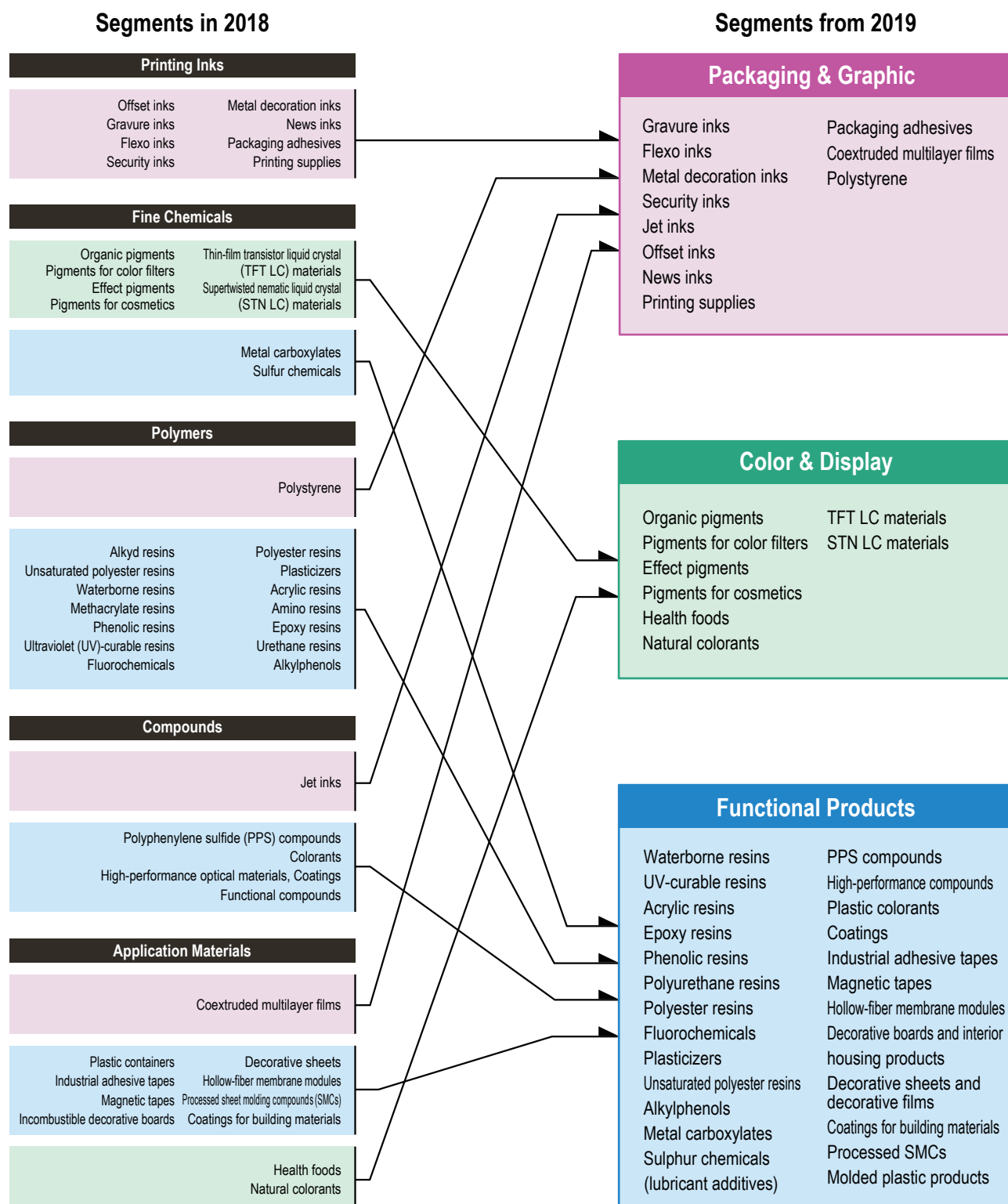
DIC is investing in and working with biotech startups with the aim of strengthening its biotechnologies that use algae and other microorganisms and expanding related businesses. Through such efforts, the Company will continue working to expand its portfolio compatible with a sustainable society.



## Topic 2

# Prior to the Announcement of DIC111, the Company Announced a New Organization that Clarified the Value Provided by DIC

With the aim of reflecting its commitment to addressing social imperatives and deliver value to society, DIC established business units based on the concepts of market and value provided. The Company also expanded the scope of each business unit to facilitate the swift reallocation of resources.



# Packaging & Graphic

## Packaging Materials that Bring Safety and Peace of Mind



SDGs Goals 12, 13 and 14



President, Packaging & Graphic Business Group  
**Hideo Ishii**



This segment includes not only printing inks but also adhesives, materials and other products and solutions for packaging applications, the markets for which continue to see robust growth in emerging economies in Asia and elsewhere.



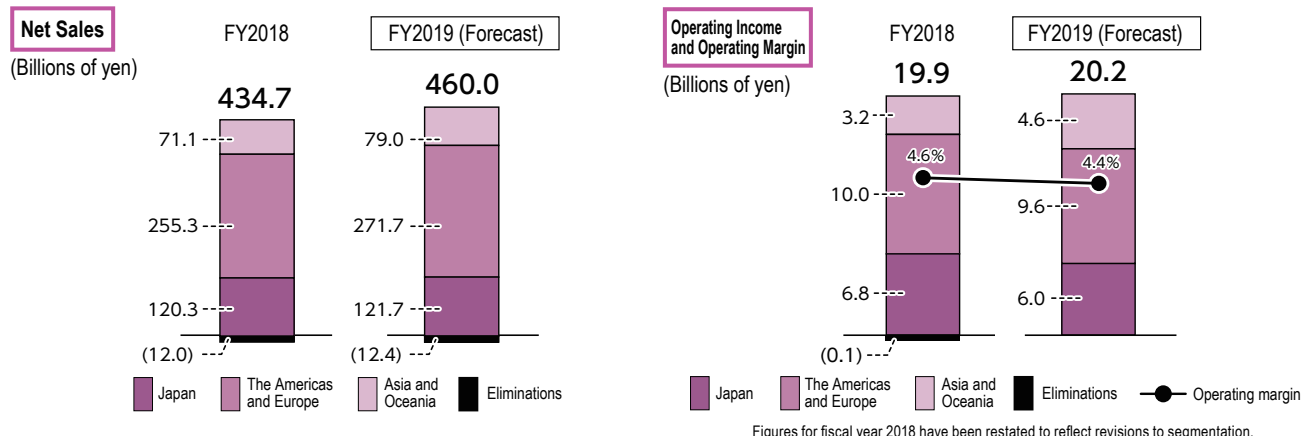
### [Printing Materials]

- Gravure inks
- Flexo inks
- Metal decoration inks
- Security inks
- Jet inks
- Offset inks
- News inks
- Printing supplies

### [Packaging Materials]

- Packaging adhesives
- Coextruded multilayer films
- Polystyrene

## Segment Operating Results



## Business Strategies Under DIC111

### Packaging Solutions

**Products: Gravure inks, flexo inks, adhesives, films films and polystyrene**

In the promising market for packaging materials, the DIC Group will endeavor to accelerate the growth of its businesses through product portfolio expansion. To this end, the Group will focus on developing and improving sustainable products in response to the changing needs of packaging manufacturers, enhancing production configurations for gravure inks and adhesives in India, Vietnam and the PRC, and expanding the scale of its operations through joint ventures and M&As.

### Publication Inks

**Products: Offset inks and news inks**

Anticipating a further decline in demand in the publications market, the Group will work to rationalize its operations by rightsizing globally and optimizing its Groupwide production configuration for publication inks and news inks.

### Specialty Inks

**Products: Jet inks and security inks**

With the aim of furthering global management integration and expanding its selection of high-value-added products, the Group will aggressively invest resources in the area of security inks and seek to enhance profits by capturing demand in Asian markets, as well as by cultivating applications and expanding production capacity in the PRC for jet inks.

(Billions of yen)

	Business policy	Quantitative targets (Upper row: Net sales, Lower row: Operating income)			
		FY2018 (Actual)	FY2019 (Target)	FY2020 (Target)	FY2021 (Target)
Packaging & Graphic	Concentrate resources on high-value-added products (packaging solutions and specialty inks)	¥434.7	¥460.0	¥476.7	¥494.0
		¥19.9	¥20.2	¥23.3	¥26.0

## TOPIC DIC and Sun Chemical Acquire Luminescence Holdings

In February 2018, DIC and Sun Chemical acquired Luminescence Holdings Ltd., a manufacturer of security inks based in Essex, in the United Kingdom. Inks manufactured by Luminescence are used in security printing, that is, the printing of banknotes, tax stamps, passports, ID cards and other items for which the prevention of forgery and tampering is a key concern. In the year since, Luminescence has seen robust sales, exceeding original estimates, and its operating margin has increased. Despite rising raw materials prices, attributable to the high price of oil, these results underpinned an improvement in profitability in the DIC Group's printing inks business in the Americas and Europe in fiscal year 2018.

Sun Chemical is the leading manufacturer of printing inks in the Americas and Europe and boasts a product portfolio encompassing offset inks, flexo inks, gravure inks and coatings. While it already had a security inks business, the DIC Group looks forward to capitalizing on this acquisition—which brings together Luminescence's technological capabilities and the Group's vast global sales network—to boost its share of this market and cement its competitive advantage.





# Color & Display

## Color and Display Materials that Make Life Colorful



SDGs Goals 3 and 13



President, Color & Display Business Group  
**Masami Hatao**

Products in this segment include a wide variety of materials indispensable to digital devices, including LC materials and organic pigments for color filters, as well as pigments for cosmetics, natural colorants and other materials that are safe and gentle for people to use.



### [Color Materials]

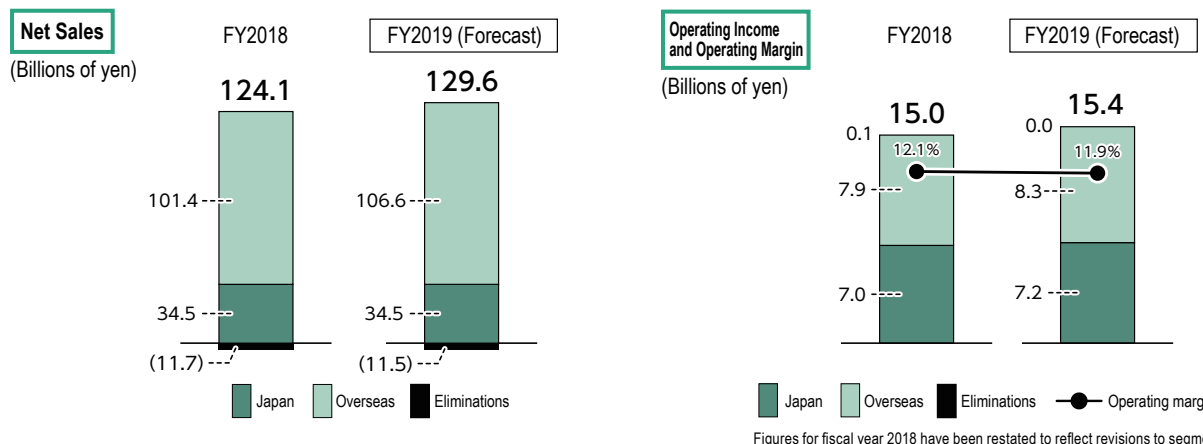
- Organic pigments
- Pigments for color filters
- Effect pigments
- Pigments for cosmetics
- Health foods
- Natural colorants

### [Display Materials]

- Thin-film transistor liquid crystal (TFT LC) materials
- Supertwisted nematic liquid crystal (STN LC) materials



## Segment Operating Results



## Business Strategies Under DIC111

### Color Materials

**Expand functional pigments (pigments for cosmetics, effect pigments and pigments for nonimpact printing (NIP))**

In addition to seeking to establish a leading position globally through M&As, the DIC Group will take steps in the area of pigments for cosmetics to increase its production capacity for specialty pigments and enter the personal care market by expanding its processed pigments business. In the area of effect pigments, the Group will endeavor to catch up to demand by broadening its lineup of

designable metallic and pearlescent pigments, while in pigments for NIP efforts it will emphasize expanding its product lineup by bringing new products into the digital printing market.

### Natural colorants (*Linablue*®)

The Group will make a full-scale entry into the promising market for food and beverage colorings.

### Display Materials

#### Functional pigments (pigments for color filters)

The Group will endeavor to maintain its global leading position by broadening its product lineup.

#### TFT LC materials

The focus here will be on leveraging patent and pricing strategies to expand sales and accelerating market development efforts in the PRC.

#### Quantum dot (QD) inks

The Group will continue to promote the development of QD inks, which continue to hold promise as next-generation display materials.

		(Billions of yen)			
	Business policy	Quantitative targets (Upper row: Net sales, Lower row: Operating income)			
		FY2018 (Actual)	FY2019 (Target)	FY2020 (Target)	FY2021 (Target)
Color & Display	Ensure balance between acceleration of growth through shifting of resources to strategic products and maintenance of stability through rationalization of existing products	¥124.1	¥129.6	¥140.0	¥149.4
		¥15.0	¥15.4	¥16.0	¥18.2

## TOPIC DIC Acquires High-Purity Iron Oxide Pigments Business

In July 2018, DIC and Sun Chemical acquired the high-purity iron oxide pigments business of the Cathay Industries Group, the production base of which is located in Valparaiso, Indiana, in the United States.

High-purity iron oxide pigments produced at the Valparaiso site are used extensively in lip color, eye shadow, foundation primer and other cosmetics products. These pigments have obtained certification under the COSMOS (COSmetic Organic Standard) program—the global standard for organic and natural cosmetics—and are thus expected to help grow pigments for cosmetics into a core component of the DIC Group's pigments business, bolstered by market growth, as well as by rising awareness of product safety and the tightening of pertinent regulations. As such, this business will also contribute to the Group's sustainability. Looking ahead, the DIC Group will actively build on this acquisition to expand its global market share and reinforce its production infrastructure.



# Functional Products

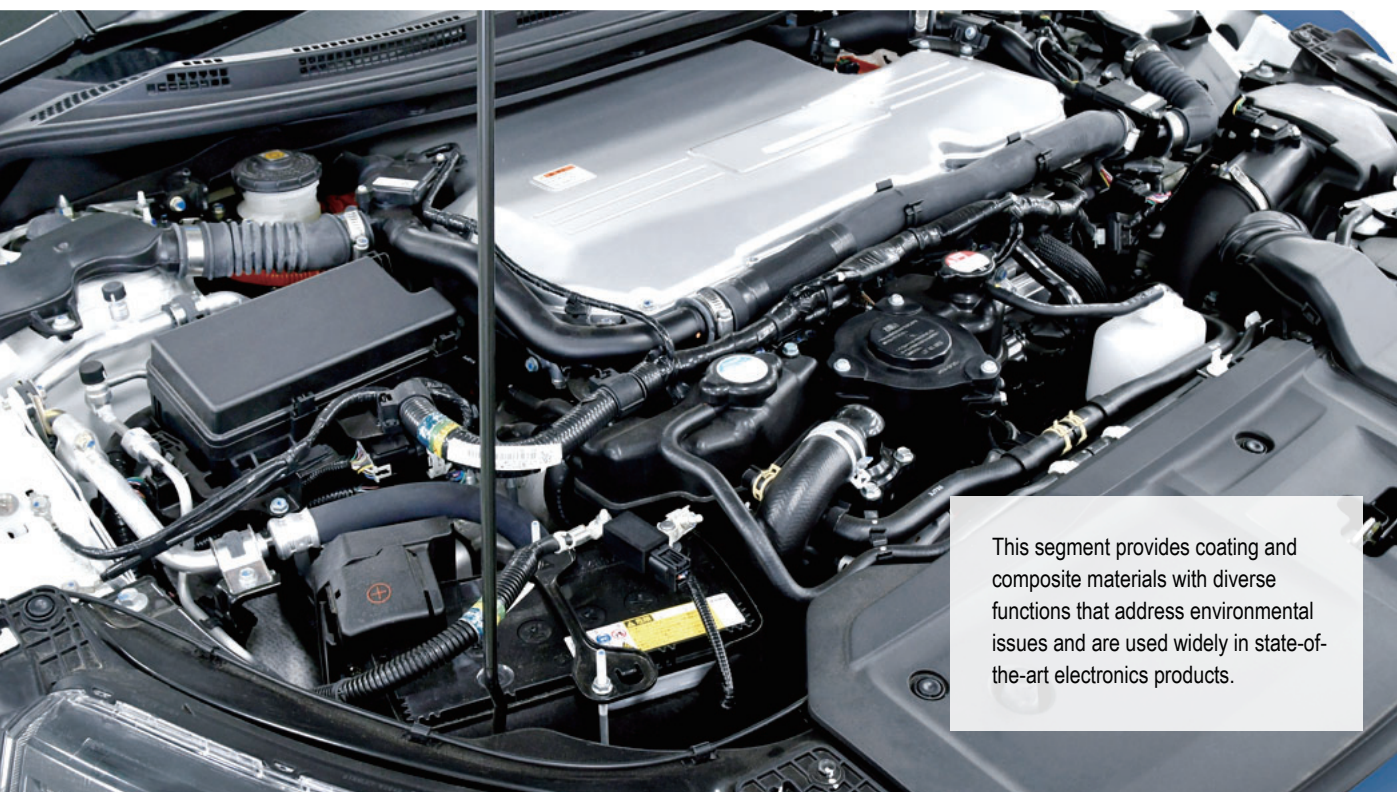
## Functional Products that Add Comfort



SDGs Goals 6, 12 and 13



President, Functional Products Business Group  
**Kazuo Hatakenaka**



This segment provides coating and composite materials with diverse functions that address environmental issues and are used widely in state-of-the-art electronics products.



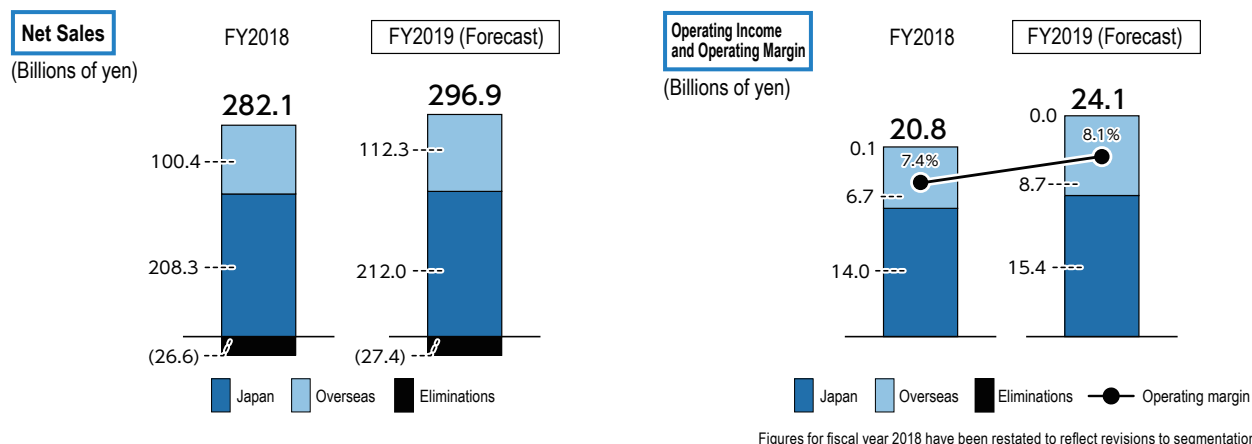
### [Performance Materials]

- Waterborne resins
- Ultraviolet (UV)-curable resins
- Acrylic resins
- Epoxy resins
- Phenolic resins
- Polyurethane resins
- Polyester resins
- Fluorochemicals
- Plasticizers
- Unsaturated polyester resins
- Alkylphenols
- Metal carboxylates
- Sulphur chemicals (lubricant additives)

### [Composite Materials]

- Polyphenylene sulfide (PPS) compounds
- High-performance compounds
- Plastic colorants
- Coatings
- Industrial adhesive tapes
- Magnetic tapes
- Hollow-fiber membrane modules
- Decorative boards and interior housing products
- Decorative sheets and decorative films
- Coatings for building materials
- Processed sheet molding compounds (SMCs)
- Molded plastic products

## Segment Operating Results



## Business Strategies Under DIC111

### Global Strategic Products that Will Expand Sales of Environment-Friendly Products

**Products:** Waterborne resins, UV-curable resins, acrylic resins, polyurethane resins, polyester resins and PPS compounds

The DIC Group will invest actively in products that are not only environment-friendly but also have a positive impact on markets and society. The Group will also seek to expand its resins production bases in Asia and acquire next-generation engineering plastics through M&As. In addition to expanding sales in key markets (coatings, adhesives and products for automotive applications), the Group will work to design sustainable polymers to promote the use of recyclable and biomass-derived raw materials.

### Efforts to Pursue Efficiency and Improve Profitability

**Products:** Unsaturated polyester resins, plastic colorants, high-performance compounds, printed products, laminated products and others

The Group's efforts here will focus on maximizing profitability by rationalizing both low-profit businesses and sites and integrating production facilities to improve efficiency.

### Highly Profitable Products with Functions that Provide Comfort

**Products:** Epoxy resins, plasticizers, fluorochemicals, phenolic resins, hollow-fiber membrane modules, industrial adhesive tapes and others

In addition to responding to sophisticated needs and delivering outstanding functionality in niche markets, the Group will launch highly profitable next-generation resins for optical and electronics applications, expand sales of industrial adhesive tapes for mobile and automotive applications, make a full-fledged entry into and expand share of the market for large-scale hollow-fiber membrane modules, and work to ensure solid growth in the area of molding compounds for medical applications.

		(Billions of yen)			
	Business policy	Quantitative targets			
		(Upper row: Net sales, Lower row: Operating income)			
		FY2018 (Actual)	FY2019 (Target)	FY2020 (Target)	FY2021 (Target)
Functional Products	Achieve social contributions and growth by strengthening lineup of environment-friendly and functional products	¥282.1	¥296.9	¥318.4	¥343.2
		¥20.8	¥24.1	¥28.4	¥33.6

## TOPIC DIC Receives Incentive Award in the 17th GSC Awards for its Development of Sheet-Form Heat Storage Material

DIC received an Incentive Award in the 17th Green Sustainable Chemistry (GSC) Awards, conferred by the Japan Association for Chemical Innovation (JACI), for its development of a sheet-form heat storage material. Phase change materials (PCMs), which utilize the thermal properties of phase change—the process of changing from liquid to solid and vice-versa—liquefy at a certain temperature above melting point. PCMs laminated together with other materials have long been used in construction, but difficulties in altering size and poor workability have prompted housing builders and general contractors to call for the development of new materials.

Leveraging its proprietary coating and compounding technologies, DIC developed a technology for uniformly dispersing PCMs into resin with no degradation of properties to create a thick film, thereby preventing the materials from oozing and leaking during phase change. In addition to performance comparable to that of PCMs in laminated packages, the resulting sheet-form heat storage material can be cut, bent and fastened into place with screws on-site. DIC's sheet-form heat storage material can also be laminated together with a variety of other materials such as plasterboard and flooring, expanding options for use in houses and other buildings and facilitating use in walls and ceilings, which is difficult with conventional products.





## Product Development Designed to Create New Value

The DIC Group is providing distinctive solutions that respond to evolving needs related to safety, peace of mind and the environment arising from social changes.

### Packaging & Graphic

#### Water-Based Flexo Ink for High-Resolution Printing on Flexible Packaging (*Marine Flex LM-R*)

SDGs Goals 3, 12 and 13



## Realizing Gravure Ink-Level High-Resolution Printing and Significantly Lower VOCs

### Value Creation

#### Expanded use of environment-friendly water-based flexo inks in the area of food packaging

The market for packaging inks today is dominated by solvent-based products, which boast outstanding wettability on plastic film substrates and dry swiftly after printing. Nonetheless, demand for water-based, UV-curable and other environment-friendly alternatives is rising sharply, underpinned by the need to address key social imperatives, including the lowering of volatile organic compounds (VOCs), which pollute the air and impact working environments; the curbing of global CO<sub>2</sub> emissions; and the reduction of energy consumed in printing.

While printing on packaging films centers on gravure printing, an intaglio printing process, and flexographic printing, a type of letterpress printing, the latter is leading the global shift toward water-based inks. The principal reason for this is that flexographic printing uses less ink than gravure printing, meaning that even when water-based inks—which dry more slowly than solvent-based inks—are used, drying requires little energy, facilitating superior productivity. However, the small volume of ink used makes high-density, high-precision printing difficult, as a result

of which flexographic printing has traditionally been seen as inferior to gravure printing, spurring demand for improvements.

Against this backdrop, in fiscal year 2015 DIC and DIC Graphics created a project team to develop a water-based flexo ink for use on flexible packaging for food products, cosmetics and other items, which is made primarily with plastic film. Leveraging its proprietary mixing and dispersion technologies, DIC succeeded in developing an innovative ink that achieves a high optical density, lifting print quality to a level similar to that obtained with gravure printing. The Company also revamped the resin binder, beginning with its structure, to prevent the ink's high density from weakening adhesion during lamination and to increase the resolubility of ink remaining on the printing plate following transfer to the print substrate, thereby ensuring the stability of print quality. The new ink, *Marine Flex LM*, which was announced at a trade show in October 2016, upended many preconceived notions of flexo inks.





**A Distinctively  
DIC Response**

## Securing the adoption of a new water-based flexo ink on the label for *Suntory Tennensui*

An innovative, environment-friendly offering, *Marine Flex LM* facilitated the DIC Group's entry into the market for packaging inks. However, sales volume fell short of expectations. One reason for this is the steep capital investment necessary for customers to switch from gravure printing to flexographic printing, as a result of which it is expected to take some time before the level of adoption in Japan catches up to that in Europe and the Americas. However, certain major beverage manufacturers have stepped up efforts to switch from oil-based gravure to water-based flexographic printing to reduce VOCs and CO<sub>2</sub> emissions and conserve energy use in printing on film for polyethylene terephthalate (PET) bottle wrap-around labels and sought to expand the range of products for which such labels are used. Convinced by this trend that its instinct had not been wrong, in July 2017 the project team steered its focus toward developing a new water-based flexo ink for wrap-around labels.

The way forward for the team remained challenging. While films for food packaging commonly consist of three film layers—a substrate and a top layer sandwiching an ink layer—that are laminated together, wrap-around labels comprise two laminated film layers, that is, an ultrathin substrate and a reverse-printed top layer. Moreover, PET bottles have ridges, which enhance

strength, recyclability and other properties, so labels must also be able to withstand contact and vibration during transport from factory to warehouse or store and the integrity of inks and label designs must be maintained even if bottles become soaked when used outdoors.

Leveraging the DIC Group's broad network, the project team asked companies to which potential customers consign the manufacture of wrap-around labels to evaluate the physical properties of prototypes, repeatedly conducting rigorous tests and making continual improvements. After resolving a number of challenges, in December 2018 the team achieved a water-based flexo ink that passed all material properties evaluation tests and boasted VOCs and CO<sub>2</sub> emissions (energy consumption) significantly lower than solvent-based gravure inks. The new ink and the *Marine Flex ECG* digital color management system, developed by DIC Graphics, together make it possible to use multicolor process printing instead of spot colors for printing on flexible packaging and thus to reduce wasted ink and improve operating rates for printing equipment. The new ink—*Marine Flex LM-R*—was chosen by Suntory Beverage & Food Limited for use on the labels of the 2.0-liter bottles of its core *Suntory Tennensui* water. Shipments to Suntory began in May 2019.

### **Comment** We look forward to seeing DIC continue to take the lead in raising awareness of environmental issues.

The Suntory Group places a strong emphasis on environmental protection in all areas of its operations. Recognizing the potential impact of environment-friendly water-based inks on the packaging industry as a whole, we became the first company to adopt DIC's *Marine Flex LM-R* water-based flexo ink. By more quickly developing increasingly innovative environment-friendly packaging, we can help pass on a sustainable global environment to the next generation. Accordingly, our focus is on driving our industry forward, rather than on maintaining the status quo. We look forward to seeing DIC continue to actively disseminate information on the environmental benefits of water-based flexo inks and encourage their use, as well as to raise awareness of environmental issues. Environment-friendly materials will continue to be an important consideration for packaging manufacturers, so we also look forward to new ideas and suggestions from DIC in the years ahead.

(From left)

General Manager, Packaging Material Department, Supply Chain Management Division, SUNTORY MONOZUKURI EXPERT LIMITED **Hiroyuki Iwai**

Packaging Material Department, Supply Chain Management Division, SUNTORY MONOZUKURI EXPERT LIMITED **Fuyuko Wakaumi**



### **KEY PEOPLE from DIC** We seek to build win-win relationships with new clients.

For this project, we secured the cooperation of companies to which customers consign label manufacturing and of printing companies—which together form the core of the wrap-around label supply chain—and thus benefited from their expertise in evaluating the physical properties and in flexographic printing with water-based inks. In this and other such efforts, we seek to build win-win relationships with new clients while at the same time deepening collaboration in both human and technological terms. This project also reinforced our belief that such an approach will be crucial to realizing the pledge to deliver packaging solutions that contribute to sustainability for the global environment outlined in DIC111.

(From left)

Sales Team 3, Tokyo Liquid Ink & Coatings Sales Group 3, Liquid Ink & Coatings Division, DIC Graphics Corporation **Akihiro Tsuchiya**

Manager, Dispersion Technical Group 4, Dispersion Technical Division 1, Tokyo Plant, DIC Corporation **Rikei Sasaka**

Liquid Ink Product Group, Osaka Branch, DIC Graphics Corporation **Toshiya Fuji**

Manager, Logistics Materials Sales Group, Composite Material Products Division, DIC Corporation **Hiroki Mitsuhashi**

Unit Leader, Next-Generation Packaging Material Business Unit, New Business Development Headquarters, DIC Corporation **Yoshiaki Fukuda**





## Increasing the Recyclability of Food Packaging to Reduce Waste and Contribute to Environmental Conservation

### Value Creation

### Packaging materials that bring safety and peace of mind

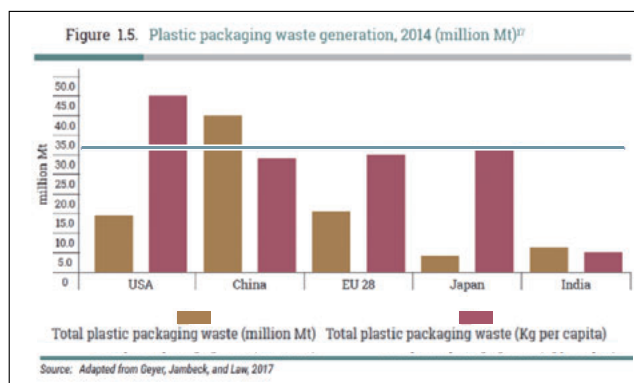
Paper and paperboard food packaging such as hamburger wrappers and take-out boxes for pizza and donuts are commonly coated with a thin layer of polyethylene to prevent grease from oozing out and creating a mess. However, because polyethylene is left behind when such packaging is chemically dissolved for recycling, it must be removed beforehand using a process called precipitation. In Japan, recovered paper and paperboard laminated with polyethylene is classified, based on its suitability for recycling, as rank B\* and applications for the resulting recycled paper are limited.

\* Classifications are determined by the Japanese Federation of Printing Industries and contained in its guidelines for recyclable printed matter.

Post-consumer plastic that finds its way into rivers and streams and eventually into the ocean as a consequence of improper disposal, among others, continues to increase sharply as the global population expands. Microplastics—tiny fragments of plastic created through degradation by waves, UV light and other processes that break down larger pieces of debris—have been identified as a particular concern because of the danger to people and ecosystems caused by their entry into the marine food chain. Accordingly, one target set forth in the SDGs, adopted at the UN Sustainable Development Summit in 2015, is to “prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution” by 2025. This has since become a critical theme, with participants in the 2018 G7 Summit, held in Charlevoix, Quebec, Canada, agreeing to reinforce related initiatives.

Having recognized this as an urgent challenge for the chemicals industry, DIC has begun developing products that will help address the issue of marine plastics by reducing waste from used food containers by increasing the recyclability of post-consumer food packaging and the materials therein. In October 2018, the Company announced the first of these, *HYDRECT*, a highly recyclable water-based coating varnish that boasts excellent resistance to water, oil and heat when coated on paper. In February 2019, DIC kicked off its new medium-term management plan, DIC111, to guide the Company from fiscal year 2019 through fiscal year 2021, that includes a pledge to deliver packaging solutions that contribute to sustainability for the global environment.

### Plastic Packaging Waste Generation per Capita (2014)



Source: Plastic Packaging in Japan and Overseas (Presentation materials), Ministry of the Environment, Japan (Published in Japanese only; English translation of title by DIC)



## Developing *HYDRECT*, an FDA-compliant water-based coating varnish that is highly recyclable and boasts excellent resistance to water, oil and heat

“With the Tokyo 2020 Olympics and Paralympics imminent, the improper disposal of waste plastic in Japan is an issue gaining considerable attention. Isn’t there any way we can replace plastic films laminated on paper and paperboard food containers with a coating that is less harmful to the environment?” DIC’s efforts to develop a new coating varnish were inspired by a customer query addressed to DIC Graphics in 2017. This entreaty also underscored growing global calls for sustainable packaging. The development team began looking at ways to address this issue and soon discovered a promising candidate in a coating developed by DIC Group company Sun Chemical that boasts outstanding water and oil resistance, is compatible with both flexo and gravure printing, and can be recycled into paper. However, there was also a downside: Sun Chemical’s coating contains a substance that violates Japan’s Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. It was thus necessary to replace this substance and adjust the coating’s composition. Several candidates were selected and tested, a process of trial and error that eventually led to the successful commercialization of the product in autumn 2018.

Paper and paperboard food containers coated with the new varnish demonstrate revolutionary performance features. Resistant not only to liquid and oil but also heat, these containers can be used in both regular and microwave ovens. Moreover, the degree of oil- and heat-resistance is significantly higher than that of conventional water-based varnishes. The ingredients used comply with the standards stipulated in both Japan’s Food Sanitation Act and the U.S. Food and Drug Administration (FDA) and there is no danger of VOCs being released during the coating process. Perhaps most important, because the varnish dissolves together with paper in a sodium hydroxide solution, post-consumer paper and paperboard containers coated with the varnish are classified as rank A, meaning that they can be recycled into paper or paperboard.

Packaging coated  
with *HYDRECT*



Recyclability of  
*HYDRECT*



Paper coated with *HYDRECT* dissolves completely in chemicals (left), while that laminated with polyethylene does not (right)

DIC’s new coating varnish, *HYDRECT*, was one of the products on exhibit in DIC’s booth at the Tokyo International Packaging Exhibition 2018 (Tokyo Pack 2018). Presentations were given in which donuts and gyoza (pot stickers) in prototype packages were heated in a microwave, prompting many booth visitors to pick up the packages and pepper booth staff with questions. Multiple inquiries were received from packaging-related companies, as well as from trading companies that do business with paper manufacturers and convenience stores, a strong indication of both the high level of interest in addressing the issue of plastic pollution and potential demand for *HYDRECT*. At present, a wide range of paper and paperboard food container manufacturers and processing companies are exploring the adoption of *HYDRECT*.

### KEY PEOPLE from DIC

We will continue working to expand the areas where *HYDRECT* can be used instead of polyethylene.

Since the launch of *HYDRECT*, we have been particularly surprised by the number of inquiries for applications that we had not even imagined. Although the greatest advantage this varnish offers is that it is an alternative to polyethylene, it cannot currently be used on some types of containers because of their shape. We are thus promoting ongoing efforts to modify the product with the aim of expanding compatibility, not only for containers but also for other applications.

In April 2018, the Packaging Solution Center was established at the Tokyo Plant, where we currently work, to advance collaboration with customers in the development of packaging. Looking ahead, we will continue working closely with DIC Graphics, which operates the facility, as we take on the challenge of developing next-generation packaging materials like *HYDRECT*, taking inspiration from feedback received from visiting customers.

(From left)

Supervisor, Team 2, Printing Inks & Supplies Sales Group 3, Offset Inks Division, DIC Graphics Corporation **Takafumi Yamazaki**  
Manager, Dispersion Technical Group 3, Dispersion Technical Division 1, DIC Corporation **Hiroshi Kikuchi**  
Manager, Team 5, Tokyo Liquid Ink & Coatings Sales Group 1, DIC Graphics Corporation **Jun Naitou**



## Sun Chemical developed *SunColorBox*, a unique set of tools and services that enable consistent and accurate digital color communication

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

WEB



### *Sun Chemical Promotes Initiatives Aimed at Addressing Important Social Imperatives*

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.

#### Social Imperative

Brand owners are under constant pressure to streamline processes, introduce efficiencies, manage cost by eliminating waste and reduce time to market. But the bedrock of brand identity is color. If the color isn't right, the integrity of the entire supply chain is compromised. This means that achieving consistent color across substrates, print processes and national frontiers is essential to the efficiency of the whole packaging workflow. There are two major obstacles to this. The first is the number of variables that make true color consistency elusive, such as package types, substrates, inks and more. The second is the number of parties with input to the production and approval of color. The universe of brand owners, designers and converters is vast and geographically spread out.

While software and hardware tools for color management are available, they are often deployed inconsistently by the individual links in the supply chain. The result is a chain of disconnected islands of solutions, rather than a cohesive community working to an industry-standard reference, with every supplier providing its own solution working within its own environment, without the necessary integration needed for a highly efficient workflow. In practice, "color management" is often a mix of gut feel, operator experience and the inconsistent use of measurement tools and samples.

Try to map the color management process in many packaging supply chains and the picture can be chaotic, with communication between the different parties often going in loops of approval and re-approval. For brand owners, this is a recipe for error, inefficiency and unnecessary cost. It's no surprise that color that fails to meet brand owner expectations is the primary reason for rejects and reworks.

#### Sun Chemical's Response

Sun Chemical developed *SunColorBox*, a unique set of tools and services that enable consistent and accurate digital color communication throughout the entire packaging supply chain. *SunColorBox*, a set of integrated tools, allows customers to select the most suitable services based on the size of their business and the investment required.

Since 2014, Sun Chemical has been implementing the *SunColorBox* solution at a large number of customer sites around the world using all major commercial printing technologies, including flexo, gravure and offset, and has achieved the following substantial savings for customers.

**25–30%**  
in press make-ready time

**10–40%**  
in right first time on press

**20–70%**  
in ink return usage

**30–40%**  
in substrate waste

**30–80%**  
in color palette reduction



### **VOICE** Build a complete support system to achieve customers' sustainable goals

Customers who have taken advantage of the tools from *SunColorBox* have achieved many of their sustainability goals—all by achieving the right brand color the first time. The benefits are far reaching. While our central color management team manages digital color management projects globally, implementation and support are all provided by the local Sun Chemical technical personnel. We have over 300 highly trained *SunColorBox* specialists with support from our more than 20 color centers. This centrally managed but locally supported model provides customers that personal touch in helping them achieve both their color and sustainability goals and distinguishes Sun Chemical as the market leader in high-efficiency color management.



Business Leader, Color Management, Sun Chemical Corporation **Patrice Aurenty**



# 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.

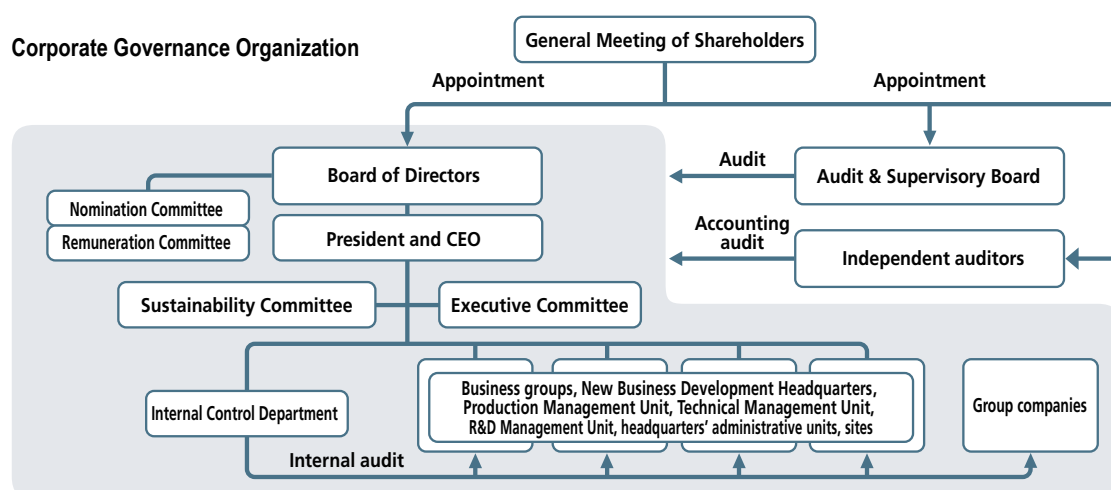
## Policy on Corporate Governance

DIC has prepared a Policy on Corporate Governance, which it has published on its corporate website.

Policy on Corporate Governance  [http://www.dic-global.com/en/about/pdf/governance\\_en.pdf](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 an Audit & Supervisory Board. DIC has also instituted an executive officer system and has established a Nomination Committee, a Remuneration Committee, an Executive Committee and a Sustainability Committee.



### 1 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 (one of whom is female). 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, Audit & Supervisory Board member or executive officer, and the dismissal of serving directors, Audit & Supervisory Board members 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 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 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 Audit & Supervisory Board member 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 Audit & Supervisory Board member 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 Audit & Supervisory Board**

The Audit & Supervisory Board comprises four members, including two outside Audit & Supervisory Board members (one of whom is female). In principle, the Audit & Supervisory Board 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 Audit & Supervisory Board, which includes one attorney and one certified public accountant as outside members, liaises with the accounting auditors and the internal auditing department. This structure ensures the effective functioning of DIC's corporate governance system.

# **System of Internal Controls**

## **1 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, key components of which are summarized below, based upon the Companies Act of Japan and the Financial Instruments and Exchange Act of Japan. The Board of Directors hears annual reports on the status of the system of internal controls, a summary of which is included in the Company's official report on its business activities.

## **2 Basic Policy Toward Eliminating Demands by Antisocial Elements**

DIC's basic policy, as outlined in the DIC Group Code of Business Conduct, is to stand firmly against antisocial elements and in no way to acquiesce to demands presented by such elements.

# **Outside Directors and Outside Audit & Supervisory Board Members**

## **1 Number and Role of Outside Directors and Outside Audit & Supervisory Board Members**

DIC currently has three outside directors and two outside Audit & Supervisory Board members. 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 Audit & Supervisory Board members—one an attorney specializing in corporate law and the other a certified public accountant—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 Audit & Supervisory Board Members**

DIC has established standards for evaluating the independence of individuals appointed to the position of outside director or outside Audit & Supervisory Board member. DIC's outside directors and outside Audit & Supervisory Board members 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/audit & supervisory board members set by the Tokyo Stock Exchange.

### 3 Framework for Supporting the Efforts of Outside Directors and Outside Audit & Supervisory Board Members

Prior to meetings of the Board of Directors, relevant materials are distributed to all directors, full-time Audit & Supervisory Board members, outside directors and outside Audit & Supervisory Board members. In addition, directors bringing matters before the Board provide explanations in advance to outside directors, while full-time Audit & Supervisory Board members provide explanations as necessary to outside Audit & Supervisory Board members.

## Other Initiatives to Enhance the Corporate Governance Organization

### 1 Composition of the Board of Directors

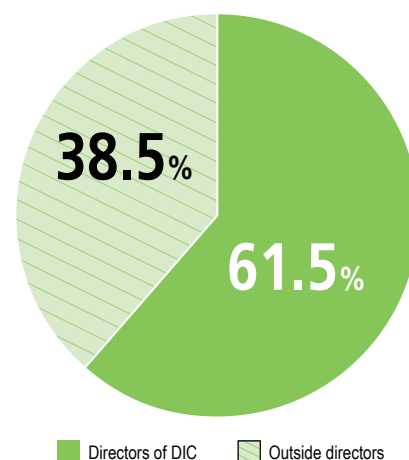
To enable the Board of Directors to resolve major operations-related issues, as well as to facilitate the effective oversight of management, the Board of Directors comprises outside directors, who maintain independence, and other individuals having a thorough knowledge of the businesses of the DIC Group, with consideration given to ensuring a balance among necessary knowledge, experience and capabilities. In light of the DIC Group's global operations, DIC also strives to ensure diversity in the Board's composition.

One member of the Board of Directors is female, as is one member of the Audit & Supervisory Board.

#### Composition of the Board of Directors and the Audit & Supervisory Board

	In-house	Outside	Total	Percentage of outside members
Directors	6	3	9	33.3%
Audit & Supervisory Board members	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 prevailing market rates, and consists of basic remuneration; bonuses, which are linked to consolidated operating results and the degree of achievement of individual targets; and stock compensation, which is based on medium- to long-term operating results. Directors who serve concurrently as executive officers are eligible for bonuses and stock compensation. Other directors and outside directors are eligible for basic remuneration only. Remuneration for Audit & Supervisory Board members consists of basic remuneration only and is determined through discussion involving all Audit & Supervisory Board members, in accordance with internal rules established by the Audit & Supervisory Board, with consideration given to ensuring a balance with remuneration for directors and to prevailing market rates.

### 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 Audit & Supervisory Board members. In fiscal year 2018, the Company conducted a survey of all directors and Audit & Supervisory Board members regarding, among others, self-evaluation and Board administration, responses to which were analyzed and evaluated by the Board of Directors. As a result, the effectiveness of the Board of Directors was confirmed.

To further improve the Board's effectiveness, DIC recognizes the further enhancement of discussion regarding corporate strategy, including confirming the status of the medium-term management plan, as a key challenge and will continue working to promote improvements.

## 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 Ten Principles of 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 global sustainable development. Companies and organizations worldwide 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.



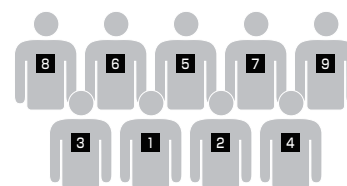
# Directors, Audit & Supervisory Board Members and Executive Officers

(As of May 2019)

## Directors



- |  |  |                                       |                                       |                                     |
|--|--|---------------------------------------|---------------------------------------|-------------------------------------|
| <b>1</b> Chairman of the Board of Directors<br>Yoshiyuki Nakanishi | <b>3</b> Representative Director<br>Masayuki Saito | <b>5</b> Director<br>Hideo Ishii      | <b>7</b> Director*<br>Kazuo Tsukahara | <b>9</b> Director*<br>Kuniko Shouji |
| <b>2</b> Representative Director<br>Kaoru Ino                      | <b>4</b> Director<br>Yoshihisa Kawamura            | <b>6</b> Director<br>Toshifumi Tamaki | <b>8</b> Director*<br>Yoshiaki Tamura | * Outside                           |

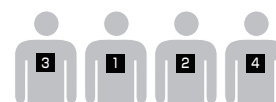


## Audit & Supervisory Board Members



- |   |
|---|
| <b>1</b> Audit & Supervisory Board Member<br>Yoshiyuki Mase     |
| <b>2</b> Audit & Supervisory Board Member<br>Hiroyuki Ninomiya  |
| <b>3</b> Audit & Supervisory Board Member*<br>Katsunori Takechi |
| <b>4</b> Audit & Supervisory Board Member*<br>Michiko Chiba     |

\* Outside



### Outside Director Profiles

#### Kazuo Tsukahara

April 2008 Director and Managing Executive Officer, IHI Corporation  
April 2012 Representative Director and Executive Vice President, IHI Corporation  
June 2014 Advisor, IHI Corporation

#### Yoshiaki Tamura

January 2007 Executive Officer, Asahi Glass Co., Ltd.  
March 2013 Representative Director and Executive Vice President, Asahi Glass Co., Ltd.  
March 2017 Executive Fellow, Asahi Glass Co., Ltd.

#### Kuniko Shouji

June 2004 Executive Officer, Terumo Corporation  
June 2010 Director and Senior Executive Officer, Terumo Corporation  
June 2017 Advisor, Terumo Corporation

### Outside Audit & Supervisory Board Member Profiles

#### Katsunori Takechi

April 2000 Public Prosecutor, Civil Affairs Bureau, Ministry of Justice  
October 2003 Joins Anderson Mori & Tomotsune  
July 2011 Managing Partner, Takechi & Partners

#### Michiko Chiba

October 1989 Joined Showa Ota & Co. (currently, Ernst & Young ShinNihon LLC)  
July 2010 Senior Partner, Ernst & Young ShinNihon LLC  
September 2016 Founded Chiba Certified Public Accountant Office



## Executive Officers



**President and CEO**  
**Kaoru Ino**



**Executive Vice President**  
**Masayuki Saito**  
Assistant to President and CEO  
CFO  
Chairman of the Board, Sun Chemical Corporation  
Chairman of the Supervisory Board, Sun Chemical Group Coöperatief U.A.



**Managing Executive Officer**  
**Kazunari Sakai**  
General Manager,  
Technical Management Unit



**Managing Executive Officer**  
**Hideo Ishii**  
President, Packaging & Graphic Business Group



**Managing Executive Officer**  
**Masami Hatao**  
President, Color & Display Business Group  
General Manager, Display Material Products Div.



**Managing Executive Officer**  
**Toshifumi Tamaki**  
Head of Corporate Strategy Unit  
In Charge of Kawamura Memorial DIC Museum of Art



**Managing Executive Officer**  
**Naoyoshi Furuta**  
General Manager, Production Management Unit



**Managing Executive Officer**  
**Masaya Nakafuji**  
Head of General Affairs and Legal Unit  
In Charge of Diversity



**Managing Executive Officer**  
**Kazuo Hatakenaka**  
President, Functional Products Business Group  
General Manager, Performance Material Products Div.



**Executive Officer**  
**Rudi Lenz**  
Vice Chairman of the Board,  
Sun Chemical Corporation



**Executive Officer**  
**Koji Tanigami**  
President and CEO,  
DIC Graphics Corporation



**Executive Officer**  
**Shinsuke Toshima**  
Chairman, DIC (China) Co., Ltd.  
Chairman, DIC (Shanghai) Co., Ltd.



**Executive Officer**  
**Taihei Mukose**  
Head of Purchasing and Logistics & Information Systems Unit



**Executive Officer**  
**Kiyotaka Kawashima**  
General Manager,  
R&D Management Unit  
General Manager,  
Central Research Laboratories



**Executive Officer**  
**Masanobu Mizukoshi**  
General Manager,  
Composite Material Products Div.



**Executive Officer**  
**Paul Koek**  
Managing Director,  
DIC Asia Pacific Pte Ltd



**Executive Officer**  
**Myron Petruch**  
President and CEO,  
Sun Chemical Corporation



**Executive Officer**  
**Takeshi Asai**  
General Manager,  
Corporate Planning Dept.  
In Charge of Osaka Branch and Nagoya Branch



**Executive Officer**  
**Koji Asada**  
Head of ESG Unit



**Executive Officer**  
**Masahiro Kikuchi**  
Deputy Managing Director (South Asia),  
DIC Asia Pacific Pte Ltd



**Executive Officer**  
**Masamichi Sota**  
General Manager,  
Printing Material Products Div.  
General Manager, Packaging & Graphic Business Planning Dept.



**Executive Officer**  
**Yuji Morinaga**  
General Manager,  
Packaging Material Products Div.



**Executive Officer**  
**Shuji Furuta**  
Head of Finance and Accounting Unit



**Executive Officer**  
**Kiyofumi Takano**  
General Manager,  
New Business Development Headquarters



**Executive Officer**  
**Yoshinari Akiyama**  
General Manager,  
Color Material Products Div.

# Overview of Sustainability

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 ESG-related issues.

## Basic Sustainability Policy (Partially revised in March 2019)

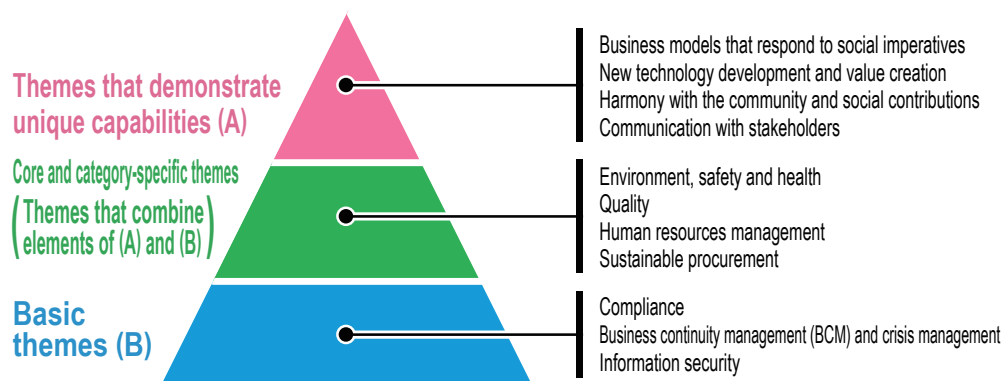
The DIC Group is dedicated to conducting its business while retaining a strong commitment to five key concepts: preserving safety and health, managing risks, ensuring fair business practices and respect for diversity and human rights, maintaining harmony with the environment and advancing its protection, and creating value for society through innovation and contributing to ongoing economic growth. 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, as well as to the conservation and improvement of the global environment, by capitalizing on its businesses to achieve unfaltering growth, thereby enhancing its own sustainability.

Notes: 1. With the aim of ensuring that it remains a trusted corporate citizen with a proud reputation, in December 2010 the DIC Group became a signatory to the UNGC. The Group also takes the guidelines provided by ISO 26000, the International Organization for Standardization's standard for social responsibility, into account in conducting its operations.  
2. The global community today recognizes the promotion of ESG management, which seeks to balance sustainable economic growth and the resolution of social imperatives, as critical. This is evidenced by the fact that countries worldwide have ratified the Paris Agreement and the SDGs, both of which were adopted in 2015.

## Sustainability Framework and Themes

### Themes

To foster concrete measure, in fiscal year 2007 the DIC Group identified 12 key themes as a framework for implementing its CSR program. Subsequently, the Group partially revised these themes in response to changes in the external environment and the progress of its efforts. Today, the Group's sustainability framework comprises 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.



### Deployment

In line with its basic sustainability policy, the DIC Group has formulated medium-term (fiscal years 2019–2021) 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. Individual product divisions, business groups, sites, and overseas and domestic DIC Group companies are charged with pursuing effective sustainability programs by formulating their own annual activity plans, based on the Group's plan, as well as with ensuring that the Group's policies permeate their organizations and labor forces and linking sustainability initiatives to business targets.

## 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 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.

For more information on the SDGs, please visit:

**WEB** <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>



# Materiality Analysis

The DIC Group recently once again abstracted and analyzed material issues, that is, issues with the potential to negatively affect its performance, and has identified those of particular significance. Guided by its new medium-term management plan, DIC111, 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.

## Materiality Analysis Process

### 1 Abstraction of Issues

DIC has abstracted material issues of particular significance to the DIC Group based on, among others, the GRI's G4 Sustainability Reporting Guidelines, issues delineated in DIC111, and principal risks and opportunities.

### 2 Materiality Analysis

Sustainability Committee members, heads of departments that spearhead the implementation of initiatives related to sustainability themes, site general managers, and senior management from Group companies in the United States, Asia and elsewhere assessed abstracted issues from the perspectives of importance to DIC Group businesses and importance to stakeholders. Based on the results of this process, and of extensive subsequent deliberations by the Sustainability Working Group and the Sustainability Committee, issues of particular significance to the Group were determined.

As a result of this process, issues of fundamental importance to DIC Group businesses, including occupational health and safety, respect for human rights and compliance, are presented separate from the DIC Group's materiality matrix.

#### (a) Importance to DIC Group businesses

Issues were assessed for potential to negatively affect the DIC Group now or in the future, with consideration given to both risks and business opportunities.

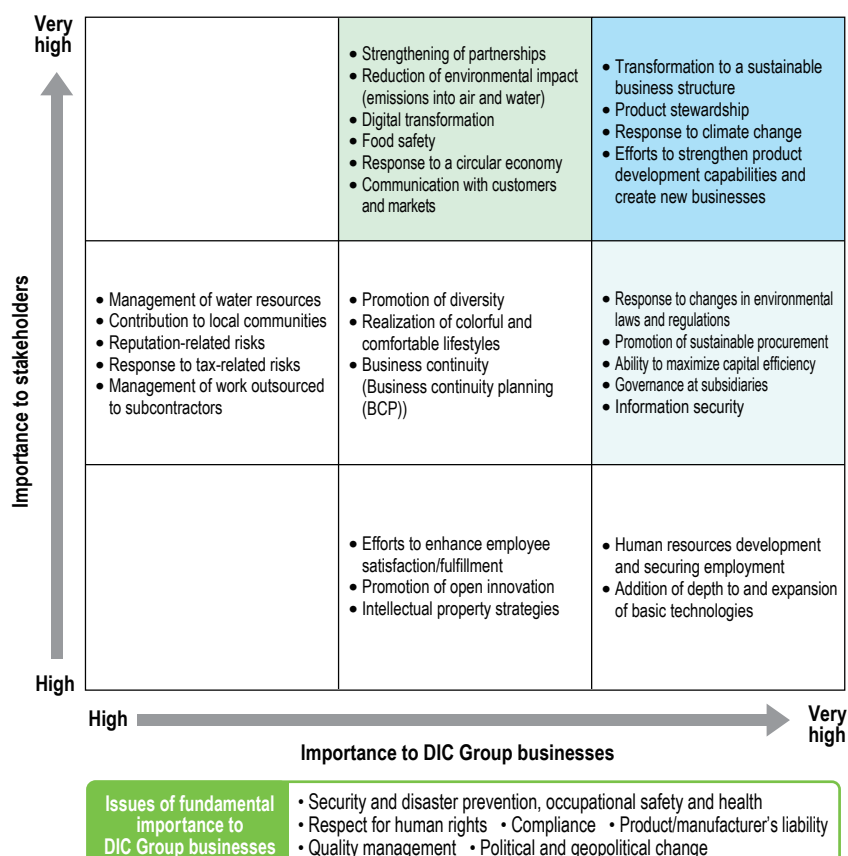
#### (b) Importance to stakeholders

The DIC Group recognizes four major external stakeholder groups (customers, suppliers, local communities and society, and investors). Issues were examined in terms of both level of interest on the part of stakeholders and potential impact. Key criteria from external assessment organizations (the Dow Jones Sustainability Indices (DJSI), FTSE, MSCI, the Sustainability Accounting Standards Board (SASB) of the United States and Sustainalytics) were also referenced, adding an objective perspective.

## The DIC Group's Materiality Matrix

DIC has organized the issues abstracted and assessed through the process above into 28 general materiality categories. The materiality of these issues was scored and a materiality matrix created by plotting the scores using two scales, i.e., importance to stakeholders and importance to DIC Group businesses. In May 2019, this matrix, together with the separate issues of fundamental importance to DIC Group businesses, were approved by the Sustainability Committee and finalized.

The DIC Group's Materiality Matrix



Information on key concrete initiatives related to issues of particular significance is disclosed in the complete version of DIC Report.

# Compliance

## Toward Fair and Transparent Corporate Activities

**WEB** <http://www.dic-global.com/en/csr/philosophy/management/compliance.html>

SDGs Goal 16



QR code



### 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 Group held presentations for all existing Group employees at the time of release, while new employees receive training at point of hire. The goal of such training is to ensure employees worldwide share values cherished by the Group and approach their responsibilities with a sense of responsibility and a commitment to doing the right thing.

### Initiatives to Promote Compliance

- ① Training focused on legal issues to improve compliance awareness is provided for employees at point of hire, when promoted and before overseas transfers. In addition, with the aim of promoting awareness of the DIC Group Code of Business Conduct, in fiscal year 2018 e-learning focused on international antitrust legislation and insider trading was provided. Training on legal issues was also provided once for DIC executives, once for executives of Group companies in Japan and at DIC Group companies in four countries overseas (PRC, Singapore, Thailand and Malaysia).
- ② Compliance officers are appointed at all regional headquarters—DIC (Japan), Sun Chemical (Americas and Europe), DIC (China) (PRC) and DIC Asia Pacific (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 2018, there were no serious violations of compliance laws.

### Establishing and Operating a Whistle-Blowing System

The DIC Group has established a compliance whistle-blowing system independent from channels for communication used in the conduct of business. This system encompasses hotlines that can handle reports of compliance issues and questions 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 works to ensure the system functions in a proper manner.

### Taxation Compliance

In November 2017, the DIC Group formulated an official approach to tax. As an organization with global operations, the Group engages in fair and appropriate tax planning that reflects the nature of its businesses. The Group is also aware of risks associated with transfer price taxation and the use of tax havens and of its obligation to pay appropriate taxes in the proper jurisdictions as appropriate for its operations.

The DIC Group's Approach to Tax **WEB** <http://www.dic-global.com/en/csr/philosophy/management/tax.html>

# BCM and Crisis Management

## Reducing Business Risks and Preventing the Recurrence of Incidents

**WEB** <http://www.dic-global.com/en/csr/philosophy/management/bcm.html>

QR code



### Framework for Promotion

Having prepared crisis management rules and manuals for use across the DIC Group in the event of a major disaster, DIC has formulated business continuity plans (BCPs) for individual product divisions. To prevent BCPs from becoming empty formalities, the Group works to identify issues and implement ongoing improvements through annual training and emergency response exercises.

### BCM in Fiscal Year 2018

A number of natural disasters struck Japan in fiscal year 2018. In each instance, affected sites assessed the extent of impact based on their BCPs and promptly informed corporate headquarters. Fortunately, these events did not affect the Group's production or supply activities and none of its major customers or suppliers suffered major damage. Against this backdrop, DIC stepped up efforts to encourage awareness among and provide training for site and Group company BCP officers in Japan, as well as to identify new issues and devise remedial measures.

### Promoting Complementary Production Capabilities

Recognizing the need to ensure the DIC Group can fulfill its supply responsibilities in the event of a major natural disaster, the Saitama Plant and Qingdao DIC Finechemicals Co., Ltd. in the PRC collaborated on the formulation of a BCP for the LC materials business that incorporates complementary production capabilities, ensuring one can take over for the other if required. Group pigment production facilities cooperate on a continuous basis to plan emergency response measures.



## Initiatives Aimed at Formulating More Effective BCPs

DIC recognizes the need to ensure that divisions and departments share a common crisis awareness to ensure the prompt restoration of operations in the event a production site is damaged as the result of a disaster or other event. In fiscal year 2018, the Company organized BCP lectures for product division staff, as well as for domestic and overseas Group company executives and group leaders, and conducted BCP-focused joint product division–site exercises at seven principal domestic sites.

## Efforts to Reinforce Safety Measures Overseas

The DIC Group is reinforcing safety measures to protect DIC Group employees overseas in the event of terrorist acts, uprisings, kidnappings and other incidents. These include advancing awareness among related individuals and strengthening corporate headquarters' ability to respond effectively in an emergency situation by establishing an emergency overseas contact network, providing risk information to overseas sites, preparing crisis management manuals, and organizing safety training and exercises based on hypothetical situations for employees taking up new overseas posts or embarking on overseas business trips.

# Information Security



## Initiatives to Ensure Information Security

**WEB** <http://www.dic-global.com/en/csr/philosophy/management/security.html>

## Globally Maintaining and Enhancing Information Security

### Regulations and Guidelines

The DIC Group continues to update its Basic Policy on Information Security, created in 2010, confidential information management regulations and information management guidelines regularly and as required to ensure its ability to address new security risks in a timely manner. The Group is also implementing new regulations as appropriate in response to the increasing prevalence of digital technologies. In addition, the Group has established separate rules for handling personal information and customer information in its information management guidelines, which it is working to disseminate among employees and put into operation. In fiscal year 2018, the DIC Group reported no breaches of customer privacy or losses of customer data.

### Management Framework

The Information Security Committee meets twice annually to determine policies and procedures for information security in each area of the DIC Group's operations. Information security officers and managers are also appointed in each individual business group and functional unit to ensure the appropriate management and handling of important everyday information. To ensure it is prepared in the unlikely event of an information security–related incident, the Group has created a task force operational manual and periodically conducts training to ensure effective initial responses to incidents when they occur.

### Infrastructure

In addition to ongoing initiatives, including the early installation of a next-generation firewall to protect against targeted cyber attacks by third parties, DIC has taken decisive steps to fortify its information security infrastructure to accommodate integration with the IoT, the expanded use of cloud computing and other new technologies, thereby reinforcing its management foundation.

In fiscal year 2018, DIC completed deployment of an information infrastructure/secure environment creation project initially implemented in the PRC and Southeast Asia (fiscal years 2015–2017) in the Republic of Korea (ROK) and Taiwan.

### Employee Education and Training

Since fiscal year 2017, the DIC Group has offered an annual e-learning information security program to employees in Japan and elsewhere in Asia. The percentage of eligible employees participating in this e-learning program is currently 90%. The Group also provides information security training for employees in the Americas and Europe and works to promote awareness of the DIC Group's security policy, regulations and information infrastructure, and of effective ways to address new security threats and challenges associated with social media.

## Comment As a business partner, this is my take on DIC's information security initiatives.

Our organization has provided assistance to DIC, particularly in the assessment of information security–related risks, since May 2017. One specific effort has involved the assessment of current capabilities from multiple perspectives, which involved the definition of critical data (including personal information and confidential business information), a secure configuration and set up for network systems that handle such critical data, physical and logical access control, audit log management and the establishment of a system for emergencies, and the maintenance of a policy that clarifies organizational roles and responsibilities. Having worked with DIC to assess and prioritize risks associated with issues highlighted through this process and clarified areas requiring reinforcement, we also assisted with the implementation of administrative, technical, human and organizational countermeasures.

The distinguishing feature of DIC's initiatives is the Company's focus on introducing measures and rules that give due consideration to practicality so as not to be a hindrance to existing business while at the same time ensuring its ability to ensure effective security. I look forward to continuing to assist DIC in its efforts to strengthen its information security in the years ahead.



General Manager, Advanced Information Security Services Division, BroadBand Security, Inc. **Nobukazu Yamada**

# Environment, Safety and Health (ESH)

## Toward the Achievement of a Sustainable Society

**WEB** <http://www.dic-global.com/en/csr/environment/>

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



## Management System

*The DIC Group promotes a broad range of ESH initiatives through its Responsible Care program.*

### Initiatives in Fiscal Year 2018

In fiscal year 2018, the DIC Group advanced diverse initiatives in line with its annual Responsible Care activity plans. Overseas, DIC dispatched an ESH manager from corporate headquarters to serve as regional ESH director for Greater China and assigned coordinators to oversee efforts in the southern and eastern parts of the PRC. In the Asia-Pacific region, the Company installed ESH country heads (individuals in charge of ESH initiatives in individual countries) under the supervision of the regional ESH director. An Asia-Pacific region country head conference is held annually, enabling country heads to discuss regional ESH policies, targets and challenges. The 2018 conference was attended by 15 individuals. In Japan, companies face calls to further reinforce their frameworks for managing employee health and preventing occupational accidents. DIC and DIC Graphics hold GM conferences, gatherings of ESH officers from principal production sites across the country who have been appointed group managers (GMs). GM conferences were held five times in fiscal year 2018, with Responsible Care officers also in attendance, with the aim of crafting standards, among others, and exploring improvements to address shared challenges.

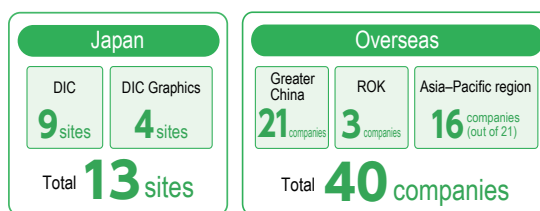
## ESH Auditing

### Principal Initiatives in Fiscal Year 2018

In fiscal year 2018, third-party safety audits were conducted at key sites in Japan (the Sakai and Komaki plants) as an objective way to identify issues. In Greater China, third-party audits were conducted at DIC (China) sites, while monitoring was implemented at sites belonging to Qingdao DIC Finechemicals Co., Ltd., DIC Synthetic Resins (Zhongshan) Co., Ltd. and Changzhou Huari New Material Co., Ltd. The Group reported two violations\* of Responsible Care-related regulations overseas during the period. Prompt steps were taken to make improvements.

\* Violations with a penalty exceeding \$10,000

### Outline of ESH Audits Implemented (Fiscal Year 2018)



## Occupational Safety and Health/Disaster Prevention

*Viewing the prioritization of operational safety as a core management tenet, the DIC Group works tirelessly to prevent accidents and disasters and boost the level of ESH initiatives.*

### Audits in Fiscal Year 2018

#### 1 Centralizing Management of Monthly Report Data in the Cloud

In fiscal year 2015, the DIC Group established a system for aggregating monthly occupational safety and health data for individual Group companies in Greater China and the Asia-Pacific region as a monthly report. This made it easier to more swiftly identify and compare working hours, the number of accidents leading to workdays lost, occupational accident frequency rates and other monthly data for these regions, thereby further enhancing Groupwide management and regional performances. In fiscal year 2018, the Group began recording and storing this data in the cloud to facilitate centralized management.

#### 2 Reducing Risks

By understanding potential risks in production processes, facilities and devices, and the hazards of chemical substances, the DIC Group systematically prepares initiatives to prevent accidents and occupational injuries. In Japan, the Group has formulated guidelines for conducting risk assessments when deploying new or modified equipment or changing production processes and promotes ongoing efforts to reduce risks associated with chemical substances.

#### 3 Training Skilled Safety Personnel to Predict Risks

To foster skilled safety personnel, the DIC Group provides regular safety education and training on how to handle chemical substances, using materials such as *Principles of Safe Conduct*, *Environment and Safety Guidelines for the R&D Department*, safety data sheets (SDSs) and its Occupational Accident Case Studies database. Fiscal year 2018 brought publication of the fifth edition of *Principles of Safe Conduct*, which is updated every 10 years, as well as the launch of an animated version. Both have been translated into English and Chinese for use as training materials at overseas Group companies. In addition, DIC Group companies in Japan make extensive use of Kiken Yochi Training (KYT) ("hazard prediction training"), a constructive technique to further increase safety awareness. The Group is also accelerating deployment of KYT in Greater China and the Asia-Pacific region.

## Status of Occupational Accidents

The DIC Group promotes a variety of initiatives aimed at eliminating occupational accidents.

In fiscal year 2018, the number of occupational accidents resulting in workdays lost across the global DIC Group was up slightly from fiscal year 2017. 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 occurrence of such accidents in the future.

## Workdays Lost Due to Occupational Accidents (FY2016–2018)

	DIC			DIC Group (Japan)			DIC Group (Global)		
	2016	2017	2018	2016	2017	2018	2016	2017	2018
Number of workdays lost	3	2	6	5	3	8	71	70	91
Frequency rate	0.541	0.360	1.071	0.548	0.331	0.848	1.893	1.752	2.221
Severity rate	0.012	0.054	0.021	0.026	0.028	0.013	-	-	-
TRIR*	2.35	2.16	2.50	3.07	2.65	2.86	3.84	3.98	4.69

\* Total recordable injury rate (TRIR): Number of occupational accidents resulting in lost workdays + Number of occupational accidents not resulting in lost workdays / Million work hours

## 4 Promoting Hands-On Safety Training

The DIC Group's hands-on safety training simulates common workplace accidents—including those involving entanglement in rotating devices, falls from high places and incised wounds caused by cutting equipment—based on actual previous examples with the aim of reducing employees' willingness to accept risks and fostering their ability to recognize danger. Through this initiative, the Group seeks to transform the mindset of employees by encouraging them to think and act on their own to protect themselves and each other from latent risks.

# Environmental Safety

The DIC Group recognizes that it has a responsibility to help address environmental issues and is taking decisive steps to reduce its negative impact, thereby contributing to sustainability.

## Climate Change

### Framework for Promotion

DIC and DIC Group companies in Japan have established Energy-Saving Promotion committees and Energy-Saving working groups, the latter comprising members chosen from each production site, which are charged with confirming the progress of efforts and conducting patrols. Overseas, DIC Group companies promote a wide range of independent initiatives that align with the Group's policies, supported by DIC's Production Control Department. Critical initiatives are debated by and the progress thereof is reported to the Sustainability Committee.

### Setting a New Long-Term Target for the Reduction of CO<sub>2</sub> Emissions

In fiscal year 2016, the Sustainability Committee set a medium-term target for reducing absolute emissions of CO<sub>2</sub> across global DIC Group sites by 7.0% from the fiscal year 2013 level by fiscal year 2020. In DIC111, the Group has set a long-term target of a 30% reduction by fiscal year 2030. Looking ahead, the DIC Group will work to achieve these targets by promoting a two-pronged strategy centered on promoting energy-saving initiatives at sites and actively advancing the use of renewable energy.

### Energy Consumption and CO<sub>2</sub> Emissions by the Global DIC Group

Although production volume by the global DIC Group was essentially level in fiscal year 2018, energy consumption was down 1.4% from fiscal year 2017 and 12.7% from the fiscal year 2013 base year. The Group's global CO<sub>2</sub> emissions declined 2.6% from fiscal year 2017, or 14.5% from fiscal year 2013, while emissions per unit of production, expressed in terms of kilograms of CO<sub>2</sub> per metric tonne, were down 2.3%, or 11.5% from fiscal year 2013. Principal factors behind these results include the start-up of a megasolar power system with a generating capacity of 1.6 MW at the Kashima Plant and a biomass boiler with an evaporation rate of 2.5 metric tonnes/hour at the Hokuriku Plant, and the purchase of low-carbon electric power at several sites in Japan.

### Global CO<sub>2</sub> Emissions in Fiscal Year 2018

Results of energy-saving initiatives implemented by the DIC Group in fiscal year 2018 and change from base year (fiscal year 2013)

Energy consumption **-12.7%** | CO<sub>2</sub> emissions per unit of production **-11.5%**

722,955  
metric tonnes

Fiscal year 2013

617,964  
metric tonnes

Fiscal year 2018

**-14.5%**  
from fiscal year 2013



## I Reducing Fossil Fuel Use by Promoting the Use of Renewable Energy

### *Initiatives by DIC Companies in Japan*

In fiscal year 2018, DIC Group companies in Japan used 586,000 GJ of renewable energy (equivalent to 15,123 kl of crude oil), up 18.0% from fiscal year 2017 and representing 12.1% of total energy (steam and electric power) consumption by these companies. This increase was attributable to the stable operation of a biomass boiler, an optimal mix of power sources (biomass boiler, wind power, solar power, a cogeneration system and purchased electric power) and the start-up of a megasolar power system (comprising 5,588 278-watt panels with a total surface area of 13,772 m<sup>2</sup>) with a generating capacity of 1.6 MW at the Kashima Plant (January 2018), and the full-scale start-up of a biomass boiler with an evaporation rate of 2.5 metric tonnes/hour at the Hokuriku Plant (January 2018). The use of renewable energy accounted for a 36,530-metric tonne reduction of CO<sub>2</sub> emissions in Japan from the fiscal year 2017 level, accounting for 13.6% of the total reduction achieved.

Early in fiscal year 2019, DIC completed the installation of solar power systems at five sites. These facilities, which will produce a combined total of 1.5 MW of electric power annually, began operating in January 2019. Particularly notable is the system established at the Tatebayashi Plant, which boasts an annual generating capacity of 1.3 MW—second only to the Kashima Plant's megasolar power system—and accounts for approximately 20% of the electric power used annually by the plant.



Megasolar power system at the Tatebayashi Plant

### *Initiatives by DIC Group Companies Overseas*

Against a global trend toward decarbonization, including by popularizing the use of renewable energy, DIC Group companies in the Asia-Pacific region, Greater China and the Americas and Europe are making use of government subsidies and support to, for example, install biomass boilers and solar power systems. In fiscal year 2018, renewable energy used by DIC Group companies overseas amounted to 728,183 GJ, up 19.7% from 608,502 GJ in the previous fiscal year.

## I Energy Consumption and CO<sub>2</sub> Emissions by the DIC Group in Japan

With production volume by the DIC Group in Japan—the 52 sites operated by DIC and domestic Group companies—down 1.1% in fiscal year 2018, energy consumption declined 1.4% and energy consumption per unit of production edged down 0.3%. CO<sub>2</sub> emissions fell 5.1%, to 231,820 metric tonnes, from 244,359 metric tonnes in fiscal year 2017, and CO<sub>2</sub> emissions per unit of production decreased 4.1%, to 212.7 kg CO<sub>2</sub>/metric tonne, from 221.8 kg CO<sub>2</sub>/metric tonne. The sharp decline in CO<sub>2</sub> emissions reflected, among others, the revision of standards used to evaluate potential environmental facility investments to include factors such as balance between environmental value and depreciation, making it easier to install solar power systems, among others, and the implementation of energy-saving initiatives at individual sites.

### *Independent Electric Power Generation: 24.0% of Total Consumption in Japan*

In Japan, the DIC Group has natural gas-fueled cogeneration systems at four plants (Chiba, Saitama, Gunma and Kashima). Electric power consumption by the DIC Group in Japan in fiscal year 2018 rose 1.7% from the previous fiscal year, to 287,870,000 kWh, approximately 24.0% of which was generated independently, with electric power generated using renewable energy accounting for 8.0% and electric power generated using cogeneration systems representing 16.0%. Independently generated electric power was up 5.0% from the previous fiscal year, owing to an increase in solar power.

### *Development of a Weather Forecast Data-Based Renewable Energy Solution*

Renewable energy sources are highly dependent on the weather. For this reason, maximizing use and at the same time ensuring a balance with purchased electric power and electric power generated using cogeneration is a major challenge. At the Kashima Plant, such adjustments were previously made by a small team of operators. In fiscal year 2018, the facility began developing a system that uses weather forecast data to automatically adjust supplies in accordance with weather conditions. In collaboration with the Corporate Engineering Department's Process Automation Engineering Group, the plant also developed a proprietary software program. The new system sends key forecast data, including sunlight, temperature and wind speed, from the Japan Weather Association up to three days in advance, to a computer that is linked to renewable energy generation facilities, cogeneration systems and purchased electric power facilities, facilitating automatic adjustment to optimize energy use. The system was introduced on a trial basis later in the year and benefits are currently being verified. DIC also hopes to see the system used as a case study of a striking improvement in operating efficiency achieved using information and communications technologies (ICT).

## TOPIC

### **DIC Wins New Energy Foundation Chairman's Award in the Adoption and Application Category of the 2018 New Energy Awards**

In December 2018, DIC won a New Energy Foundation Chairman's Award in the Adoption and Application Category of the 2018 New Energy Awards in recognition of the expanded use of renewable energy at the Kashima Plant. The awards program, which was presented by the New Energy Foundation, was established with the aim of encouraging the introduction of new energy and promoting awareness by commending particularly excellent initiatives.

The Kashima Plant has installed multiple renewable energy-powered generating facilities, including biomass and methane gas boilers, as well as wind power and solar power systems. As a consequence, 50% of electric power and 80% of heat consumed annually by the site is generated by using renewable energy. These facilities also contributed to a reduction in annual CO<sub>2</sub> emissions in fiscal year 2018 of 35,000 metric tonnes. Looking ahead, the department responsible for the plant's energy supply will continue working to enhance the combustion efficiency of generating facilities, including biomass and methane gas boilers, by upgrading maintenance and management technologies and accumulating know-how.

## | CO<sub>2</sub> Emissions by the DIC Group Overseas

While production volume by the DIC Group overseas in fiscal year 2018 edged up 0.4% from fiscal year 2017, energy consumption slipped 1.4% and energy consumption per unit of production declined 1.8%. CO<sub>2</sub> emissions by overseas Group companies in fiscal year 2018 decreased 1.1% and CO<sub>2</sub> emissions per unit of production were down 1.5%, or 10.9% lower than in fiscal year 2013. Factors contributing to the decline in CO<sub>2</sub> emissions included efforts by individual companies to break down the Group's emissions reduction targets and promote decarbonization initiatives; the start-up of a biomass boiler at Hainan DIC Microalgae Co., Ltd., and a solar power system at Qingdao DIC Finechemicals in the PRC; the start-up of a solar power system at Siam Chemical Industry Co., Ltd. (Thailand) and the replacement of a portion of the coal used to fire boilers with palm kernel shells (PKS) at PT. DIC Graphics' Karawang Plant (Indonesia) in the Asia-Pacific region; and the installation of additional solar power systems and initiatives aimed at improving production efficiency in the Americas and Europe.

## | Support for the TCFD

The DIC Group is highly conscious of the international community's accelerated efforts to promote decarbonization since the adoption of the Paris Agreement. As a manufacturer of fine chemicals, the Group works to help curb CO<sub>2</sub> emissions through its manufacturing activities and at the same time to effectively assess risks and opportunities associated with climate change while promoting Groupwide efforts to address related challenges, including through the development of products that contribute to decarbonization. In May 2019, DIC declared its support for the Task Force on Climate-related Disclosures (TCFD)\*, pledging to disclose climate-related information in line with TCFD recommendations going forward.

\* The TCFD was established under the auspices of the Financial Stability Board (FSB) and announced in July 2017.

## | Reducing Greenhouse Gas Emissions Attributable to Logistics

In fiscal year 2018, the volume of products shipped by the DIC Group, measured in thousands of tonne km, declined 8.8%. Energy consumed for this purpose decreased 10.0% and resulting CO<sub>2</sub> emissions were down 10.6%. Energy consumption per unit of production attributable to logistics, measured in GJ/1,000 tonne km, improved 1.0%, owing to a 19.0% decrease in chartered transport and a 17.0% increase in consolidated transport, which bolstered efficiency.

In an effort to assist overseas Group companies, in fiscal year 2017 a logistics manager was assigned to Singapore-based DIC Asia Pacific, which oversees Group operations in the Asia-Pacific region. Steps were also taken to rationalize and improve the efficiency of regional logistics. In addition, a country leader was appointed for each country from among local employees, reinforcing the framework for responding to challenges in a manner that appropriately reflects local commercial practices.

# Reducing Discharge of Chemical Substances

## | Initiatives in Fiscal Year 2018

### *Reducing Emissions of VOCs*

In fiscal year 2018, emissions of VOCs into the air by DIC totaled 192 metric tonnes, an increase of 8.5% from fiscal year 2017, while those of the DIC Group in Japan, at 366 metric tonnes, were down 1.3%. 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 equipment and stepping up emissions management practices in response to the tightening of local regulations governing emissions of VOCs.

## | Reducing SO<sub>x</sub>, NO<sub>x</sub> and COD

Taking fiscal year 1990 as the base year, DIC Group companies in Japan have worked to reduce sulfur oxide (SO<sub>x</sub>) and nitrogen oxide (NO<sub>x</sub>) emissions from boilers. The Group is also working to reduce chemical oxygen demand (COD).

Overseas, Group companies are also switching fuel from diesel to natural gas and replacing diesel-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 environment-friendly closed-loop recycling and wastewater treatment systems at its sites that purify water to a level that exceeds the legally mandated level.

## | Preventing Marine Pollution Resulting from Waste Plastic

In recent years, waste plastic and marine plastics have become issues of major concern worldwide. The DIC Group works to prevent pollution of the environment, particularly through measures to preclude leaks of raw materials from production facilities and the recycling of waste plastic generated in production processes. In fiscal year 2018, approximately 60% of waste plastic generated by the Group was recycled. Approximately 90% of this was reused, including energy recovered from fuel utilization.

# Reducing Industrial Waste

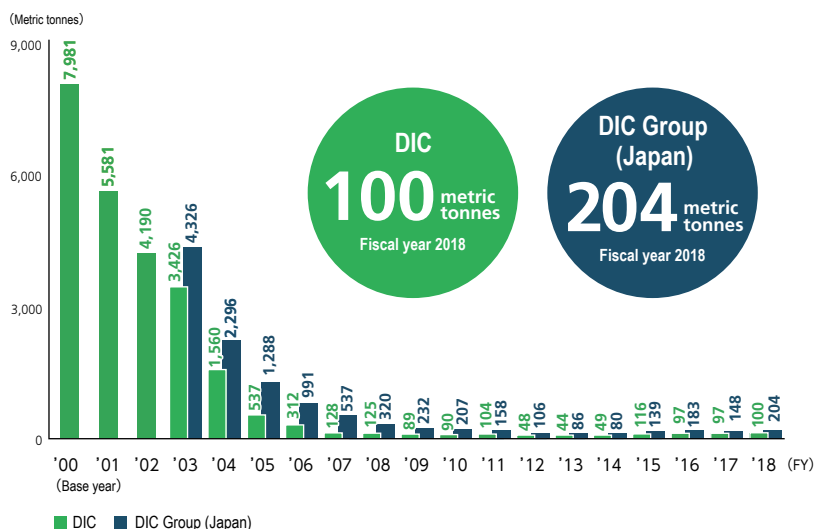
## | Reducing Industrial Waste Disposed of as Landfill

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

## Principal Initiatives in Fiscal Year 2018

In fiscal year 2018, the total volume of industrial waste disposed of as landfill by the DIC Group in Japan amounted to 204 metric tonnes. This result was attributable primarily to the updating of equipment at production facilities, which led to a one-time decline in the amount of sludge and other waste generated, as well as to efforts to bolster recycling at the Kashima Plant. Overseas, in addition to ensuring the disposal of industrial waste in a manner that complies with national regional legal and regulatory requirements, DIC Group companies in the Americas and Europe, Greater China and the Asia-Pacific region work to minimize industrial waste through the voluntary recycling and reuse of materials. In the period under review, Group companies introduced new waste treatment facilities and promoted the horizontal deployment of best practices. Thanks to these efforts, the total volume of waste disposed of as landfill by the DIC Group overseas was 24,976 metric tonnes.

### Industrial Waste Disposed of as Landfill



## Managing Water Resources

### Principal Initiatives in Fiscal Year 2018

In fiscal year 2018, fresh water withdrawn by the global DIC Group in the period amounted to 55,098,000 m<sup>3</sup>, comprising withdrawals by the Group in Japan (including the parent company) of 31,022,000 m<sup>3</sup> and by Group companies overseas of 24,076,000 m<sup>3</sup>. Wastewater discharged by the global DIC Group in fiscal year 2018 totaled 43,049,000 m<sup>3</sup>. Since fiscal year 2017, the Group has analyzed initial water risk at 189 sites worldwide in line with the GRI's guideline for collecting data on water withdrawn\* and reviewed the status of water recycling efforts.

\*Included in the GRI's G4 Sustainability Reporting Guidelines

## Safety in Logistics

*The DIC Group works with logistics partners to minimize risks, including by supplying information needed for the shipping/transport of its products.*

### Basic Policies and Framework for Implementation

DIC implements ongoing initiatives aimed at ensuring safety in logistics, that is, at lowering risks associated with the distribution of chemicals and reducing CO<sub>2</sub> emissions attributable to the transport of its products. The Logistics 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 and, in Japan, coordinates with logistics partners to further enhance safety and reduce environmental impact.

### Safety Management Initiatives

The firms to which DIC outsources logistics use containers that comply with Japan's Fire Service Act. DIC supplies information needed to display labels complying with the Global Harmonized System of Classification and Labelling of Chemicals (GHS), as well as provides SDSs and other documentation to ensure safe shipping in Japan and overseas. In fiscal year 2018, the rate of incidents occurring during the transport of DIC Group products was 46 ppm. In Japan, the Logistics Department meets regularly with logistics partners and inspects the practices of those with offices on-site at its production facilities. In fiscal year 2018, inspections were conducted at nine of these offices.

## Ensuring the Safety of Chemical Substances

*The DIC Group continues working to provide appropriate information to stakeholders to ensure the appropriate handling of its products over their entire life cycles.*

### Managing Chemical Substances

#### Ensuring the Swift Provision of Reliable SDSs

As part of its efforts to ensure effective product stewardship, which is the foundation of Responsible Care and emphasizes the management of chemicals across its entire supply chain, DIC has sought to comply with the GHS, which was issued in 2003 by the UN Economic Commission for Europe, as well as to provide customers with crucial hazard-related information. As such, in 2009 DIC established CIRIUS (Chemical Substance Information Comprehensive Management System) for domestic products. CIRIUS centralizes the management of information, as well as checks various laws and regulations—including export controls, the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc., the Industrial Health and Safety Act, and the Poisonous and Deleterious Substances Control Act—to facilitate the provision of reliable SDSs.



## Principal Initiatives in Fiscal Year 2018

### *Improving the Performance of the DIC Group's Systems for Managing Chemical Substance Information and Exploring the Creation of a New Global System*

In fiscal year 2018, DIC established a working group with the aim of providing customer-specific legal and regulatory information that is crucial to the development of products tailored to laws and regulations in individual countries and regions and responds to the information needs of customers. In fiscal year 2019, the Company will establish a project team to explore the creation of a new global chemical information system, which it aims to begin using in fiscal year 2024.

### *Groupwide Efforts to Create a Stronger Compliance Framework*

In January 2019, the ROK revised its Act on the Registration and Evaluation of Chemicals. In advance of this development, DIC, as the leader of a Japan Chemical Industry Association (JCIA) working group established to respond to overseas legal and regulatory changes, exchanged views with the relevant authorities in the ROK, after which it gave a presentation to Group companies and extended related information to customers and suppliers.

In June 2018, DIC completed the registration of existing chemical substances under the EU's Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) legislation. Sun Chemical has developed its own comprehensive chemical substance information management system for the Americas, the EU, Africa and Australia that ensures its ability to comply with laws and regulations in these regions.

### *Specialized Training Under DIC's Licensing System*

DIC recognized legal and regulatory compliance as central to risk management and endeavors to improve employees' awareness and knowledge of chemical substance regulations in Japan and overseas. Efforts include providing specialized training in Japan for individuals involved in the import and export of chemical substances, and issuing mandatory licenses\* to employees who have completed required programs and passed in-house examinations.

\* As of fiscal year 2018, 1,509 employees held a Class A license, which indicates specialized export-related expertise, and 175 held a Class B license, which pertains to ancillary operations, while a further 95 had completed an advanced course demanding superior capabilities and 318 held import licenses.

## Quality

### Enhancing Product Quality and Customer Satisfaction

**WEB** <http://www.dic-global.com/en/csr/quality/>

QR code



### 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 Management Unit and Production Management Unit on the horizontal axis.

The Quality Assurance Department is responsible for product quality across the entire DIC Group, while product division quality assurance groups oversee product-specific quality management. In addition to facilitating prompt and appropriate quality management, this division of Groupwide and product-specific quality management encourages close communication among departments. In fiscal year 2019, the Quality Assurance Department and the product division quality assurance groups began taking steps toward the creation of a new quality assurance system, including promoting the automation and mechanization of testing and inspection procedures.

### 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, production and sales, giving consideration to the need for effective product stewardship. After products are sold, customer and market assessments are gathered and fed back to development departments to facilitate further quality improvements.

### 2 Efforts to Enhance Product Quality-Related Educational Initiatives

Committed to providing safe, secure products that satisfy its customers, 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 newly hired and newly promoted employees.

# Human Resources Management

## Working to Enhance Job Satisfaction

**WEB** <http://www.dic-global.com/en/csr/stakeholder/staff.html>

SDGs Goals 3, 4, 5, 8 and 10



## Strategies for a Stronger Management Infrastructure

DIC's new medium-term management plan, DIC111, sets forth a new program, dubbed WING, that is designed to rally the Company's diverse human resources as the source of its competitiveness as a global organization. WING centers on four core themes: "Work style reform," "HR infrastructure reform," "next management selection" and "global talent development."

### Basic Personnel Statistics (DIC)

	Fiscal year 2016	Fiscal year 2017	Fiscal year 2018
<b>Number of employees</b>			
Male	2,653	2,618	2,628
Female	660	655	662
Total	3,313	3,273	3,290
<b>Average age</b>			
Male	41.9	42.2	42.5
Female	40.6	41.3	41.9
Total	41.6	42.0	42.4
<b>Average years of employment</b>			
Male	17.8	18.2	18.4
Female	18.5	19.2	19.7
Total	18.2	18.4	18.6
<b>New graduates hired</b>			
Male	38	39	43
Female	14	11	19
Total	52	50	62

	Fiscal year 2016	Fiscal year 2017	Fiscal year 2018
<b>Retention rate (after three years)</b>			
Male	91.3%	79.2%	87.8%
Female	91.7%	100%	81.0%
Total	91.4%	83.5%	86.3%
<b>Separations (voluntary) (number of individuals)</b>			
Male	32	35	55
Female	8	11	15
Total	40	46	70
<b>Separation rate (voluntary)</b>			
Male	0.3%	1.3%	2.1%
Female	0.2%	1.7%	2.3%
Total	0.3%	1.4%	2.1%

## The DIC Group's Human Rights Policy

The DIC Group actively supports global codes governing human rights\*, in line with which in May 2018 it formulated the DIC Group Human Rights Policy. The DIC Group Code of Business Conduct, which outlines standards that DIC Group employees are expected to observe, also lays down provisions prohibiting human rights violations and requiring respect for diversity, two philosophies that are the foundation of the Group's corporate activities. DIC Group employees are obliged to understand and provide written pledges to abide by the Code.

\* The International Bill of Human Rights, comprising the Universal Declaration of Human Rights and the International Covenants on Human Rights (the International Covenant on Economic, Social and Cultural Rights and the International Covenant on Civil and Political Rights); the International Labour Organization (ILO)'s Declaration of Fundamental Principles and Rights at Work; the United Nations' Guiding Principles on Business and Human Rights; and the Ten Principles of the UNGC.

## Initiatives in Fiscal Year 2018

A total of 58 DIC Group companies in Japan and overseas implement voluntary human rights and labor practices inspections. In fiscal year 2018, DIC refined the scope of questionnaires distributed to companies for this purpose and began promoting efforts to increase the visibility of related issues at individual companies, providing direction and/or training at corporate headquarters where necessary. Having completed verification of the results of inspections at companies in Japan, in fiscal year 2019 DIC will gradually expand efforts to ascertain status, promote awareness and provide training at Group companies in key overseas markets.

## Diversity Promotion and Work Style Reform

The DIC Group works to create workplaces that enhance job satisfaction for all employees. The principal human resources management strategy of DIC's new medium-term management plan, DIC111, is to reform work styles to capitalize on diversified individuality. To this end, the Company has identified introducing alternative working arrangements that leverage digital tools, including telecommuting and flextime; shifting the focus of evaluations from quantity to quality; and providing support for employees who have childcare or nursing care responsibilities or suffer illness as key themes. DIC is also promoting ESG management to strengthen its management infrastructure, with initiatives in Japan emphasizing increasing the percentage of the Company's management positions occupied by female employees, the percentage of its overall labor force accounted for by foreign nationals, and the number of women and foreign nationals in management positions.



### 1 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, approximately 50 foreign nationals are employed in various capacities at DIC.

As a new graduate, I wanted to find a job with a company that would help me grow as a citizen of the world. As an organization with bases around the world, DIC was the ideal choice. The group I was assigned to is tasked with developing PPS compounds, which are key engineering plastics used widely in automotive components. Because DIC produces PPS compounds at five sites worldwide, including in Japan, we interact frequently with colleagues and customers from overseas. Several members of our team have experience working in other countries, which makes for a lot of unique personalities. DIC has introduced a variety of working arrangements, including flextime and working at home. This creates a work environment that enables employees to, for example, adjust work hours to accommodate work plans, or use earphones at their desk when they need to concentrate, making it much more flexible than most Japanese companies. It is encouraging to see the idea of not being constrained by preconceived notions—something those of us in technical positions often hear—is gradually finding its way into efforts to reform work styles at my own workplace.



Polymer Processing Technical Group 2, DIC Corporation **Sia-Er Tan**

## 2 Expanding Career Opportunities for Women

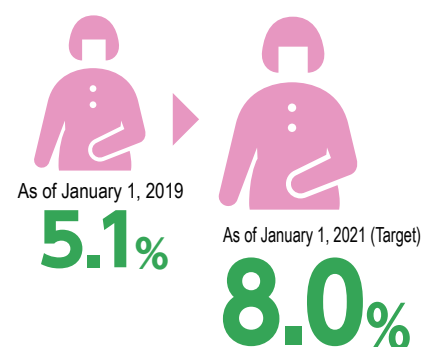
In line with its commitment to promoting diversity, DIC implements a variety of initiatives to expand career opportunities for female employees. Having established a full-scale program to support employees in balancing the demands of a career and childcare in 2007, since fiscal year 2016 the Company has pushed ahead with measures to transform the mindset of employees and its corporate culture, as well as to provide training designed to encourage the drive and determination of female employees and broaden the range of jobs open to women.

### TOPIC 1

#### Presentation Is Held on Results of Projects Implemented as Part of Program to Foster Female Leaders

In July 2018, a presentation was held at DIC's corporate headquarters in Tokyo on the results of projects implemented as part of the first session of DIC's Woman Leader Development Program (W-LDP). During this session, which lasted six months, a total of 25 female employees selected from various departments participated in project-style training, allowing them to identify key issues facing future female executives in regard to challenges such as reforming work styles, transforming DIC's corporate culture and nurturing young employees, and proposing solutions to the General Affairs and HR Department.

#### Female Employees in Management Positions



### TOPIC 2

#### DIC Earns First Selection as Nadeshiko Brand for Fiscal Year 2018

In recognition of its superb achievements in expanding career opportunities for women, DIC was selected as a Nadeshiko Brand for fiscal year 2018, the first time it has honored under this program, which is sponsored by Japan's Ministry of the Economy, Trade and Industry (METI) and the Tokyo Stock Exchange (TSE). DIC has positioned expanding opportunities for its female employees as the first step in its drive to promote diversity and in fiscal year 2018 implemented a variety of important initiatives, including career-building support seminars attended by female employees and their superiors, and management panel discussions on the theme of diversity. Reasons cited for DIC's selection included these initiatives, as well as its efforts to create work environments that are conducive to job satisfaction, including the introduction of flextime and telecommuting systems and instituting mandatory "no overtime days."



## Work Style Reform Initiatives that Support a Healthy Work–Life Balance

DIC views a healthy work–life balance as essential to both self-realization and sustainable corporate growth. Accordingly, from the standpoint of corporate health management\*, the Company continues to expand systems intended to facilitate such a balance. In line with its belief that positive workplaces lead to higher productivity, the Company is committed to supporting the efforts of employees to enjoy diverse lifestyles and realize both a satisfying work life and a fulfilling life outside work.

\* Corporate health management is an approach that emphasizes employee health from a corporate management perspective and the implementation of related strategic measures.

### 1 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. The Company established a program to support employees balancing the demands of a career and childcare in 2007 and has continued to promote measures that exceed legal requirements in the years since to encourage its use. In fiscal year 2008, DIC acquired the Kurumin Mark, which recognizes companies that promote initiatives designed to assist employees in raising children.

#### Major Expansion of the Flextime System

To facilitate flexible working styles, in fiscal year 2017 DIC resolved to significantly expand its flextime system and in April 2018 made the system applicable to all areas of operations other than production floors. The system makes it possible for employees to determine the time at which they end their working day to the extent that it does not hinder business efficiency, as well as to simultaneously make use of telecommuting, with the goal of promoting the independent execution of duties and enhancing self-management capabilities.

## Promoting Telecommuting

In January 2018, DIC launched the DIC Telecommuting System, which enables employees to work at home or another remote location using ICT and which is available to all employees at all sites in Japan. As of December 2018, 500 employees had registered to use the new system.

By creating systems that make it possible for each employee to choose a work style that suits the type of work he or she does, as well as his or her personal needs, DIC will continue working to help employees achieve a healthy work-life balance. The Company will also continue to promote the independent and autonomous execution of duties to reinforce employees' self-management capabilities, thereby accelerating efforts to galvanize employees and encouraging them to give full play to their creativity.

### DIC Rates 3.5 Stars in the Second Nikkei Smart Work Survey

In fiscal year 2018, DIC earned a 3.5-star rating in the Second Nikkei Smart Work Survey, conducted in connection with the Nikkei Smart Work Project, an initiative by Nikkei Inc. DIC's rating of 3.5 stars, up from 3 stars the previous fiscal year, was underpinned by high marks given its implementation and use of technology, notably its adoption of tools to encourage global information sharing, and its actions to help realize diverse and flexible work styles, such as the introduction of a telecommuting system.

## Use of the Childcare Leave and Leave to Assist with Parenting Programs

Thanks to the introduction of various programs to help employees in balancing the demands of work and home and the creation of an environment that encourages employees to take advantage of such thereof, the percentage of DIC employees who return to work after making use of the Childcare Leave Program is currently 100%. In addition, the number of individuals using the Leave to Assist with Parenting Program, which enables male employees to take time off in the weeks after the birth of a child to assist their partner, has risen.

Thanks to efforts to enhance these systems, the average years of employment for female employees has increased and continues to exceed the average for male employees.

	Fiscal year 2014	Fiscal year 2015	Fiscal year 2016	Fiscal year 2017	Fiscal year 2018
Number of employees using the Childcare Leave Program	28	29	35	35	21
Number of employees using the Leave to Assist with Parenting Program	63	64	62	77	81

## 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 agreed-upon overtime limit (80 hours/month), his or her supervisor and the senior executive in charge are automatically notified so that steps can be taken to ameliorate the situation. In addition, the Company has instituted mandatory Groupwide "no overtime days." DIC also encourages employees to take annual paid leave, notably by recommending leave timing at each business site and having employees plan dates for such leave.

## Human Resources Infrastructure Reform

In January 2018, DIC and DIC Graphics unified qualification standards for its management-level (i.e., manager and above) employees, replacing traditional ability-based standards with role-based standards. As a consequence, consistent duty- and role-based standards are now used for the majority of such employees in the Americas, Europe, the Asia-Pacific region, the PRC and Japan. In addition, evaluation systems for Group company executives in Japan and overseas have been integrated to reinforce Groupwide management. Under DIC111, DIC will advance efforts to consolidate employee qualification systems worldwide, unify qualification standards and evaluation formats for management-level employees, and construct a global human resources platform.

## Ensuring Fair and Consistent Treatment

DIC has consolidated its numerous employee qualification systems irrespective of job classification and educational credentials. Promotions are determined through screening tests based on objective criteria, guaranteeing equal opportunities for promotion to all motivated, capable employees. Remuneration and personnel evaluation systems are designed to ensure that individual employees' abilities and achievements are assessed appropriately and reflected in a timely manner. The Company has also introduced management by objectives (MBO)—a goal-setting management tool that promotes both corporate growth and employee development—into its personnel evaluation system. The results of individual evaluations, including reasoning behind determinations, are fed back in full to employees, in a transparent process that ensures employees are largely satisfied with outcomes.

## TOPIC 3

### DIC Earns "White 500" Certification in the Health & Productivity Outstanding Entities Recognition Program

DIC earned certification in the large enterprise category (dubbed the "White 500") of the 2018 and 2019 Health & Productivity Outstanding Entities Recognition Program, which is organized by METI and Nippon Kenko Kaigi<sup>\*1</sup>. This program assesses performance based on multiple criteria, including grasp of employee health-related issues and consideration of actions, establishment of a foundation for the practical implementation of health and productivity management measures, and work engagement<sup>\*2</sup>. DIC received scores significantly above the industry average for all criteria, finishing in the top 20% with a five-star rating.



<sup>\*1</sup> Nippon Kenko Kaigi ("Japan Health Council") is an organization that liaises with private companies, with the full backup of the national government, to put effective measures in place to prolong the healthy life expectancy of citizens and to ensure sound medical services in Japan.

<sup>\*2</sup> A concept used to measure employees' mental health, work engagement is described as a positive, fulfilling work-related state of mind that is characterized by vigor, dedication and absorption. "Vigor" is taking pride and experiencing a sense of satisfaction in one's work, "dedication" is feeling strongly involved in and focused on one's work, and "absorption" is being actively engrossed in one's work.





## Promoting Socially Responsible Procurement Across the Supply Chain

**WEB** <http://www.dic-global.com/en/csr/stakeholder/partner.html>

### The DIC Group CSR Procurement Guidelines

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

### Encouraging CSR Procurement

Based on the DIC Group Universal Purchasing Policy, and incorporating requirements contained in guidebooks put out by external organizations including the Japan Electronics and Information Technology Industries Association (JEITA), DIC 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 DIC 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.) Such measures have proven effective in strengthening the Group's relations with suppliers. The Group also has a mechanism in place for taking the results of CSR procurement assessments into account when selecting new suppliers.

### The DIC Group Green Procurement Guidelines

In line with the DIC Group Universal Purchasing Policy, DIC formulated the DIC Group Green Procurement Guidelines, which prohibit the procurement of materials containing hazardous substances in seven categories<sup>\*1</sup>. The guidelines mandate the submission of a DIC Raw Materials Survey, an SDS and a chemSHERPA<sup>\*2</sup>, as well as a DIC Group Green Procurement Guidelines Survey, when purchasing raw materials, thereby creating a system for eliminating substances of concern. Submission of a Conflict Minerals Survey is also required.

<sup>\*1</sup> (1) Substances the production of which is prohibited, as outlined in Article 55 of Japan's Industrial Health and Safety Act; (2) Substances designated as class 1 specified chemical substances in Japan's Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.; (3) Substances designated for monitoring under Japan's Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.; (4) Chemical substances the production of which is already prohibited, as detailed in Japan's Act on the Protection of the Ozone Layer Through the Control of Specified Substances and Other Measures (ozone-depleting substances listed in the Montreal Protocol); (5) Specified particulates denoted in Japan's Air Pollution Control Act; (6) Specified poisonous substances indicated in Japan's Poisonous and Deleterious Substances Control Act; and (7) Specified substances detailed in the Stockholm Convention on Persistent Organic Pollutants.

<sup>\*2</sup> chemSHERPA is a scheme designed to facilitate the accurate and efficient sharing of information on chemical substances in products across the entire supply chain. DIC began using chemSHERPA in late fiscal year 2017.

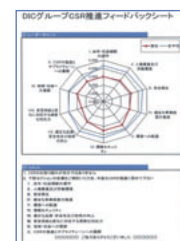
### Analyzing the Results of Questionnaires

In fiscal year 2018, the DIC Group conducted assessments for 24 new and continuing suppliers using version 2 of the *DIC Group Supply-chain CSR Deployment Guidebook*. This brought the total number of suppliers assessed between November 2013 and December 2018 to 753, accounting for 90%-plus of its procurement spending. In addition to analyzing and assessing questionnaire responses, the Group provided feedback to all 753 suppliers and where necessary requested corrective measures for significant issues through on-site inquiries or written comments. In fiscal year 2019, the Group plans to update the *DIC Group Supply-chain CSR Deployment Guidebook*.

**Cumulative Number of Suppliers Assessed (November 2013–December 2018)**

**753**

Equivalent to 90%-plus of procurement spending



Feedback sheet

### Conducting On-Site Inquiries

From fiscal year 2011 through fiscal year 2018, the DIC Group conducted on-site inquiries for 81 suppliers. The objective of these inquiries is to help suppliers further their understanding of CSR. In an on-site inquiry, the Group and the supplier confirm the responses provided by the supplier in the assessment questionnaire. Other efforts include introducing examples of Group initiatives designed to advance CSR procurement and realize sustainability.

### VOICE We are pursuing continuous improvements with the aim of ensuring sustainable procurement.

I have worked in the Purchasing Department of Siam Chemical Industry for roughly 24 years.

Today, companies worldwide face an ever-more diverse array of challenges, including rising awareness of the need to achieve sustainability. The role of Siam Chemical Industry's Purchasing Department has been changed so as to move forward activities with an accurate understanding of social requirements based on the DIC Group's basic sustainability policy, which emphasizes CSR. Accordingly, the department now has the added responsibility of reducing social and environmental impacts through cooperation with partners and customers across our supply chain. The department will work diligently in this regard, and will also convey information in a timely manner as stakeholders today are as interested in environmental and social governance as they are in quality, cost and delivery (QCD).

Siam Chemical Industry was awarded a silver medal for its CSR performance by EcoVadis on February, 2019. We hope to eventually earn a gold medal by strengthening our supply chain through ongoing improvement activities, rather than being satisfied with where we are now. This will not be easy. As the requirements of customers and society change constantly, it is necessary to realize sustainable procurement corresponding to that change.

I will continue to learn more about sustainable procurement and will work to further promote the exchange of information with both suppliers and the DIC Group, thereby increasing understanding as well as support to ensure we meet our goals. I would also like to see the DIC Group as a whole realize more advanced sustainable procurement.



Purchasing Department, Siam Chemical Industry Co., Ltd. **Wantanee Prodpran**

# Business Models that Respond to Social Imperatives

## Cultivating Next-Generation Businesses

**WEB** <http://www.dic-global.com/en/csr/stakeholder/customer.html>

SDGs Goals 8, 9 and 11



QR code



### I New Pillar Creation: Promoting New Businesses that Respond Accurately to the Changing Needs of Society

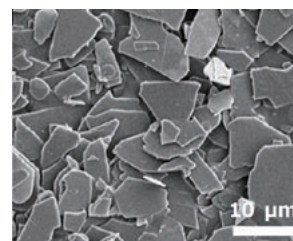
The DIC Group sees one of its key missions as being to achieve sustainable growth both for itself and society by helping to address social imperatives related to climate change, the digitization of society, urbanization and longevity by identifying key business domains and providing products that respond to such imperatives.

With the goal of swiftly realizing this mission, DIC has outlined two basic business development strategies in its new medium-term management plan, DIC111: “Value Transformation” and “New Pillar Creation.” In line with the strategy of Value Transformation, the Group will advance qualitative reforms in existing core businesses by shifting to businesses with differentiated high-value-added products and with more of a focus on social value. New Pillar Creation emphasizes creating new businesses by identifying areas where ESH-related issues and social changes intersect with the DIC Group’s competencies. This strategy continues to guide a number of key initiatives, several of which are described below.

### I Examples of New Pillar Creation

#### 1 Leveraging Compounding Technologies to Develop Heat Management Materials: Contributing to Peace of Mind and Comfort in the Electronics Field

While demand for ever-smaller and faster digital equipment continues to make lives more convenient, heat management is increasingly critical to ensure the safety of such devices. DIC is promoting the development of thermally conductive fillers that quickly diffuse and dissipate heat by applying a proprietary technology that simplifies the synthesis of inorganic oxide single crystals, to improve the crystallinity of inorganic fillers, as well as to control their shape and size. When used in molded plastic items, the characteristic shape and high crystallinity of particles in these innovative fillers is expected to exhibit the high thermal conductivity inherent in crystals, further enhancing mechanical properties.

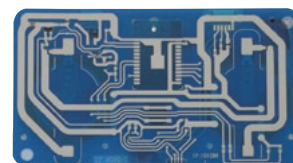


Newly developed specialized thermally conductive fillers

#### 2 Applying Composite Technologies to the Development of Environmental Sensors: Using Digital Transformation to Create Comfortable Environments

Smart buildings, which make use of technologies that optimize office buildings’ use of electric power, thereby contributing to decarbonization, and well buildings, which leverage technologies that improve the comfort and health of people are crucial to urban sustainability. DIC recently developed a sensor for detecting internal temperature, humidity and light intensity in commercial complexes, office buildings and other facilities and in fall 2018 began verification testing in collaboration with several other companies. Using DIC Group composite technologies enabled DIC to realize a groundbreaking wireless environmental sensor with a casing that is thin (5.0 mm), light (20 g), soft and flexible, making it easy to install and remove in any location. This flexible casing was made possible by the use of *SunTronic™* conductive inks to print circuits on sensor substrates. The use of DIC’s *DAITAC®* removable adhesive tape for mounting the sensor facilitates installation and removal simply by sticking on and peeling off.

Going forward, the DIC Group aims to supply sensors not only as independent products but also as part of comprehensive packages that also include other necessary equipment and services, thereby reinforcing its ability to provide solutions that help respond to social imperatives.



Flexible printed substrate of DIC's new wireless environmental sensor

#### 3 *TrinDy™* Compounds for 3D Printers: Combining Technologies to Bolster Efficiency and Convenience in the Healthcare Field

With the number of elderly patients needing dental treatment rising, a shortage of dental technicians who construct custom-made dental prosthesis has become a critical concern. One focus of efforts to address this issue has been to improve the efficiency of processes used in prosthesis construction, which has led to the increasing popularity of prosthesis created using 3D printing.

Because 3D printers can faithfully transform scanned data into 3D shapes, they are used widely in areas where high-precision molding is required. Combining its proprietary polymer and compounding technologies, DIC succeeded in developing *TrinDy™*, a series of compounds for stereolithography—a form of 3D printing that cures with UV light—that achieve improved molding precision and strength. DIC is currently expanding its lineup to include products for implant surgical guides and dental impressions, among others, and is preparing to apply for approval under ISO 13485, the International Organization for Standardization’s standard for quality management systems in the area of medical devices, in line with its goal of providing products that respond effectively to structural changes in society attributable to digitization.



3D-printed dental prosthesis made with *TrinDy™*

# New Technology Development and Value Creation

## Proposing Solutions that Leverage Elemental Technologies

**WEB** [http://www.dic-global.com/en/csr/technology\\_development.html](http://www.dic-global.com/en/csr/technology_development.html)

SDGs Goals 9 and 12



QR code



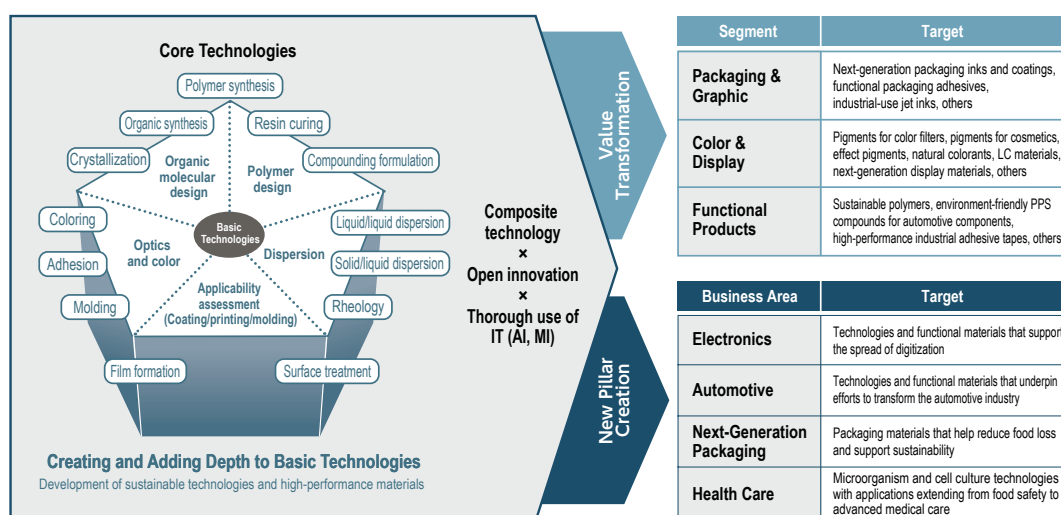
### Achieving Sustainable Growth

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 that contribute to a sustainable society. 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.

### Development of New Technologies, Products and Solutions to Support Business Portfolio Transformation



### Promoting Environment-Friendly Products

The DIC Group is committed to effective stewardship of the products it provides. 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 2018, environment-friendly products accounted for 57.0% 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.

#### Introducing the DIC Sustainability Index

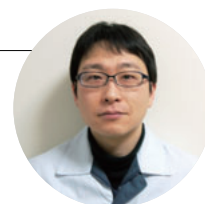
To ensure that stakeholders understand the true worth of DIC Group products and solutions that help address social imperatives, the Group introduced a proprietary sustainability index. The Group aims to begin using the DIC Sustainability Index in fiscal year 2020.

#### Products that Contribute to the Realization of Clean Technologies

The DIC Group develops materials that contribute to the realization of clean technologies designed to help resolve critical global environmental issues.

**VOICE** We are promoting the development of waterborne polyurethane resins that will contribute to the realization of the SDGs.

Amid rising environmental concerns, including climate change, and increasingly urgent social imperatives, companies today face an ever-more diverse array of challenges. DIC is working to develop products that take into account the global environment, ecosystems, socioeconomic systems and other factors, with the aim of contributing to sustainability. Our group focuses on polyurethane resins that impart both texture and durability to solvent-based artificial and synthetic leathers used in automotive interiors, furniture and clothing, which DIC supplies to customers around the world. We are also contributing to the circular economy by developing production processes that achieve significantly improved efficiency and adopting bio-derived raw materials.



Assistant Manager, Polymer Technical Group 6, Polymer Technical Division 2, DIC Corporation **Tomohiro Tetsui**

# Harmony with the Community and Social Contributions

## Adding Color & Comfort to Lifestyle

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

SDGs Goals 3 and 4



QR code



### Visiting Science Lab Program

In line with the Japanese government's efforts to promote career education initiatives, as well as to help curb a decline in the popularity of science among children, DIC and DIC Graphics conduct visiting science labs at public elementary schools. Since launching this initiative in 2010, the companies have provided classes to approximately 3,000 sixth graders at 38 elementary schools.

In fiscal year 2018, DIC and DIC Graphics conducted visiting science labs as part of the Tohoku University Graduate School of Engineering's Science Campus project, at Tokyo University of the Arts and at DIC Family Day, an event held for the families of employees. In fiscal year 2018, this program won silver in the 2018 Education Support Grand Prix, sponsored by Tokyo-based Leave a Nest Co., Ltd. DIC pledges to continue offering this program in the years ahead.



Visiting science lab

### Comment **As part of the Graduate School of Chemical Engineering, this is what I see as the importance of social contribution initiatives for children by B-to-B companies.**

In primary school science education, we believe it is important to create an environment that brings out and broadens children's interests. However, in today's information-intensive world people tend to be primarily interested in products and advertisements around them. I am on staff at the Graduate School of Chemical Engineering, but the students I teach seem to want to find jobs at companies that manufacture the final product they see around them—a sentiment shared by their parents. There are many B-to-B companies in areas such as materials and intermediate products manufacturing where students who have studied materials science can exercise their capabilities, but it can be difficult to understand what such companies do.

I see the Tohoku University Science Campus project as important for children because it helps communicate the importance of B-to-B companies to parents who participate with their children. This year's project once again confirmed this belief. It is my hope that DIC will continue to implement educational initiatives that encourage children's interest in science and contribute to the future of science and technology in Japan by ensuring the well-balanced allocation of human resources.



Director, Center for Creative Engineering; Professor, Graduate School of Engineering, Tohoku University **Hideyuki Aoki**

### 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 January 2018, students from Chiba Prefectural Sakura High School—a Super Science High School\*—were given the opportunity to take part in a visiting lab lesson conducted by staff of the Central Research Laboratories on the theme of the role of intellectual property rights in corporate management. In August 2018, an experiment in pigment synthesis using *Spirulina* was conducted as part of a visiting lab lesson for primary school children in Chiba Prefecture as part of the Chiba Prefectural Education Agency's Dream Challenge Hands-On School. In addition to experiments, time was allocated for the young employees who served as instructors to talk about how they became interested in science and the challenges and rewards of research. At the same time as it helps children enjoy science, this program thus enables young employees to contribute to career education.

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

### 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 2019, the museum is celebrating its 30th anniversary. As of December 2018, cumulative visitors to the museum had surpassed 2.45 million. DIC views operation of the museum, which assumed its current name in 2011, as a social contribution initiative that the DIC Group is uniquely positioned to undertake as an organization intrinsically involved in color.

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-20 century American art, including Mark Rothko, Cy Twombly and Frank Stella. In addition to a 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 museum 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 Kawamura Memorial DIC Museum of Art 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 2018 drive and matching gift program were donated to 21 children's homes and facilities providing support for disabled individuals.



# Communication with Stakeholders

## Promoting Disclosure and Communication

**WEB** <http://www.dic-global.com/en/csr/stakeholder/>

SDGs Goal 17



QR code



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 business partners	Ties with society	Ties with employees	Ties with the media
<b>Basic approach</b>	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.	Promote socially responsible procurement across the supply chain and build solid relationships that will facilitate sustainable procurement.	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.
<b>Communications tools</b>	<ul style="list-style-type: none"> <li>● Websites</li> <li>● Product pamphlets</li> <li>● Digital marketing</li> <li>● Corporate profile DVDs</li> <li>● DIC Report</li> <li>● Corporate PR film</li> <li>● News releases</li> <li>● Television advertisements</li> </ul>	<ul style="list-style-type: none"> <li>● Websites</li> <li>● Press conferences</li> <li>● Quarterly results announcements</li> <li>● Yuka Shoken Hokokucho (financial disclosure document required of listed companies in Japan)</li> <li>● Timely disclosure</li> <li>● Notice of Convocation of the Annual General Meeting of Shareholders</li> <li>● Shareholder newsletters</li> <li>● Corporate profile DVDs</li> <li>● DIC Report</li> <li>● News releases</li> <li>● Television advertisements</li> </ul>	<ul style="list-style-type: none"> <li>● DIC Group CSR Procurement Guidelines</li> <li>● DIC Group Green Procurement Guidelines</li> <li>● Supplier CSR self-evaluation questionnaires</li> <li>● Feedback sheets</li> <li>● Conflict Minerals Reporting Template</li> </ul>	<ul style="list-style-type: none"> <li>● Websites</li> <li>● Site reports</li> <li>● Corporate profile DVDs</li> <li>● DIC Report</li> <li>● News releases</li> <li>● Television advertisements</li> </ul>	<ul style="list-style-type: none"> <li>● DIC Plaza (in-house newsletter)</li> <li>● Intranet</li> <li>● DIC Pocket Book (in-house Group data file)</li> <li>● DIC Report</li> <li>● Corporate PR film</li> <li>● News releases</li> <li>● Television advertisements</li> <li>● Global linkage</li> <li>● Branding questionnaire</li> </ul>	<ul style="list-style-type: none"> <li>● Press conferences</li> <li>● Interviews with journalists</li> <li>● DIC Report</li> <li>● News releases</li> <li>● Television advertisements</li> </ul>
<b>Opportunities for communication</b>	<ul style="list-style-type: none"> <li>● Sales activities</li> <li>● Participation in exhibitions</li> </ul>	<ul style="list-style-type: none"> <li>● General shareholders' meetings</li> <li>● Results presentations</li> <li>● IR conferences</li> <li>● IR meetings</li> <li>● DIC IR Day</li> </ul>	<ul style="list-style-type: none"> <li>● On-site inquiries</li> </ul>	<ul style="list-style-type: none"> <li>● Production facility tours</li> <li>● Participation in projects involving collaboration among industrial concerns, government bodies and academic institutions</li> <li>● Participation in community events</li> <li>● Environmental monitoring</li> </ul>	<ul style="list-style-type: none"> <li>● Labor-management councils</li> <li>● Results presentations for employees</li> <li>● Presentations on the DIC Group Code of Business Conduct</li> <li>● Sustainability presentations</li> <li>● DIC Family Day</li> <li>● Plant tours for employee families</li> </ul>	<ul style="list-style-type: none"> <li>● Newspapers</li> <li>● Economic publications</li> <li>● Industry publications</li> </ul>

#### Ties with Customers



CITE Japan



Tokyo Pack

#### Ties with Society



Dream Challenge Hands-On School (Chiba Prefecture)



110th anniversary celebration

#### Ties with the Media

Press conferences held in fiscal year 2018

82

Interviews with journalists in fiscal year 2018

92

#### Ties with Shareholders and Investors



Results presentation (February 2019)



DIC IR Day

#### Ties with Employees



Results presentation for employees (February 2019)



DIC Family Day



DIC Plaza (in-house newsletter)

# Financial Report for Fiscal Year 2018

## Analysis of Results of Operations

### Overview of Operating Results

Economic conditions worldwide recovered gradually in the fiscal year ended December 31, 2018, although signs of weakness were seen in certain areas. Moderate recovery persisted in North America and Europe. In Asia, economic conditions picked up slowly in Southeast Asia and India, despite slowing in the PRC. Japan's economy rallied steadily.

In this environment, consolidated net sales increased 2.0%, to ¥805.5 billion, reflecting multiple factors, including the revision of sales prices and firm shipments. Operating income declined 14.3%, to ¥48.4 billion, hampered by rising raw materials prices, higher distribution costs and the depreciation of currencies in European emerging economies, among others. Ordinary income was down 14.5%, to ¥48.7 billion, with causes including lower operating income. Net income attributable to owners of the parent fell 17.0%, to ¥32.0 billion. Reasons behind this result included the decrease in ordinary income.

(Billions of yen)

	FY2017	FY2018	Change (%)	Local currency basis (%)
Net sales	789.4	805.5	2.0%	3.3%
Operating income	56.5	48.4	-14.3%	-11.4%
Ordinary income	57.0	48.7	-14.5%	—
Net income attributable to owners of the parent	38.6	32.0	-17.0%	—
Average exchange rate (¥/US\$1.00)	112.33	110.46		
Average exchange rate (¥/EUR1.00)	127.03	130.46		

### Segment Results

(Billions of yen)

	Net sales				Operating income (loss)			
	FY2017	FY2018	Change (%)	Local currency basis (%)	FY2017	FY2018	Change (%)	Local currency basis (%)
Printing Inks	373.7	380.6	1.8%	4.6%	17.4	13.8	-21.0%	-10.8%
Fine Chemicals	135.4	132.3	-2.3%	-1.8%	17.4	16.4	-5.5%	-5.9%
Polymers	197.9	205.8	4.0%	3.8%	19.6	17.5	-10.6%	-10.7%
Compounds	64.7	65.2	0.8%	0.9%	5.0	3.2	-35.4%	-35.7%
Application Materials	56.1	58.5	4.3%	4.1%	2.6	3.2	23.0%	22.4%
Others, Corporate and eliminations	(38.4)	(36.9)	—	—	(5.5)	(5.7)	—	—
Total	789.4	805.5	2.0%	3.3%	56.5	48.4	-14.3%	-11.4%

Segment results in key markets are as follows. Year-on-year percentage changes in squared parentheses represent increases or decreases on a local currency basis. 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.

## Printing Inks

### ■ Japan

Net sales	¥74.4 billion	Change	-3.6%
Operating income	¥1.8 billion	Change	-53.4%

Sales in Japan declined, a consequence of diminished demand for publishing inks, among others.

Operating income fell sharply, owing to the aforementioned sales results, as well as to rising raw materials prices, higher distribution costs and other factors.

### ■ The Americas and Europe

Net sales	¥247.2 billion	Change	2.5%	[6.1%]
Operating income	¥8.8 billion	Change	-7.7%	[9.3%]

Although sales of packaging inks rose, sales in North America edged down, owing to waning demand for publishing inks and news inks. In Europe, sales increased, boosted by brisk shipments of packaging inks. Sales in Central and South America were up in all product categories. As a result, overall sales in the Americas and Europe advanced, underpinned by an increase in sales of packaging inks, among others.

Despite rising in local currency terms, reflecting the aforementioned sales results and expanded sales of security inks, operating income was down after translation owing to the depreciation of currencies in emerging economies, including the Turkish lira.

### ■ Asia and Oceania

Net sales	¥67.6 billion	Change	4.3%	[7.1%]
Operating income	¥3.2 billion	Change	-19.8%	[-18.6%]

Higher shipments of packaging inks and publishing inks bolstered sales in the PRC and Southeast Asia. Sales in Oceania fell, with causes including fading demand for publishing inks and news inks. Sales in India increased in all product categories. For these reasons, overall sales in Asia and Oceania advanced.

Operating income decreased significantly, regardless of the aforementioned sales results, a consequence of rising raw materials prices and other factors.

## Fine Chemicals

Net sales	¥132.3 billion	Change	-2.3%	[-1.8%]
Operating income	¥16.4 billion	Change	-5.5%	[-5.9%]

Sales of pigments were down, despite an increase in shipments of pigments for color filters and effect pigments, among others. Reasons behind this result included a lull in shipments of pigments for cosmetics and flagging demand for other pigments. Sales of TFT LCs fell, with reasons including falling sales prices. As a consequence, segment sales declined.

Owing to the aforementioned sales results, as well as to the impact of environmental regulations in the PRC, segment operating income decreased.

## Polymers

Net sales	¥205.8 billion	Change	4.0%	[3.8%]
Operating income	¥17.5 billion	Change	-10.6%	[-10.7%]

Sales of epoxy resins and other products for electronic and electrical equipment advanced both in Japan and overseas. In addition, the revision of sales prices progressed. For these and other reasons, segment sales rose.

Segment operating income declined, notwithstanding the aforementioned sales results. Factors behind this result included the fact that efforts to revise sales prices failed to keep up with rising raw materials prices.

## Compounds

Net sales	¥65.2 billion	Change	0.8%	[0.9%]
Operating income	¥3.2 billion	Change	-35.4%	[-35.7%]

Shipments of PPS compounds and jet inks expanded steadily. Nonetheless, segment sales were up only slightly, owing to the scaling back of low-margin businesses and other factors.

Segment operating income fell sharply. This was attributable to a one-time cost increase associated with the scaling back of low-margin businesses, as well as to rising raw materials prices, among others.

## Application Materials

Net sales	¥58.5 billion	Change	4.3%	[4.1%]
Operating income	¥3.2 billion	Change	23.0%	[22.4%]

Segment sales increased, reflecting higher shipments of high-value-added products such as coextruded multilayer films and hollow-fiber membrane modules, among others.

Segment operating income rose substantially. Reasons behind this result included the aforementioned sales results.

# Consolidated Financial Statements

## Consolidated Balance Sheet As of December 31, 2017 and 2018

(Millions of yen)

	2017	2018
<b>Assets</b>		
Current assets		
Cash and deposits	17,883	19,782
Notes and accounts receivable—trade	226,968	209,763
Merchandise and finished goods	90,010	94,611
Work in process	9,053	9,403
Raw materials and supplies	58,911	61,937
Deferred tax assets	9,574	8,891
Other	23,340	23,878
Allowance for doubtful accounts	(10,763)	(9,722)
Total current assets	424,976	418,543
Non-current assets		
Property, plant and equipment		
Buildings and structures	261,221	259,417
Accumulated depreciation	(168,778)	(170,525)
Buildings and structures, net	92,443	88,892
Machinery, equipment and vehicles	409,362	403,877
Accumulated depreciation	(338,808)	(332,926)
Machinery, equipment and vehicles, net	70,554	70,951
Tools, furniture and fixtures	63,336	63,291
Accumulated depreciation	(52,207)	(51,896)
Tools, furniture and fixtures, net	11,129	11,395
Land	50,307	48,985
Construction in progress	7,244	7,928
Total property, plant and equipment	231,677	228,151
Intangible assets		
Goodwill	199	34
Software	3,837	2,887
Customer-related assets	874	3,359
Other	2,674	7,502
Total intangible assets	7,584	13,782
Investments and other assets		
Investment securities	76,867	67,523
Deferred tax assets	31,871	28,612
Net defined benefit asset	33,408	25,089
Other	26,858	23,947
Allowance for doubtful accounts	(1,485)	(161)
Total investments and other assets	167,519	145,010
Total non-current assets	406,780	386,943
Total assets	831,756	805,486



## Consolidated Balance Sheet

(Millions of yen)

	2017	2018
<b>Liabilities</b>		
Current liabilities		
Notes and accounts payable—trade	117,199	118,554
Short-term loans payable	61,385	29,986
Current portion of long-term loans payable	27,677	49,792
Lease obligations	557	667
Income taxes payable	4,793	2,843
Deferred tax liabilities	399	325
Provision for bonuses	7,071	6,283
Other	47,509	47,476
Total current liabilities	266,590	255,926
Non-current liabilities		
Bonds payable	50,000	60,000
Long-term loans payable	122,017	119,791
Lease obligations	4,045	4,229
Deferred tax liabilities	11,653	6,672
Net defined benefit liability	22,774	20,519
Asset retirement obligations	1,329	1,482
Other	9,397	9,533
Total non-current liabilities	221,215	222,226
Total liabilities	487,805	478,152
<b>Net assets</b>		
Shareholders' equity		
Capital stock	96,557	96,557
Capital surplus	94,445	94,445
Retained earnings	186,768	207,421
Treasury shares	(1,828)	(1,823)
Total shareholders' equity	375,942	396,600
Accumulated other comprehensive income		
Valuation difference on available-for-sale securities	7,874	1,407
Deferred gains or losses on hedges	(3)	14
Foreign currency translation adjustment	(46,462)	(67,617)
Remeasurements of defined benefit plans	(22,222)	(31,508)
Total accumulated other comprehensive income	(60,813)	(97,704)
Non-controlling interests	28,822	28,438
Total net assets	343,951	327,334
Total liabilities and net assets	831,756	805,486

## Consolidated Statement of Income Years ended December 31, 2017 and 2018

(Millions of yen)

	2017	2018
Net sales	789,427	805,498
Cost of sales	605,809	629,850
Gross profit	183,618	175,648
Selling, general and administrative expenses		
Freightage and packing expenses	12,596	13,230
Employees' salaries and allowances	41,857	42,660
Provision of allowance for doubtful accounts	330	669
Provision for bonuses	2,760	2,423
Retirement benefit expenses	959	33
Research and development costs	12,427	12,923
Other	56,206	55,325
Total selling, general and administrative expenses	127,135	127,263
Operating income	56,483	48,385
Non-operating income		
Interest income	1,817	3,781
Dividends income	447	425
Equity in earnings of affiliates	4,069	3,845
Other	2,019	1,631
Total non-operating income	8,352	9,682
Non-operating expenses		
Interest expenses	3,565	5,114
Foreign exchange losses	1,456	828
Other	2,854	3,423
Total non-operating expenses	7,875	9,365
Ordinary income	56,960	48,702
Extraordinary income		
Gain on sales of investment securities	—	3,270
Gain on sales of subsidiaries and affiliates securities	315	679
Gain on sales of non-current assets	1,156	431
Insurance income	—	237
Gain on change in equity	641	—
Total extraordinary income	2,112	4,617
Extraordinary loss		
Loss on disposal of non-current assets	2,682	2,535
Severance costs	951	1,539
Loss on disaster	—	409
Early termination fee	376	—
Impairment loss	234	—
Total extraordinary loss	4,243	4,483
Income before income taxes and non-controlling interests	54,829	48,836
Income taxes—current	10,517	11,015
Income taxes—deferred	3,388	4,019
Total income taxes	13,905	15,034
Net income	40,924	33,802
Net income attributable to non-controlling interests	2,321	1,774
Net income attributable to owners of the parent	38,603	32,028

## Consolidated Statement of Comprehensive Income Years ended December 31, 2017 and 2018

(Millions of yen)

	2017	2018
Net income	40,924	33,802
Other comprehensive income		
Valuation difference on available-for-sale securities	2,590	(6,502)
Deferred gains or losses on hedges	183	17
Foreign currency translation adjustment	979	(20,203)
Remeasurements of defined benefit plans, net of tax	4,718	(9,413)
Share of other comprehensive income of associates accounted for using equity method	1,563	(1,545)
Total other comprehensive income	10,033	(37,646)
Comprehensive income	50,957	(3,844)
Comprehensive income attributable to		
Comprehensive income attributable to owners of the parent	48,234	(4,863)
Comprehensive income attributable to non-controlling interests	2,723	1,019

# Consolidated Statement of Changes in Net Assets

Years ended December 31, 2017 and 2018

(Millions of yen)

	Shareholders' equity				
	Capital stock	Capital surplus	Retained earnings	Treasury shares	Total shareholders' equity
Balance at January 1, 2017	96,557	94,094	159,541	(1,213)	348,979
Dividends from surplus			(11,376)		(11,376)
Net income attributable to owners of the parent			38,603		38,603
Purchase of treasury shares				(615)	(615)
Change in ownership interest due to transactions with non-controlling interests		351			351
Net changes of items other than shareholders' equity					
Balance at December 31, 2017	96,557	94,445	186,768	(1,828)	375,942
Dividends from surplus			(11,375)		(11,375)
Net income attributable to owners of the parent			32,028		32,028
Purchase of treasury shares				(10)	(10)
Disposal of treasury shares				15	15
Net changes of items other than shareholders' equity					
Balance at December 31, 2018	96,557	94,445	207,421	(1,823)	396,600

(Millions of yen)

	Accumulated other comprehensive income					Non-controlling interests	Total net assets
	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		
Balance at January 1, 2017	5,248	(187)	(48,626)	(26,879)	(70,444)	28,482	307,017
Dividends from surplus							(11,376)
Net income attributable to owners of the parent							38,603
Purchase of treasury shares							(615)
Change in treasury shares of parent arising from transactions with non-controlling shareholders							351
Net changes of items other than shareholders' equity	2,626	184	2,164	4,657	9,631	340	9,971
Balance at December 31, 2017	7,874	(3)	(46,462)	(22,222)	(60,813)	28,822	343,951
Dividends from surplus							(11,375)
Net income attributable to owners of the parent							32,028
Purchase of treasury shares							(10)
Disposal of treasury shares							15
Net changes of items other than shareholders' equity	(6,467)	17	(21,155)	(9,286)	(36,891)	(384)	(37,275)
Balance at December 31, 2018	1,407	14	(67,617)	(31,508)	(97,704)	28,438	327,334

# Consolidated Statement of Cash Flows


Years ended December 31, 2017 and 2018

(Millions of yen)

	2017	2018
Net cash provided by (used in) operating activities		
Income before income taxes and non-controlling interests	54,829	48,836
Depreciation and amortization	31,524	32,825
Amortization of goodwill	345	156
Increase (decrease) in allowance for doubtful accounts	(720)	(263)
Increase (decrease) in provision for bonuses	13	(782)
Interest and dividends income	(2,264)	(4,206)
Equity in (earnings) losses of affiliates	(4,069)	(3,845)
Interest expenses	3,565	5,114
Loss (gain) on sales and retirement of non-current assets	1,526	2,104
Impairment loss	234	—
Loss (gain) on sales of subsidiaries and affiliates securities	(315)	(679)
Loss (gain) on sales of investment securities	—	(3,270)
Decrease (increase) in notes and accounts receivable—trade	(7,070)	6,897
Decrease (increase) in inventories	(9,742)	(14,516)
Increase (decrease) in notes and accounts payable—trade	9,328	3,966
Other, net	(11,246)	(9,524)
Subtotal	65,938	62,813
Interest and dividends income received	4,180	6,307
Interest expenses paid	(3,628)	(5,050)
Income taxes paid	(12,294)	(13,080)
Net cash provided by (used in) operating activities	54,196	50,990
Net cash provided by (used in) investing activities		
Payments into time deposits	(8,231)	(3,832)
Proceeds from withdrawal of time deposits	8,560	2,893
Purchase of property, plant and equipment	(32,192)	(31,343)
Proceeds from sales of property, plant and equipment	2,103	1,336
Purchase of intangible assets	(1,392)	(741)
Purchase of shares and investments in capital of subsidiaries resulting in change in scope of consolidation	(515)	(11,524)
Proceeds from shares and investments in capital of subsidiaries resulting in change in scope of consolidation	—	679
Purchase of subsidiaries and affiliates securities	(27,209)	(157)
Proceeds from sales of subsidiaries and affiliates securities	—	671
Purchase of investment securities	(851)	(509)
Proceeds from sales and redemption of investment securities	465	4,150
Payments for transfer of business	(338)	(690)
Other, net	662	679
Net cash provided by (used in) investing activities	(58,938)	(38,388)
Net cash provided by (used in) financing activities		
Net increase (decrease) in short-term loans payable	9,272	(29,689)
Proceeds from long-term loans payable	44,823	60,627
Repayment of long-term loans payable	(48,022)	(39,204)
Proceeds from issuance of bonds	20,000	10,000
Cash dividends paid	(11,376)	(11,375)
Cash dividends paid to non-controlling interests	(1,439)	(1,348)
Net decrease (increase) in treasury shares	(615)	5
Purchase of shares and investments in capital of subsidiaries that does not result in change in scope of consolidation	(578)	(62)
Other, net	(690)	(735)
Net cash provided by (used in) financing activities	11,375	(11,781)
Effect of exchange rate change on cash and cash equivalents	(5,653)	159
Net increase (decrease) in cash and cash equivalents	980	980
Cash and cash equivalents at beginning of the period	16,671	17,651
Cash and cash equivalents at end of the period	17,651	18,631



# Third-Party Verification



## Verification Statement

21<sup>st</sup> May 2019  
 Statement No : SGS19/007

**Mr. Kaoru Ino**  
 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 (ISO14064-3: 2006 and the SGS verification protocol) regarding the data (GHG emissions, energy consumption, waste amount, the number of occupational accidents and the data of female managers) 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 as follows.

The scope	The boundary
The performance data Scope 1 and 2 (CO <sub>2</sub> emissions) and energy consumption *excluding the vehicles which run outside of the sites	52 domestic group company sites (including offices and laboratories) and 156 overseas group company sites (including laboratories)
The performance data Scope 3 (category 5), waste amount (generation amount, landfill amount, emission amount from facilities and not material/thermal recycled amount) and the number of occupational accidents (including accidents without lost days)	The domestic group company sites (excluding offices)
The data of female managers (the number of managers and female managers and the ratio to female managers)	The DIC parent company sites

The period subject to report is from 1<sup>st</sup> January 2018 to 31<sup>st</sup> December 2018.

**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 conducted at the Komaki Plant and the DIC Graphics Corporation Kansai Plant, and analytical procedures and interviews for other sites in the scope of verification carried out at the head office


The criteria for this review are based on "GHG Emissions Calculation and Reporting Manual Ver. 4.3.2", "the protocol specified by the Organization" and "Basic Guidelines on Accounting for Greenhouse Gas Emissions throughout the Supply Chain, Ver. 2.3".


**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 (Scope1: 268,634t-CO<sub>2</sub>, Scope2: 360,582t-CO<sub>2</sub>, Scope3(Category5): 17,939t-CO<sub>2</sub>) 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.

**For and on behalf of SGS Japan Inc**  
 Senior Executive & Business Manager  
 Certification and Business Enhancement

Yuji Takeuchi







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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).

## 1908 Established as Kawamura Ink Manufactory

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



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).



DIC's previous corporate symbol

## 1968

### Commences sales of the DIC Color Guide®

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



DIC Color Guide®

Promotes expansion of printing inks business

Diversifies operations by building on base in printing inks, organic pigments and synthetic resins

Actively introduces technologies from overseas and promotes further diversification

## 1973

### Establishes the Environment and Safety Response Department

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

## 1990

### Opens Kawamura Memorial Museum of Art

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



## 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.



Certification of DIC as signatory to the Responsible Care Global Charter



## 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.

## 2010

### Develops groundbreaking series of green pigments for LCD color filters

Develops the G58 series of green pigments for use in color filters for liquid crystal displays (LCDs), which deliver marked increases in brightness and contrast compared with previous products and contribute substantially to reduced energy consumption by LCDs.

## 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

### 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 advertisement.

## 2017

### Enters capital and business alliance with Taiyo Holdings

Concludes capital and business alliance with Taiyo Holdings Co., Ltd., one of the world's leading manufacturers of solder resist for PWBs.

## 2019

### Launches DIC111 medium-term management plan

Clarifies strategies for transforming the DIC Group's business portfolio, that is, for building a sophisticated portfolio focused on ESH-related issues and social changes by advancing qualitative reforms in existing core businesses and creating new businesses with the potential to become mainstays.

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

Takes steps to advance environmental protection and expands global presence

Prepares for a new phase of growth

## 2007

### Launches CSR program

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

## 2010

### Joins United Nations Global Compact

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



## 2014

### Changes designation to "sustainability"

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



In-house poster promoting sustainability initiatives

## 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. As of 2018, has been included in the index for four consecutive years.

MEMBER OF  
**Dow Jones Sustainability Indices**  
In Collaboration with RobecoSAM

(Contact)

## DIC Corporation

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# Color & Comfort

Making it Colorful  
Innovation through Compounding  
Specialty Solutions



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