

# Integrated Report 2019



**Nissan Chemical**  
CORPORATION



**Nissan Chemical**  
CORPORATION

## Where it all begins.

### Mission Statement (Our Values)

“Contribute to society with excellent technologies and products.”

“Promote prosperity and welfare through concerted efforts to constantly develop new areas.”

“Respect people who exhibit a sense of responsibility, originality and motivation.”

### Corporate Philosophy (Corporate Purpose)

We contribute to society in harmony with the environment, based on our excellent technologies, products and services.

### Corporate Vision

A corporate group that contributes to human survival and development.

### Business Model

Future-Creating Enterprise that Responds to Social Needs with Unique, Innovative Technologies.

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### Basic CSR Policy

- (1) Conduct sensible business activities as a member of the international community in compliance with laws and regulations.
- (2) Enhance corporate value by providing safe and useful products and services.
- (3) Strive to achieve no-accidents & no-disasters and protect the global environment.
- (4) Disclose information appropriately with a focus on communication with stakeholders.
- (5) Create a cheerful and pleasant workplace by respecting the individuality and personalities of employees.
- (6) Conduct ourselves as good corporate citizens and decent members of society.

Various social issues, such as population explosions in developing countries, declining birth rates and aging populations in developed countries, progressing climate change and depletion of water resources, food issues, and human rights issues, are increasing and threaten the sustainability of society.

In 2015, Sustainable Development Goals (SDGs) which includes increased demand for companies were adopted by United Nation to respond to global issues.

Our company was founded in 1887 as Japan's first chemical fertilizer manufacturer to solve food issues which Japan faced at the time under the founding spirit “to dedicate ourselves to prosperity of the nation by agricultural fertility.” The pioneering spirit has been still very much alive at Nissan Chemical as we have continued putting effort into innovative technologies and projects that promote social progress, greatly transforming our business operations.

We currently provide products and services on a global scale mainly in the fields of chemicals, performance materials, agricultural chemicals, and pharmaceuticals.

We will continue to aim for synergistic development with society by refining our core technologies that we have cultivated throughout history and work to create products that meet the demands of society.

**Kojiro Kinoshita**

President & CEO

# Editorial Policy

In 1992, we introduced responsible care activities, and have disclosed the details of these activities via Environment and Safety Report from 1999. The Report transformed into CSR Report in 2013 and Annual report in which business overview and financial section were included since 2016. Since 2018, we have included the materiality, process of value creation, and detailed financial information in addition to the business overview, E (Environmental), S (Society), and G (Governance) information to make this integrated report easier to understand creating medium to long-term value of Nissan Chemical Group to all stakeholders, including shareholders and investors.

We aim to make this report as a valuable communication tool by deepening our business activities and enhancing the content of the report.

## Reporting period

FY2018 (April 2018 to March 2019)

\* The occupational accidents data is from January to December 2018 (P42).

## Issued

December 2019

(The previous edition was issued in November 2018, and the next edition is planned to be issued in November 2020)

## Frequency of issuance

Annually

## Guidelines used as reference

- International Integrated Reporting Council (IIRC) “International <IR> Framework”
- GRI Sustainability Reporting Guidelines Standard
- ISO26000
- Ministry of the Environment “Environmental Reporting Guidelines”

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## Scope of reporting

The initiatives are described mainly in the financial and ESG information of the activities of Nissan Chemical Group.

### Consolidated subsidiaries:

Nissei Corporation, Nissan Butsuryu Co., Ltd., Nissan Green & Landscape Co., Ltd., Nissan Engineering, Ltd., Nihon Hiryo Co., Ltd., Nissan Chemical America Corporation (NCA), Nissan Chemical Europe S.A.S. (NCE), NCK Co., Ltd. (NCK)

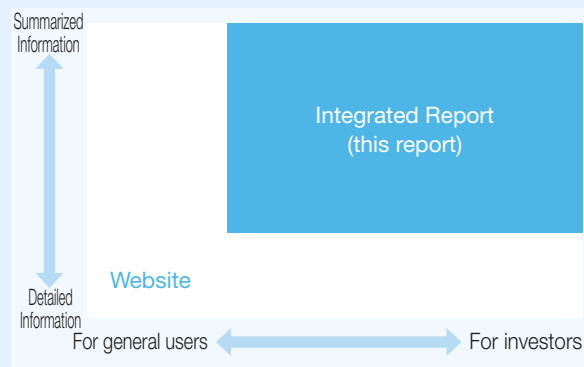
### Entities accounted for using equity method:

Sun Agro Co., Ltd., Clariant Catalysts (Japan) K.K.

### Group companies:

In addition to the above consolidated subsidiaries and entities accounted for using equity method, HOKKAIDO SUN AGRO CO., LTD., Environmental Technical Laboratory, Ltd., Nissan Chemical Taiwan Co., Ltd. (NCT), Nissan Chemical Product (Shanghai) Co., Ltd. (NCS), Nissan Chemical Agro Korea Ltd. (NAK), Nissan Chemical Do Brasil (NCB), Nissan Agro Tech India PVT. LTD. (NAI), Nissan Chemical Materials Research (Suzhou) Co., Ltd. (NSU)

## Information disclosure system



\* For more detailed information, please visit our website.  
<https://www.nissanchem.co.jp/>



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# Message from the President



**Kojiro  
Kinoshita**  
President & CEO

## Looking Back at FY2018

Despite difficult business conditions, we achieved the goals established for the first three years of the mid-term business plan.

In FY2018, although Japan's domestic economy continued to show a moderate recovery trend, including some signs of improvement in personal consumption against a background of improving income and employment conditions, exports decreased due to factors such as the strong appearance of economic slowdowns in regions such as China and Europe during the second half of the period.

Under these circumstances, the results for the current fiscal year are as follows: Sales exceeded 200 billion yen for the first time reaching 204.9 billion yen, Operating income: 37.1 billion yen, Ordinary income: 39.1 billion yen, Net income: 29.4 billion yen. Sales

reached record highs for four consecutive years with operating income and ordinary income reaching record highs for five consecutive years and net income reaching record highs for six consecutive years.

Except for sales, we achieved the numerical targets for the first three years of the "Vista2021" mid-term business plan one year ahead of schedule with an operating margin of 18.1%. We have maintained an operating margin of above 10% for 16 consecutive years.

The Company has always regarded return on equity (ROE) as the most important performance indicator. ROE reached 16.6% in FY2018. In addition, shareholders experienced substantial profit returns due

## A start of new stage for realizing our corporate vision in 2030.

to factors such as the Company achieving a total payout ratio of 72.0% and dividend payout ratio of 41.5%.

Looking back each segment in FY2018:

As for the Chemicals Division pertaining to sales of Melamine (adhesive agent for particle board) in Japan, although the amount of sales in the form of shipments of construction materials for hotels and offices was favorable, conditions continue to be difficult with no bottom in sight due to sluggish exports, etc. caused by US-China trade friction and other factors.

As for sales of display materials from the Performance Materials Division, although the number of smartphone shipments for the entire smartphone market fell below the previous year, we achieved higher sales than in the previous year by acquiring new customers and proceeding with product development closely associated with customer needs. In particular, sales of liquid crystal alignment material for IPS (In Plane Switching) devices contributed significantly to profits. In the semiconductor market, sales of our

semiconductor materials increased, such as sales of BARC, (anti-reflective coating material) corresponding growth of memory and logic devices market.

As for the Agricultural Chemicals Division, sales of Fluralaner (active ingredient for veterinary pharmaceuticals) and agrochemicals for the overseas market increased. In addition, we launched GRACIA<sup>®</sup>, our first standard insecticide, in South Korea in 2018 and in Japan in 2019. GRACIA<sup>®</sup> is effective against a wide range of important pests as well as being very effective against pest that have developed a resistance to existing pesticides, and this insecticide has the advantage of having little impact on honeybees. I expect that it will be a product that brings in 10 billion yen in sales and becomes the Company's next growth engine.

In the Pharmaceuticals Division, although domestic and overseas sales of LIVALO<sup>®</sup> (anti-cholesterol agent) were impacted due to sales of generics, Finetech (contracting business of technological development of pharmaceuticals) sales proceeded as planned.

## About Our Long-term and Mid-term Business Plans

In order to achieve our long-term business plan “Progress2030”, we started Stage II of our mid-term business plan “Vista2021” in 2019.

In 2016, we launched “Progress2030”, a long-term business plan, and “Vista2021”, a six-year mid-term business plan.

When formulating “Progress 2030”, we held many discussions about what we can do, what we can contribute to, and what the type of corporate group we want to become in 15 years, to decide the direction our Group should head in consideration of social and economic changes leading up to 2030. The plan aims to make Nissan Chemical “A corporate group that creates better future for human and environment by helping to solve social issue” taking into account social issues such as the SDGs (Sustainable Development Goals) established by the United Nations.

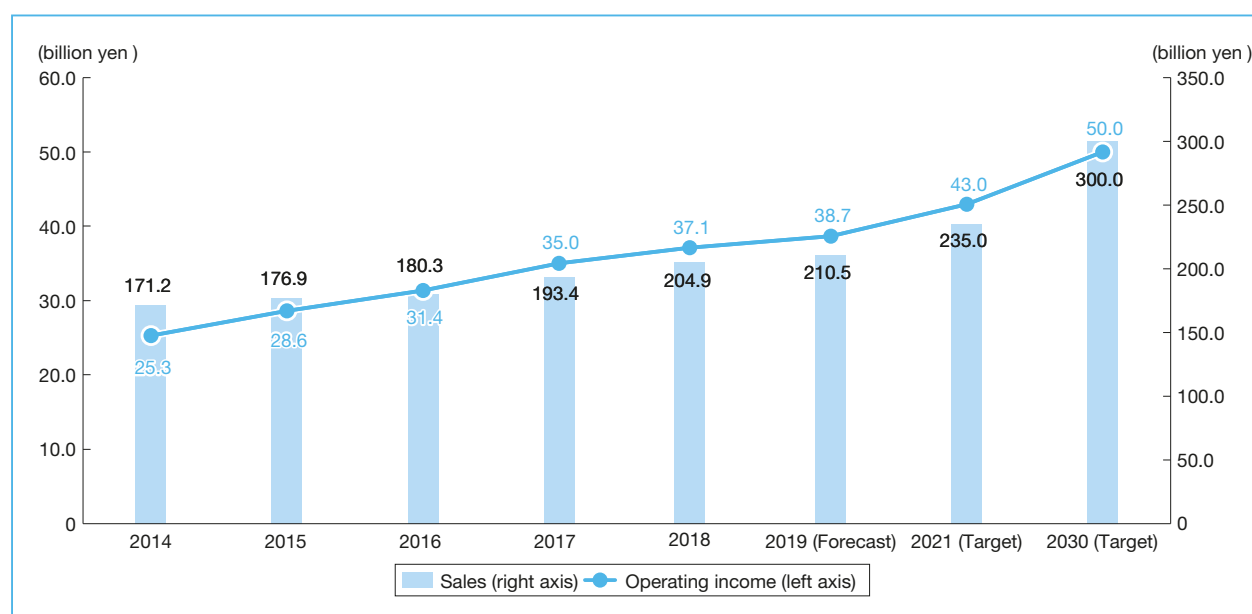
Based on that, we set the business model for the Company as “A future-creating enterprise that responds to social needs with unique, innovative technologies”, and defined corporate vision for 2030 as “A corporate group which provides new values for helping to enrich people’s lives by integrating internal and external knowledge with facing globally-changing society” as well as “A group of first-class

pioneers who blaze a way to the future with enthusiasm by trusts they have built and skills they have cultivated”.

For 2030, we set numerical targets of 300 billion yen in sales and 50 billion yen in operating income. Based on our five core technologies we have cultivated, “Fine Organic Synthesis”, “Functional Polymer Design”, “Ultrafine Particle Control”, “Biological Evaluation”, and “Optical Control”, we will contribute to resolving global issues in the four fields of “Information & Communication”, “Life Sciences”, “Environment & Energy”, and “Chemicals & Affiliates”, and will strive to improve company value along with the development of society.

“Vista2021” has been formulated as a six-year mid-term business plan to serve as a waypoint to 2030 to indicate how the Company should be in 2021 by using the back casting method (establishment of current policies by calculating backward based on the company’s future status). Stage I, the first three years are based on the following three basic strategies.

With regard to the first basic strategy “Maximizing the profit from existing products”, we have achieved results including





an increase in demand for products such as Fluralaner, an active ingredient for veterinary pharmaceuticals invented by Nissan Chemical, Roundup® (nonselective herbicide), and so on. We also acquired new customers in China and Taiwan for our liquid crystal alignment material for IPS devices.

As for the second basic strategy “Improving marketing power”, we steadily proceeded with the collection and evaluation of cutting-edge technology information, sales, popularization, development support for agrochemicals, enhancement of research and development functions, and customer service improvement at newly established overseas bases in the United States, Brazil, India, and China.

In regards to the third basic strategy “Enhancing R&D capability”, we developed 3D packaging process materials, EUV under layer materials, etc. as performance materials, and created agrochemical development candidate agents. In the field of pharmaceuticals, we worked to establish our own technologies for drug discovery and contract based manufacture of active ingredients of pharmaceuticals such as constrained peptides and nucleic acids.

When formulating Stage II of the “Vista2021” mid-term business plan, we used the following three phrases to describe corporate expectations for 2021: “Performance Materials and Agricultural Chemicals are driving business results while the next growth engines are being created”, “Organizations that enjoy challenges have been realized and diverse human resources demonstrate their abilities to achieve goals”, and “We contribute to the sustainable development of society through our business activities”.

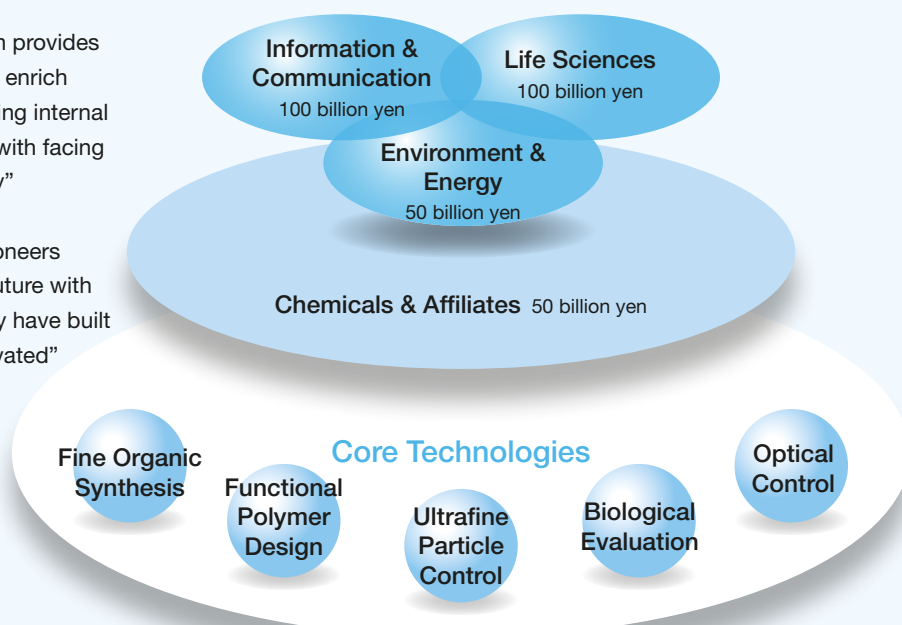
To realize these, we established the following three strategies as basic strategies: “Increase profitability of products that are the sources of growth”, “Strengthen the ability to create new products”, and “Improve ability to adapt to social/market changes”.

The numerical targets set for FY2021, the final year of Stage II, are sales of 235.0 billion yen, operating income of 43.0 billion yen, ordinary income of 44.0 billion yen, net income of 33.0 billion yen, and an operating margin of 18.3%. Through the mid-term business plan, we will strengthen our efforts using the full power of the Group to realize our corporate vision in 2030.

## Corporate Vision in 2030

“A corporate group which provides new values for helping to enrich people’s lives by integrating internal and external knowledge with facing globally-changing society”

“A group of first-class pioneers who blaze a way to the future with enthusiasm by trusts they have built and skills they have cultivated”



## Ideal Situation of 2021

“Performance Materials” and “Agricultural Chemicals” are driving business results while the next growth engines are being created

Organizations that enjoy challenges have been realized and diverse human resources demonstrate their abilities to achieve goals

We contribute to the sustainable development of society through our business activities

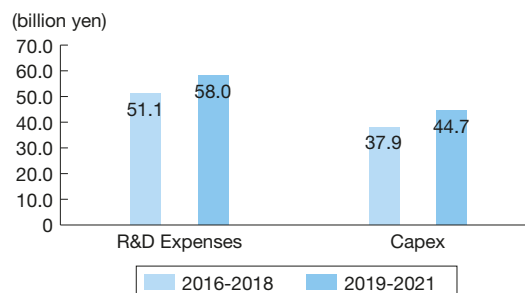
## Financial Indicators

	FY2018 Results	FY2019 Forecast	FY2021 Targets
Operating margin	18.1%	18.4%	Above 18%
ROE	16.6%	16.3%	Above 16%
Dividend payout ratio	41.5%	42.5%	Maintain 45%
Total payout ratio	72.0%	72.5%	Maintain 75%

Sales, Operating Income, Ordinary Income, Net Income Target (billion yen)

	FY2018 Results	FY2019 Forecast	FY2021 Targets
Sales	204.9	210.5	235.0
Operating income	37.1	38.7	43.0
Ordinary income	39.1	40.2	44.0
Net income	29.4	30.2	33.0

## R&D Expenses, Capex



## Toward Realizing Our Corporate Vision in 2030

Although there are challenges present, we will steadily evolve and deepen our efforts.

While implementing Stage I, we identified three challenges we face in realizing our corporate vision in 2030.

The basic strategies of the final three years as Stage II are based on our awareness of issues such as inclination toward certain products that drive profits, delays in the creation of new products, and insufficient response to risks that will hamper growth.

In the first basic strategy “Increase profitability of products that are the sources of growth”, we identify opportunities and risks for each business and establish accurate and timely countermeasures to deal with rapid changes in the environment, and intensively allocate management resources to products that are expected to grow.

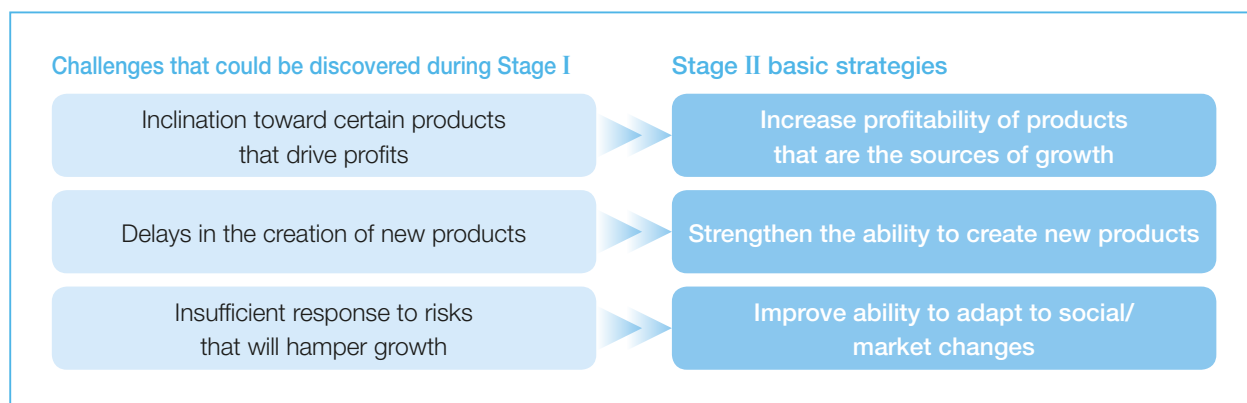
In the Chemicals Division, we will promote sales of cyanuric acid, HI-LITE® (bactericidal disinfectant), and TEPIC® (epoxy compound for LED sealants, solder resist, painting) based on a strong global market for cyanuric acid, increasing societal demand for water sanitation, and growing demand for products for information & communication field. Besides, we will strive to enhance plants maintenance technology and ensure safe and stable operations by preparing risks such as issues at plants.

In the Performance Materials Division, we will develop and launch new products, improve existing products and expand their application, toward the things such as increased demand for products due to the development

of the information & communication field, changes in the needs for oil and gas materials due to fluctuations in crude oil prices, and emergence of innovative competitive technologies from other companies those are assumed as either opportunities or risks.

As for the Agricultural Chemicals Division, the overseas agrochemicals market is expected to expand continuously due to global population growth. On the other hands, there is a shortage of farmers related to the population decline in Japan. The demands for agrochemicals which make it possible to improve yield is expected to increase. Based on such circumstances, we will speed up initiatives aimed at large-scale farmers, corporations and general consumers as we aim to popularize and promote domestic and overseas sales of products including GRACIA®.

In the Pharmaceuticals Division, business competition in the field is expected to intensify as a result of activation in the development of drug discovery research of medium molecule drugs and increase of generic drugs. We plan to accelerate the creation and advancement of candidate drugs, expand our contracted manufacturing business, and improve profitability. In addition to promoting sales of eldelcalcitol, an active drug substance used in medications for osteoporosis, the division is focusing its efforts on obtaining contracted manufacturing business orders for the manufacture of generic drugs and constrained peptides.



## Message from the President

By strengthening our research capabilities, we are striving to develop new products and technologies, and to create new businesses.

In order to “Strengthen the ability to create new products”, the second basic strategy, we aim to advance development, analysis, and evaluation capability by expanding our overseas research infrastructure related to overseas agrochemicals, display materials, and semiconductor materials, all of which are expected to see future growth.

We opened the Santa Clara Office of NCA (our local subsidiary in the United States) in Silicon Valley (California) in 2016 to pursue the search and evaluation of technologies, including AI, IoT, and etc., owned

by startups, and the possibility to collaborate with such companies. Furthermore, we established a new R&D center in Suzhou, China in 2018 in addition to launching R&D centers in Korea and Taiwan in previous years, to improve contact with customers and quickly grasp market needs.

Furthermore, we focus on establishing new technology and creating actual demand for material to generate new businesses, by participating in national projects and so on.

We identified materiality that we need to address as a company.

Through the third basic strategy, “Improve ability to adapt to social/market changes”, we identified materiality that are indispensable for realizing our corporate vision in 2030 while responding to various assumed social changes and issues that we have recognized. In the process to identify materiality, we exchanged opinions with stakeholders based on ESG



(environment, social, and governance) evaluation indicators, including SDGs, and various guidelines.

We identified 19 key issues that are divided into three parts: “provision of new value for helping to enrich people’s lives”, “strengthening of Nissan Group’s business base”, and “continuous improvement of responsible care activities” with underlying the crucial issues for corporate survival that are “strengthening of corporate governance, risk management and compliance”, and established targets for each issue.

In regard to the first part, “provision of new value for helping to enrich people’s lives”, we aim to provide new value while utilizing our unique technologies by identifying social issues such as global environmental conservation, food issues, energy issues as well as changes in society, including longevity and aging, and development of advanced medical care.

The targets are sales promotion of disinfectants for drinking water, launching of new medical materials, new environmentally friendly products, and optical interconnect material.

Steadily implementing the various measures of the long and mid-term business plan will lead to the provision of new “value” that will help enrich people’s lives.

The “value” that we provide must be in the form of products and services that can give unprecedented level of “joy” and “inspiration” to the end user.



Through our daily business activities, we will create new products and, by doing so, provide new “value.” There will always be newness present in this “value” which makes it necessary to have a group and corporate culture that always thinks about what kind of “joy” can be created by this newness or whether it can provide “inspiration.”

The second part, “strengthening of Nissan Group’s business base”, includes strengthening our research and development capabilities, products’ quality improvement, maintaining and improving employee health, promoting diversity, executing fair-trading, and BCP (Business Continuity Plan) formulation.

For the third part, “continuous improvement of responsible care activities”, we have set targets related to climate change mitigation, occupational safety and health promotion, biodiversity initiatives, chemical substances management, and industrial waste/pollutant emission reduction.

## Closing

The Nissan Chemical Group has earned a high reputation from the market for its stable business performance with ROE over 16%, active shareholder returns maintaining total payout ratio over 70%, business plan achievement rate, etc. In order to become a more reliable company without compromising to current situation, we will focus our management resources on the full-scale entry into fields such as the automotive and regenerative medicine fields where demand is expected to grow. We will grow under any business conditions and continue to strive to create value for leaping forward into the future.

With this idea, the slogan for Stage II is “Strive for perpetual growth and become a company that carves out the future.”

In order to rise from “sustained” growth to “perpetual” growth, we will share with the entire Group the idea that the development of new businesses with a futuristic perspective while continuing to introduce new products and new product grades to the market is the most important issue. We will strive to meet the expectations of our stakeholders by working together throughout the Group to realize our Corporate Vision of becoming “A corporate group that contributes to human survival and development.”

I hope we can rely on your understanding and support in the future.

In regard to climate change countermeasures, we have been working on improving energy intensity and reducing greenhouse gas emissions by implementing construction required to convert fuel from naphtha to LNG (liquefied natural gas) in ammonia production at the Toyama Plant. Since Vista2021 original targets that was set in 2016 were reached during Stage I, Stage II targets have been set even higher.

Recognizing that occupational safety and health is the lifeline of our corporate activities, not only plants but the Group as a whole will continue to increase the number of daily safety actions aimed at achieving zero accidents requiring staff time off from work.

We will contribute to the sustainable development of society by achieving the targets corresponding to each key issue for FY2021.



# The History of Nissan Chemical

1887 -

Founded under the founding spirit "to dedicate ourselves to prosperity of the nation by agricultural fertility" aiming to solve food issues.

Dr. Jokichi Takamine is referred to as the "Father of Biotechnology." Tokyo Jinzo Hiryo, Nissan Chemical's predecessor organization, was started in 1885 when the young Jokichi Takamine brought phosphoric ore from the US back to Japan. Takamine, who strongly felt the need to improve the fertilizer used in Japanese agriculture to help make Japan a modern nation, approached Eiichi Shibusawa, known as the "Father of Japanese Capitalism," the following year with the idea of the commercialization of fertilizer. Eiichi Shibusawa, who was from a wealthy farming family, deeply agreed with Takamine's proposal, and as a result established Japan's first chemical fertilizer company in 1887 becoming chairman (president) himself. With the Company policy "to dedicate ourselves to prosperity of the nation by agricultural fertility," Japan's food production skyrocketed due to the enthusiasm and effort of the pioneers who led the Company in its early days.



1891 Jinzo Hiryo advertisement from an agricultural magazine



Calligraphy by Takashi Masuda (first president of Mitsui & Co., Ltd) who served as an executive for Jinzo Hiryo, a position that his eldest son Taro would also hold.

1923 -

Merging of three companies for business diversification

In the first half of the twentieth century, amid a variety of M&A activities by domestic corporates, we came to turning points with the three companies joint in 1923 and with the participation to Nissan zaibatsu in 1937.

The three companies joint was a merger of Kanto Soda, Nippon Kagaku Hiryo (renamed from Nippon Seimi Seizo) and Dainippon Jinzo Hiryo (surviving company).

The Company had been promoting business diversification and entered under the umbrella of Nissan zaibatsu in 1937, which was the 50th anniversary of its foundation, renamed Nissan Chemical Industries. After World War II, under the separation directive based on the Corporate Reconstruction and Improvement Law, the fat and oil section was separated into Nippon Oil and Fats (now NOF) in 1949 and Nissan Chemical Industries newly started.



Eiichi Shibusawa (second from left) visiting Oji Plant just after the completion of the three-company merger. Seen on the left is Eiichiro Tanaka who served as company president from 1923 to 1941.



The land in Ojima 1-chome, Koto-ku, Tokyo, now known as Kamayabori, had been selected for its convenience in transporting raw materials and products. In 1888, the production of superphosphate (fertilizer) started.

(million yen)

200,000

150,000

100,000

50,000

0  
1886

1896

1906

1916

1926

1936

1946

■ Sales (left axis) ● Operating margin (right axis)

Worsening pollution issues

Post-war recovery

Food shortages in Japan

● The graph below shows changes in sales and operating margins for the Nissan Chemical on a non-consolidated basis from 1950 to 1976 and for the Nissan Chemical Group on a consolidated basis from 1977 to 2018.  
 ● The figures for November and the following May or October and the following April are totaled so that the figures for the year are close to the March results.

1965 -

Acquisition of new technological ideas through entry into the petrochemical business

In the 1950s, as domestic imports of petrochemical products expanded and the momentum for domestic production increased, we established Nissan Petrochemicals in 1965 and entered the petrochemical business, starting with the production of higher alcohol. However, the petrochemical industry experienced a structural slump due to the impact of the two oil crises of the 1970s. The Company worked to rebuild its business, but it was unable to improve its profitability and began rationalization. The company exited the petrochemical business in 1988.

Although entry into the petrochemical business resulted in a large deficit, the development of this business brought the penetration of technological ideas to the Company, which led to the development of new technologies and businesses such as fine chemicals.

1989 -

Becoming a future-creating enterprise that responds to social needs

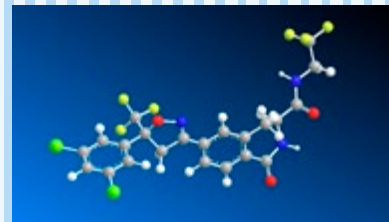
In 1989, we launched our Five-Year mid-term business plan oriented with two pillars: high-tech fields such as agrochemicals and pharmaceuticals, and traditional technology fields such as functional products and chemicals. The results of continued R&D investment in this difficult situation emerged. By the early 1990s, we released a large number of agrochemicals on the market, and in the late 1990s, while our liquid crystal alignment material grew significantly, we entered the semiconductor field. In the 2000s, sales of Pitavastatin calcium, the active ingredient of LIVALO®, an anti-cholesterol agent, increased significantly and we acquired exclusive marketing rights in Japan to ROUNDUP®, the world's largest herbicide. Since then, new agrochemicals have been introduced, and in 2013, we began the shipment of fluralaner, an active ingredient for veterinary pharmaceutical, which is one of the main products at present. In 2018, the Company had already been transcending the framework of industry in the development of its business and will accelerate this effort toward the future. In order to clarify this stance, we changed our name to Nissan Chemical Corporation.



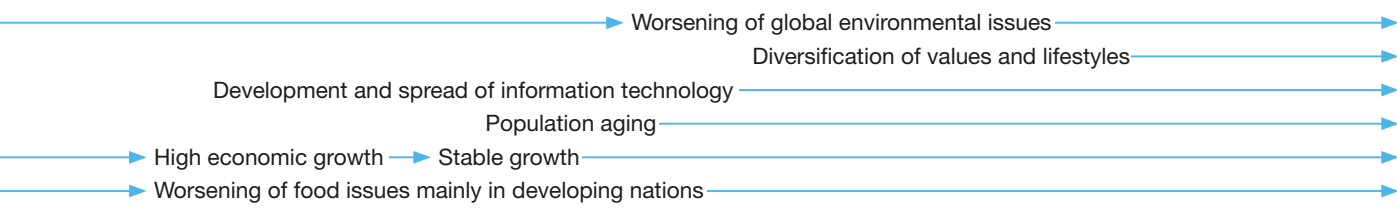
Nissan Petrochemicals Chiba Plant (1968)



Toyama Plant



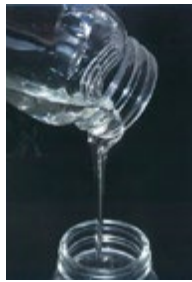




Fluralaner



# Main Products

Before 2000

2000 -

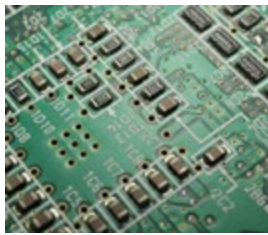
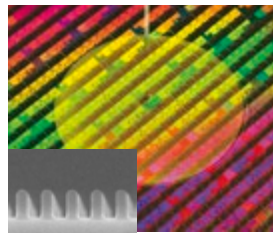
<p><b>Chemicals</b></p>	<p><b>1964 Melamine</b> This is widely used as an adhesive agent for plywood, laminated sheets, molded products, resin finish for fabric and paper, and paint. It is highly aesthetic and offers a substantial level of quality. As a pioneer of its own high-pressure process, Nissan Chemical supplies products both domestically and internationally.</p>	<p><b>1965 HI-LITE®</b> Chlorinated isocyanurate is the main ingredient in this product, which is used for sterilization and disinfection of swimming pools and water purification tanks, and thus contributing to public hygiene.</p>	<p><b>1978 TEPIC®</b> TEPIC® is an epoxy compound which possesses excellent heat resistance, weather resistance, and transparency. It is widely used in semiconductors, LEDs, and substrate-related electronic materials as well as in powder coating curing agents.</p>	
<p><b>Performance Materials</b></p>	<p><b>1951 SNOWTEX®</b> SNOWTEX® is a colloidal solution in which ultrafine particles of silicic acid anhydride are dispersed in water using water as a dispersion medium. Utilizing various functions, it is used for a wide range of products such as batteries, coating materials for optical films, electronic substrate materials, and abrasives for manufacturing electronic recording media.</p>	<p><b>1989 SUNEVER®</b> SUNEVER® is a polyimide-based liquid crystal alignment material. It is used to coat the surface of the outer glass panels, to align liquid crystal molecules in a certain direction.</p>		<p><b>1998 ARC®</b> ARC® is an anti-reflective coating developed for semiconductor lithography. It is used to coat the part under the photoresist, to resolve a number of issues with lithographic exposure such as reflection from varying substrate levels. This makes it possible to significantly reduce the device failure rate.</p>
<p><b>Agricultural Chemicals</b></p>	<p><b>1989 SIRIUS®</b> To meet the needs of farmers, we develop and sell a large number of one-shot herbicides for paddy rice. The main component of these herbicides is SIRIUS®, our proprietary active ingredient.</p>	<p><b>1991 SANMITE®</b> This insecticide / acaricide is effective against spider mites and rust mites in fruit trees, as well as spider mites and whiteflies in vegetables. We also market this product in about 30 overseas countries.</p>	<p><b>1994 PERMIT®</b> We market PERMIT®, our proprietary active ingredient which is particularly effective against cyperaceous weeds, in Japan under the trade names of HICUT®, which is a herbicide for paddy rice in the mid to late term that is highly effective against the pesky weed Eleocharis kuroguwai, and INPOOL® for lawns.</p>	<p><b>2002 ROUNDUP®</b> We acquired business rights in Japan for ROUNDUP®, an herbicide used all over the world which has low toxicity to humans and animals and does not remain in the soil or in the environment.</p> 
<p><b>Pharmaceuticals</b></p>	<p><b>1994 LANDEL®</b> LANDEL® is a calcium antagonist which has shown to have a positive effect on hypertension and angina pectoris.</p>			



2010 -

**2005 AdBlue®**

AdBlue® is a high-grade urea solution used in “urea SCR system”, a technology for purifying emissions. When sprayed onto emissions from diesel vehicles, it breaks down nitrogen oxide (NO<sub>x</sub>) into harmless nitrogen and water, which helps to reduce environmental impact.



**2008 LEIMAY®**

LEIMAY® is a fungicide that works in a specific way on diseases caused by oomycetes and myxomycetes used as an atomizing agent for potatoes, grapes, and vegetables.

**2013 ALTAIR®**

ALTAIR® is a wide-spectrum herbicide that is highly effective in eliminating bulrush and cyperaceous perennial weeds. It is also effective for weeds that are resistant to conventional sulfonylurea-based herbicides. We market this product in Japan, South Korea, and China.



**2013 Fluralaner**

Fluralaner is a compound invented by Nissan Chemical Corporation used as an active ingredient in the veterinary pharmaceutical “BRAVECTO®” developed by MSD Animal Health (MAH). It is manufactured by Nissan Chemical Corporation, and supplied to MAH as a veterinary pharmaceutical substance. Fluralaner has remarkable characteristics: it acts rapidly against major species of fleas and ticks and has a longer insecticidal effect than existing products as its effects remains even when highly diluted.

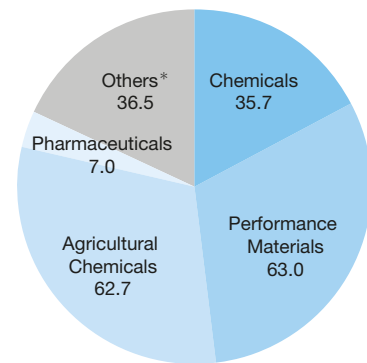


**2003 LIVALO®**

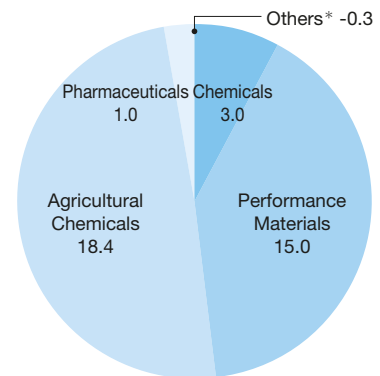
This is a statin agent that greatly reduces LDL cholesterol and causes fewer drug-interactions, offering the advantage of safety.

**FY2018**

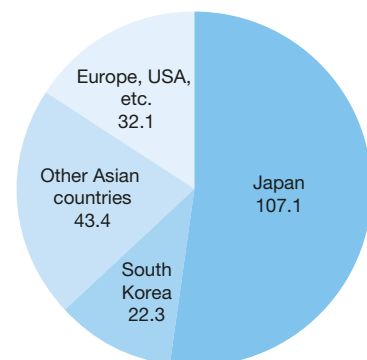
Sales according to segment (billion yen)



Operating income according to segment (billion yen)



Sales according to region (billion yen)

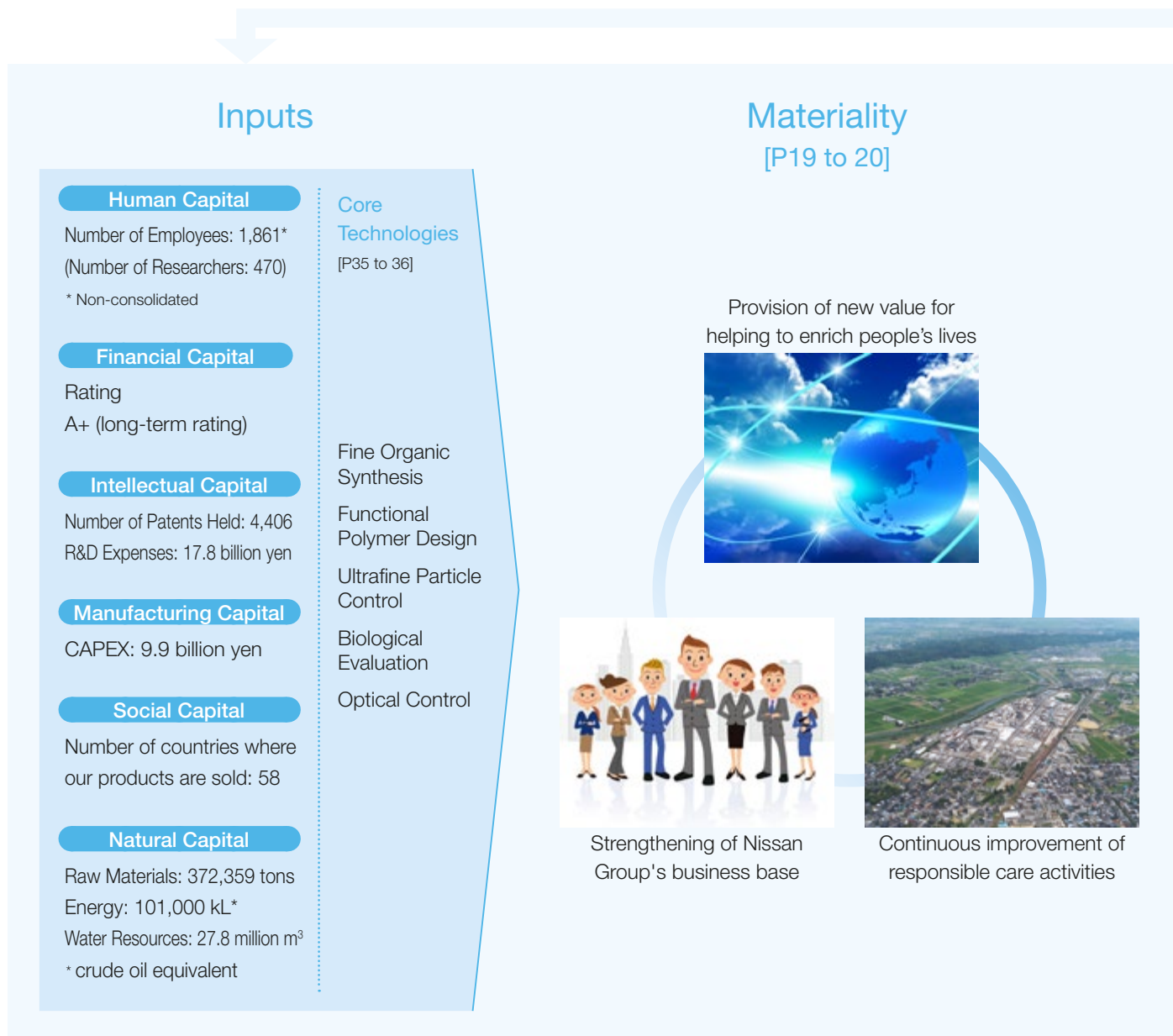


\* Others: trading, others and adjustment

# Process of Value Creation

Nissan Chemical Group is developing its business activities in four business domains based on the five core technologies those have been cultivated over the years.

We aim to achieve sustainable growth together with society by making effort at the materiality identified by recognizing various social issues and changes.




## Social Issues and Changes

- Advanced climate change
- Global crisis
- Worsening health issues
- Diversification of risk factors
- Increase of requests for consideration of health and safety in the work environment
- Advent of a smart society

**Business Domains**      **Outputs**  
[P25 to 34]

**Information & Communication**

- Display Materials
- Semiconductor Materials
- Optical Interconnect Materials



**Life Sciences**

- Agrochemicals
- Pharmaceuticals
- Veterinary Pharmaceuticals
- Biomedical Materials



**Environment & Energy**

- Oilfield Materials
- Secondary Battery Materials



**Chemicals & Affiliates**

- Basic Chemicals
- Fine Chemicals



**Outcomes**  
[P23 to 24]

Resolution of Social Issues



Improvement of Company Value



**Corporate Vision in 2030**  
[P5 to 12]

**“A corporate group which provides new values for helping to enrich people’s lives by integrating internal and external knowledge with facing globally-changing society”**

**“A group of first-class pioneers who blaze a way to the future with enthusiasm by trusts they have built and skills they have cultivated”**

- Intensification of inter-corporate competitions
- Changes in lifestyle
- Increase of requests for CSR considerations in the Supply Chain
- Exacerbation of the food issues
- Labor shortage
- Increase of interest in corporate governance reform
- Increase of requests for information disclosure

## Materiality

Our group has identified the materiality needed to realize the corporate vision in 2030 as “A corporate group which provides new values for helping to enrich people’s lives by integrating internal and external knowledge with facing

globally-changing society”, and “A group of first-class pioneers who blaze a way to the future with enthusiasm by trusts they have built and skills they have cultivated”.

### Materiality Identification Process

#### Gain Understanding About Social Issues and Social Changes



Based on our group’s long- and mid-term business plans, we clarified more than 500 keywords for social issues and social changes, referring to SDGs and ESG-related metrics and guidelines.

#### Keyword Collection



Keywords related to social issues and social change were classified by theme and collected to form 29 materiality factors.

#### Management of Impact on Our Group



In regards to the 29 materiality factors, we clarified the social issues and changes that are expected from now to 2030 and then made arrangements to manage the impact on the Group.

#### Importance Evaluation



We conducted an evaluation regarding the importance of materiality factors from two perspectives, that of our company and that of our stakeholders, based on the Group impact.

#### Opinion Exchange with Experts



We exchanged opinions about materiality factors with experts that possess a high degree of knowledge in various fields and also took the opinions of stakeholders into account.

#### Materiality Matrix Formulation



After numerous in-house discussions, we formulated a materiality matrix based on the opinions of stakeholders.




#### Materiality Identification (through resolution by the Board of Directors)

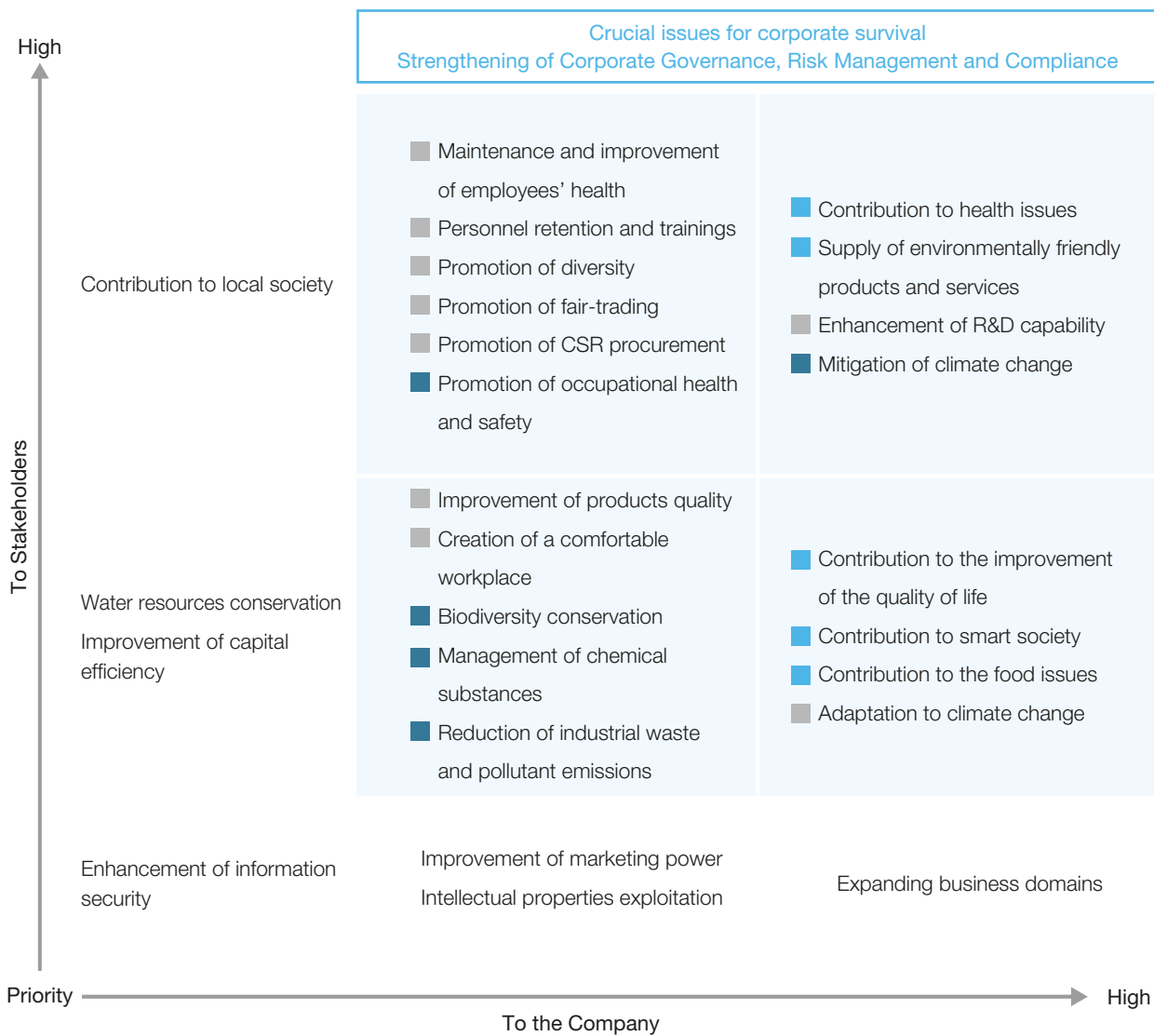


Total of 19 materialities was identified after discussions held by the CSR Committee based on the materiality matrix. The results of the meeting were then resolved by the Board of Directors.



























## Materiality Matrix

 Provision of new value for helping to enrich people's lives	We aim to provide new value for helping to enrich people's lives through four businesses based on five core technologies.
 Strengthening of Nissan Group's business base	We aim to strengthen our business base to improve our ability to respond to increasingly diverse and sophisticated marketing needs.
 Continuous improvement of responsible care activities	We aim to enhance the maintenance of environment, health, and safety through the operation of the Nissan Chemical Responsible Care Management System.



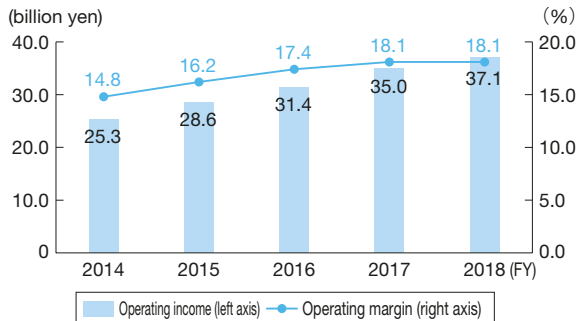
## Materiality and KPI

Materiality	Factor	Our Initiative
<b>Provision of new value for helping to enrich people's lives</b> 	Contribution to health issues	Creation of pharmaceuticals that meet medical needs and biomedical materials that contribute to advanced medical care
	Supply of environmentally friendly products and services	Sales of high-grade urea solution for exhaust gas purification of diesel vehicles Development of energy harvesting materials that contribute to the utilization of unused energy
	Contribution to the improvement of the quality of life	Research and supply of veterinary pharmaceuticals for companion animals and sales of disinfectants for drinking-water
	Contribution to smart society	Development of sensor materials required for IoT and wiring materials that contribute to higher capacities and speeds of data communications
	Contribution to the food issues	Supply of agrochemicals to increase crop yields and conserve agricultural labor, and the expansion of veterinary pharmaceuticals to livestock
<b>Strengthening of Nissan Group's business base</b> 	Enhancement of R&D capability	Deepening core technologies, promotion of open innovation, and introduction of new technologies such as AI
	Improvement of products quality	Continuous improvement of management systems and operations based on quality policy
	Maintenance and improvement of employees' health	Review of health promotion measures by the health promotion committee and mental health checkups
	Creation of a comfortable workplace	Promotion of work-life balance, measures against harassment, and support for childcare and family care
	Personnel retention and trainings	Provision of educations and capability trainings, and introduction of overseas study program
	Promotion of diversity	Promotion of active participation of women, hiring foreign students and people with disabilities
	Promotion of fair-trading	Implementation of internal training on the "Act against Delay in Payment of Subcontract Proceeds, etc. to Subcontractors" and the insider trading regulations
	Promotion of CSR procurement	Conduct of assessment and audits of suppliers on CSR
<b>Continuous improvement of responsible care activities</b> 	Mitigation of climate change	Energy saving through equipment improvement and fuel conversion that leads to GHG (Green House Gas) emissions reduction
	Promotion of occupational health and safety	Establishment of an occupational safety management system and execution of capital investment in safety
	Biodiversity conservation	Operation of Bio-Park and support for the NPO "Kurohama-numa Shuhen no Shizen wo Taisetsu ni Suru Kai"
	Management of chemical substances	Minimization of negative impacts on human health and the environment throughout the life cycle of chemical products
	Reduction of industrial waste and pollutant emissions	Reduction of the amount of waste for final disposal volume by reusing and recycling waste and changing intermediate process methods

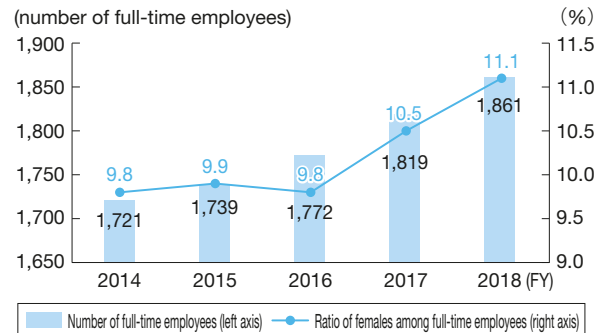
FY2021 Targets (KPI)	Results for FY2018	Relevant SDGs
License out candidates of drug agents Launch of new medical materials	—	 
Launch of new environmentally friendly products	—	 
Number of people positively impacted by the sale of disinfectants for drinking water: 2.5 million per year	900,000 per year	 
Launch of optical interconnect materials with higher capacities and speeds of data communications Achieve 10% higher sales than in FY2018 by the Agricultural Chemicals Division	— FY2018 sales: 62.7 billion yen	 
Reach 1,350 patent applications in three years by FY2021	454 patent applications	
Achieve 80% outsourcer audit rate in three years by FY2021	25.6% audited	 
Continue to acquire White 500 certification	Acquired White 500 certification for two consecutive years from 2017	 
Achieve ratio of taking annual leave of 80% or higher	75.8%	 
Achieve 10% more job training time per employee than in FY2017	11 hours (same for FY2017)	 
Achieve proportion of women among employees in the regular position of 10%	8.9%	 
Hold consultation meetings with Legal Office throughout the Group by FY2021	5%	
Achieve CSR questionnaire survey coverage of 90% (in terms of monetary amount)	57%	
Formulate of BCP where products account for 50% of ordinary income	Review of target products for BCP formulation and implementation planning	
20% improvement in GHG emission rate and 20% improvement in energy consumption rate compared to FY2013	GHG emission rate: Improved by 20% from FY2013 level Energy consumption rate: Improved by 17% from FY2013 level	 
Achieve zero accident requiring staff time off from work	Achieving zero accident requiring staff time off from work	 
Achieve 100% initiative for prefectures in which our Head Office, plants, and laboratories are located	67%	
Create safety summaries of chemical substances of products that account for 90% of our total production	67%	
99.5% or more recycling rate Achieve 75% improvement in exhaust gas (SOx + NOx) emissions compared to FY2013	Recycling rate was 97.7%. Exhaust gas (SOx+NOx) emissions: Improved by 55% from FY2013 level	

# Financial and Non-Financial Highlights

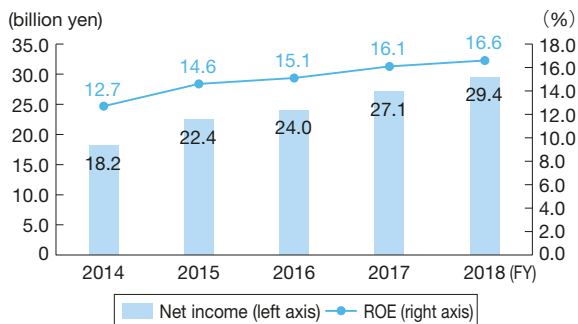
## Operating income/Operating margin



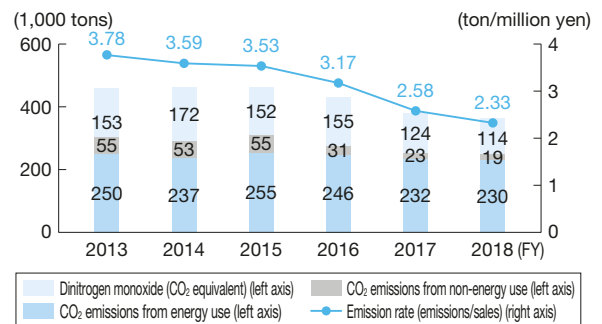
## Number of full-time employees/Ratio of females among full-time employees



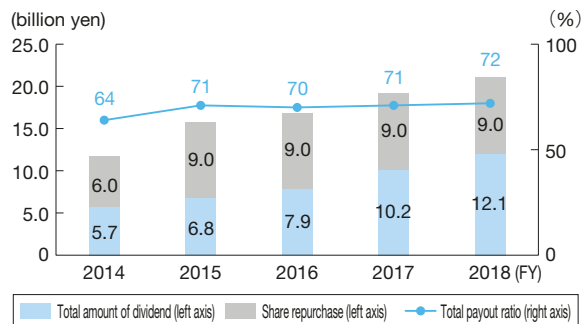
## Net income attributable to owners of parent/ROE



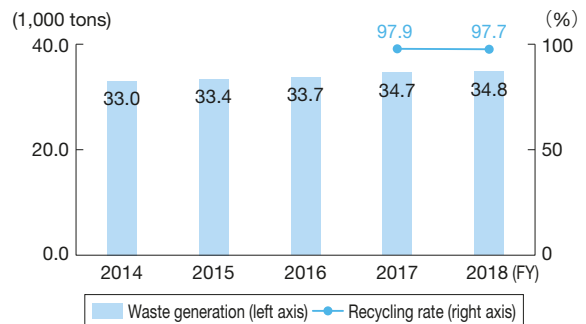
## GHG emissions/GHG emission rate (emissions/sales)



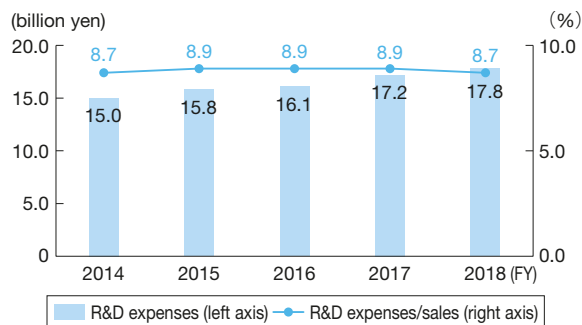
## Total amount of dividend/Share repurchase/Total payout ratio



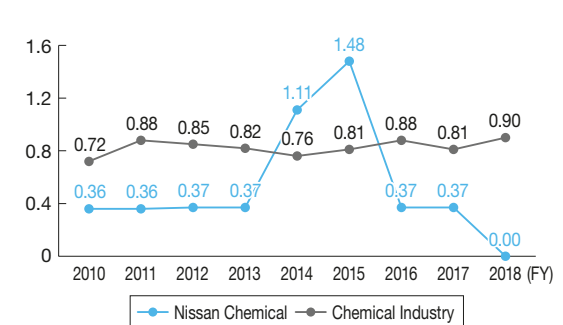
## Waste generation/Recycling rate



## R&D expenses/Percentage of sales



## Lost-time injury frequency rate





## Financial Data (consolidated)

	Unit	2014	2015	2016	2017	2018
Sales	Billion yen	171.2	176.9	180.3	193.4	204.9
Operating income	Billion yen	25.3	28.6	31.4	35.0	37.1
Ordinary income	Billion yen	26.4	29.5	31.7	36.2	39.1
Net income attributable to owners of parent	Billion yen	18.2	22.4	24.0	27.1	29.4
EBITDA <sup>*1</sup>	Billion yen	33.8	38.3	40.3	45.5	48.0
EPS <sup>*2</sup>	Yen/Share	113.99	143.37	156.97	180.30	197.67
Dividend	Yen/Share	36	44	52	68	82
Dividend payout ratio	%	31.6	30.7	33.1	37.7	41.5
Total payout ratio	%	64	71	70	71	72
Total assets	Billion yen	223.9	228.2	231.7	246.0	247.0
Net assets	Billion yen	151.3	156.9	163.7	176.4	182.1
Cash	Billion yen	31.3	35.3	35.7	37.7	36.2
Liabilities with interest	Billion yen	35.1	33.1	30.8	28.6	26.6
Equity ratio	%	66.9	68.1	69.9	71.0	73.0
Capex	Billion yen	9.8	10.2	14.3	13.7	9.9
Depreciation	Billion yen	8.5	9.7	8.9	10.5	10.9
R&D Expenses	Billion yen	15.0	15.8	16.1	17.2	17.8
R&D expenses/sales	%	8.7	8.9	8.9	8.9	8.7

\*1: Operating income + depreciation \*2: Net income attributable to owners of parent/issued shares

## Non-Financial Data (non-consolidated)

		Unit	2014	2015	2016	2017	2018	
Full-time employees	Overall	Male	People	1,553	1,567	1,599	1,628	1,654
		Female	People	168	172	173	191	207
		Percentage of females	%	9.8	9.9	9.8	10.5	11.1
Temporary employees	Male	People	18	20	19	25	22	
	Female	People	91	96	100	103	104	
Ratio of employees with disabilities <sup>*1</sup>		%	2.22	2.35	2.15	2.23	2.21	
Ratio of re-employment of retired employees		%	66	97	89	75	90	
Ratio of taking annual leave		%	73.4	77.4	77.2	77.6	75.8	
Employees who started childcare leave <sup>*2</sup>	Male	People	1	2	0	0	3	
	Female	People	6	8	11	8	9	
Energy consumption		1,000 kL	91.9	98.8	99.4	97.5	101.0	
Greenhouse gas emissions		1,000 tons	462	462	432	380	363	
Final disposal volume of waste		1,000 tons	2.3	2.2	1.1	0.8	0.9	
Lost-time injury frequency rate (full-time employees) <sup>*3</sup>		*3	1.11	1.48	0.37	0.37	0.00	

\*1: Percentage value as of June 1 of each fiscal year \*2: Does not include those who take time off in the previous year

\*3: Number of deaths and injuries due to occupational accidents per million actual working hours

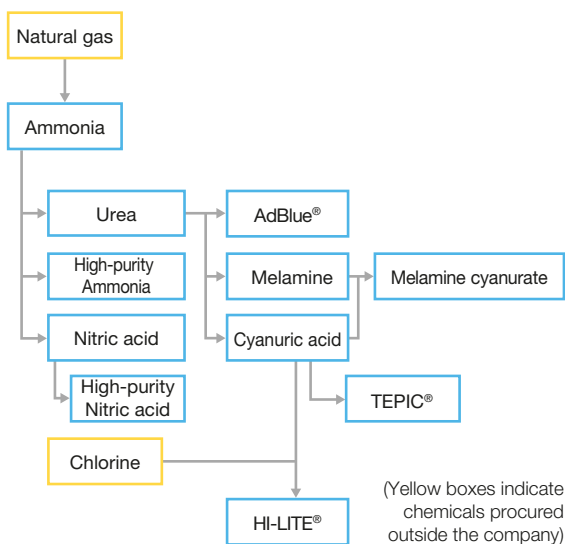
# Chemicals

We contribute to the realization of a prosperous and safe society by providing materials used in a wide range of fields, from basic chemicals to cyanuric acid based high-performance materials.

Our Chemicals business was started with the manufacture of sulfuric acid and ammonia, materials for fertilizer. In addition to industrial use, we currently provide high purity chemicals for electronic component manufacturing applications and proprietary cyanuric acid derivatives for use in a wide range of fields.

In addition, we established a manufacturing and supply system for our high-grade urea solution AdBlue®\* that decomposes nitrogen oxide contained in exhaust gas from diesel vehicles, which is considered to be the cause of air pollution, into nitrogen and water, thereby reducing environmental impact.

\* AdBlue® is a registered trademark of the Verband der Automobilindustrie.



## Fine Chemicals

Main products in this category consist of environmental chemicals, such as HI-LITE®, used for sterilization and disinfection of swimming pools and water purification tanks, and Venus® Oilclean, a microorganism formulation that decomposes oils and fats in wastewater from food factories, as well as the high-performance chemicals TEPIC®, derived from cyanuric acid that contains triazine ring, and melamine cyanurate (MC). These products are used for special applications. In addition to being used as a curative agent for coating powders, TEPIC® is seeing an increase in demand for use as an electronic material, for solder resist, LED sealants, etc. MC is used as a non-halogen flame retardant or an auxiliary flame retardant for various engineering plastics.

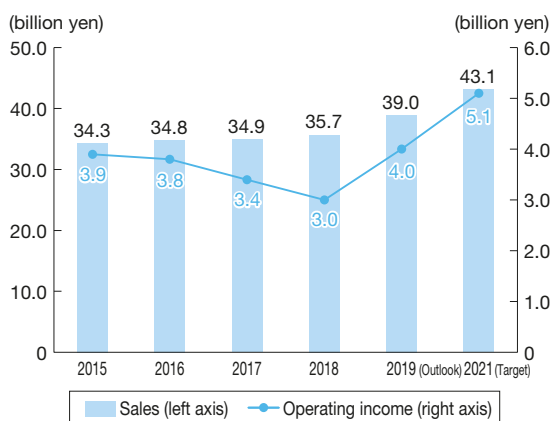
We are promoting research and development of proprietary cyanuric acid derivatives so that they can be used in a wider range of fields.

## Basic Chemicals

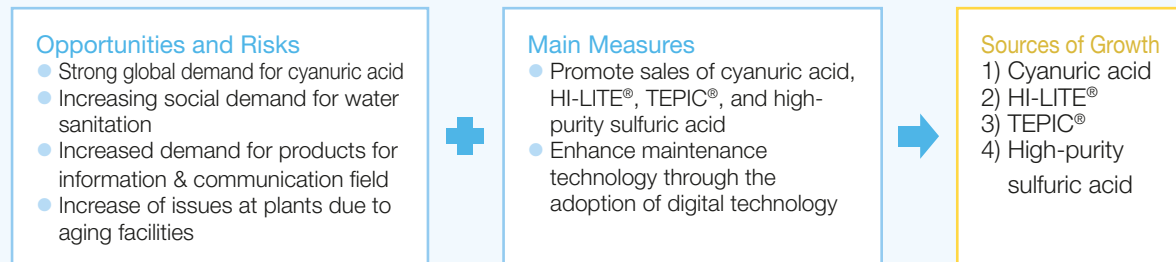
We provide industrial chemicals such as melamine, sulfuric acid, nitric acid, and ammonia as well as basic chemicals, including our higher alcohol product FINEOXOCOL®, to a variety of industries. Nissan Chemical is proud of having the highest sales volumes for melamine not only in Japan but also overseas. Just as with our industrial chemicals, we are further improving the efficiency of our production system in order to create a stronger business structure to protect against external factors such as a rise in fuel prices.

We are also working on producing and supplying products to support cutting-edge fields, and introduce products to the market such as high-purity sulfuric acid, nitric acid, and ammonia from which impurities are removed as much as possible.

## Business Results and Outlook



## Environmental Awareness and Stage II Business Strategies



- 1) We joined the United Nations Global Compact (UNGC) in April 2018 and have started initiatives for achieving sustainable development goals (SDGs) which focus on social and environmental issues that need to be solved by 2030. The Goal 6 “Clean Water and Sanitation” is still an important issue. We believe that the scenarios in which our environmental chemicals such as cyanuric acid and HI-LITE® can help with this issue will become increasingly widespread.
- 2) We have started exporting some grades of HI-LITE® since they have been certified as materials for disinfectants for drinking water in areas where hygiene management is insufficient, such as in developing countries. Preparations are being made so that we will be able to respond to expanding demand.
- 3) Our product TEPIC® has earned the trust of users and has become an indispensable product for many applications. We expect that demand for TEPIC® will continue to grow in various fields, including the information & communication field.
- 4) Demand for high-purity sulfuric acid is expected to grow in the information & communication field. As demand grows, we will continue to maintain high quality and high availability.

## Efforts Started After Stage II Initiation

The Chemicals business is susceptible to the effects of fuel prices, supply demand balance, and market conditions. Therefore, we will continue to strive to secure stable earnings while flexibly reviewing business strategies in response to environmental changes.

We are also focusing on the development and deployment of new products, mainly cyanuric acid derivatives, as a source of sustainable business growth, which have already been evaluated by many users for various applications.

- **New grades of TEPIC®**  
TEPIC-PAS: liquid product  
TEPIC-VL: photo-curing product
- **Starfine® (zinc cyanurate)**  
Adhesion improvement agent to metals  
→Additive for paints and adhesives
- **Venus® Oilclean (microorganism formulation that decomposes oils and fats)**  
Decomposes oils and fats in wastewater from food factories and etc.

# Performance Materials

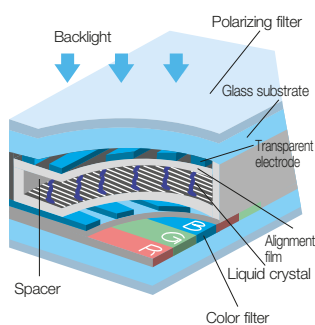
We will contribute to the realization of a smart society by promoting profitability of display, semiconductor, and inorganic materials and further expanding business size through new product development.

With the expansion of the information & communication field, our current society is transforming into a smart society where diverse systems interact to provide advanced services to everyone.

We provide high-value-added products to the rapidly changing ICT industry through the three pillars of this business division: Display Materials, Semiconductor Materials, and Inorganic Materials.

## Display Materials

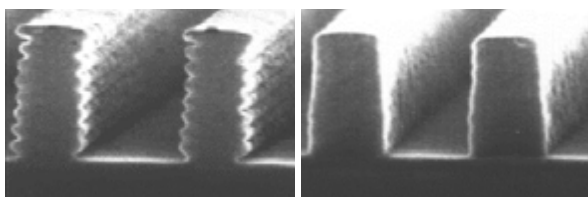
SUNEVER<sup>®</sup>, a coating material to align liquid crystal molecules in a certain direction, serves as our primary display material. Since 1989 when this product was made available for sale, we have expanded our market share by increasing the functionality of alignment materials, even when the liquid crystal type used is changed from TN to STN or TFT. In addition, we started the sale of Rayalign<sup>®</sup>, an alignment material for liquid crystal IPS which incorporates photo alignment technology, in 2014. This product is currently used in many smartphones that offer a screen resolution greater than 400 ppi.



It is expected that product demand for Realign<sup>®</sup> will further increase in the future as tablet and monitor resolutions increase.

## Semiconductor Materials

We started the manufacture and sale of ARC<sup>®</sup>\* in 1998 based on a licensing agreement with US company,



without ARC<sup>®</sup>

with ARC<sup>®</sup>

Brewer Science Inc. ARC<sup>®</sup> is a coating material designed to prevent issues such as light reflection, interference from substrate, and coating failure during micro-fabrication of the photoresist through lithography process. During the 2000s, semiconductor circuit widths were further miniaturized along and, in response, improvements were made to related materials.

Therefore, we launched OptiStack<sup>®</sup>\* (multi layer process materials) in 2007 which greatly expanded our business.

Currently, in preparation for the expected demand for EUV (extreme ultraviolet) exposure technology (wavelength 13.5 nm, semiconductor circuit width 7 to 3 nm), we are developing EUV materials and also focusing on preparing materials for 3D packages preparing for the limits of optical shrink.

\* ARC<sup>®</sup> and OptiStack<sup>®</sup> are registered trademarks of Brewer Science, Inc.

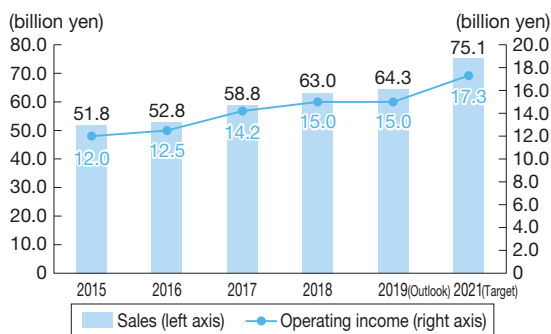
## Inorganic Materials

SNOWTEX<sup>®</sup>, a colloidal silica solution serving as a fiber processing agent, went on sale for the first time in 1951. Now we offer organosol (colloid solution with nano-sized silica particles dispersed stably in organic solvent) and monomer sol, a product that can be used without solvent. These products are indispensable materials used as abrasives for manufacturing electronic recording media and for other purposes. We are aiming to further expand product applications, including use as an agent to increase shale oil and gas extraction efficiency.



Shale oil extraction site

## Business Results and Outlook



## Environmental Awareness and Stage II Business Strategies

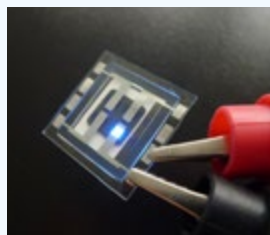


- 1) Currently, our liquid crystal alignment materials are mainly used in smartphones and tablets. In the future, however, we will use optical alignment technology that does not require rubbing and will also use it for TVs and other products with large displays.
- 2) Crude oil development is becoming more active in specific areas where superior shale oil wells are located and increasing shale oil production in those areas. However, it is said that extraction efficiency has been reduced due to the phenomenon that oil recovery amounts have generally decreased due to development in areas where wells are in close proximity. We aim to improve extraction efficiency by developing applications for use of our inorganic materials.

## Efforts Started After Stage II Initiation

### OLED materials

OLEDs are thinner and lighter than liquid crystals, offer high-speed response, and possess excellent design characteristics, such as flexibility. They are being used more often in smartphones, high-definition, large-screen TVs and other products. We are developing proprietary materials, including hard coat materials for surface protection, materials that enhance light extraction efficiency, anti-reflective coating alignment materials, and release layer materials, which contribute to improving the characteristics of smartphones. In addition, our company is also accelerating market development for ELsource<sup>®</sup>, a soluble hole injection material, NPAR<sup>®</sup>, a repellant bank layer material, and other materials which can contribute to reducing the cost of large TVs, production efficiency, and characteristics enhancement. We are also developing materials for next-generation self-luminous displays which will be the future display technology following OLEDs.



### Semiconductor Packaging Materials

Technologies related to high-speed, large-capacity telecommunication such as IoT, 5G, and sensors, are making rapid progress. For this reason, further miniaturization and higher integration in the formation of electronic circuits are occurring. However, we are coming close to physical theoretical limits for shrinkage of interconnect and integration, so it is expected that issues will be overcome through further evolution of semiconductor packaging technology. In addition to circuit miniaturization, we have focused early on technology for three-dimensional stacking of thinned semiconductor wafers. In 2013, we acquired all shares of German company, Thin Materials AG and incorporated their advanced processes necessary for semiconductor packaging and material development technology, making them our own technologies. We are also actively working on other next-generation semiconductor packaging technologies and development of markets related to sensors.



# Agricultural Chemicals

We contribute to a stable food supply through consistent business activities from the research for new agricultural chemicals to their development, manufacture, and sale, and expansion of a broad product lineup through the acquisition of agents from other companies and joint development of products.

Since the 20th century, the world's population has been increasing and is expected to increase from 7.4 billion (current population) to 9.6 billion in 2050. As a result, it is said that food production must be increased by about 60%, so how to increase crop yields on limited farmland is a major challenge for people's survival.

The Agricultural Chemicals Division aims to increase crop yields by selling a wide range of herbicides, insecticides, and fungicides both in Japan and overseas for use on major crops worldwide.

## Agrochemicals

Our agrochemical business was started in the 1910s when our predecessors Nippon Seimi Seizo and Kanto Soda began manufacturing and selling insecticides and fungicides. Initially, most of the active ingredients of our agrochemicals were introduced from other companies. However, starting with TARGA® (herbicide for grassy weeds) launched in 1984, we have continued to manufacture and sell products developed in-house such as SIRIUS® (herbicide for paddy rice), SANMITE® (insecticide/acaricide) and PERMIT® (herbicide for paddy rice and corn), which have steadily improved profitability.

Afterwards, we experienced hard times as a result of in-house development delays and intensifying competition created by domestic and foreign manufacturers. However, LEIMAY® (fungicide) was launched in 2008 followed by STARMITE® (acaricide) in 2009, marking our return to selling new products developed in-house.

In 2012, ALTAIR® (herbicide for paddy rice) was introduced to the market resulting in steady sales.

Additionally, we are actively



Active ingredient: PERMIT®



Active ingredient: Amisulbrom

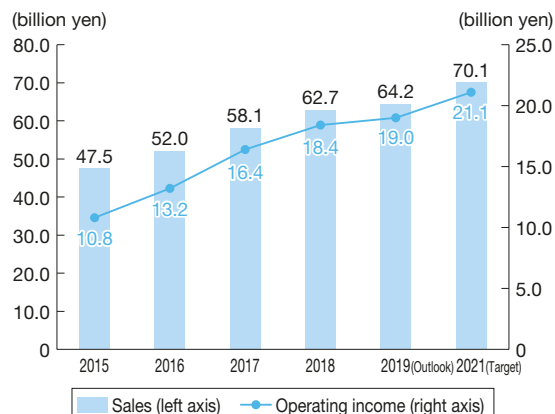
pursuing the acquisition of other agrochemicals. For example, in 2002 we acquired Monsanto's herbicide business in Japan and began selling ROUNDUP® and other products as our own products. In 2011, we developed ROUNDUP® MAXLOAD AL, a shower-type product that can be used as is aimed at households. In 2016, we started the sale of fast-acting "AL II" followed by "AL III", which is both fast-acting and persistent, in 2018, striving to provide products to address customer needs.

## Veterinary Pharmaceuticals

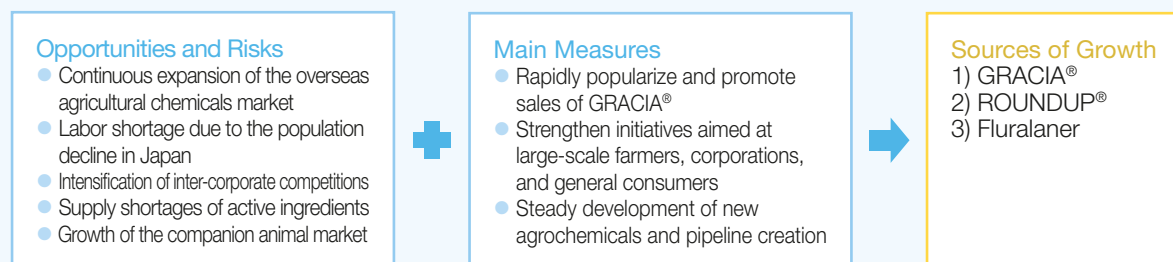
Through our development of agricultural pesticides, we have discovered compounds that are not only effective for use on agricultural crop pests, but also on fleas and ticks that are parasitic in dogs and cats, and have continued to study these compounds as veterinary pharmaceuticals. In 2008, we entered a licensing agreement with MSD Animal Health. Development of veterinary pharmaceuticals using Fluralaner, an active ingredient invented by our company, has advanced. Launched in Europe and the United States under the brand name BRAVECTO®\* in 2014, veterinary pharmaceuticals containing Fluralaner as an active ingredient are now used in more than 100 countries and are leading the growth of our Agricultural Chemicals Division.

\* BRAVECTO® is a registered trade mark of Intervet International B.V. and Intervet Inc.

## Business Results and Outlook



## Environmental Awareness and Stage II Business Strategies



- 1) GRACIA® is a pesticide that was developed in-house that is fast-acting on a wide range of crop pests and has little impact on honeybees which are useful insects. It was launched in South Korea in 2018 and has received a great response. GRACIA® was then launched in Japan in 2019 and is expected to increase our market share in the future.
- 2) We launched ROUND NOZZLE® ULV5, designed for use with ROUNDUP® MAXLOAD which uses only 5 liters of water to achieve 10a dispersion, which is expected to reduce farmer workload. As a result, we expect that ROUNDUP® will grow in demand as an agrochemical that is easier to use.
- 3) Along with factors such as the declining birthrate and aging population, the idea that companion animals are like a family to their owners is growing in popularity. We expect that the demand for veterinary pharmaceuticals will increase in the future as people become more aware about companion animal health.

## Efforts Started After Stage II Initiation

### Agrochemicals

At Nissan Chemical which consistently conducts research and development, manufacturing, and sales of agrochemicals, the ingredients that we develop in-house are major keys to increase profitability. Most recently, we launched GRACIA®, a product developed in-house, in 2018. However, it is necessary to create new products without compromising to current conditions.

We are developing a fungicide (development code NC-241) and herbicide for paddy rice (development code NC-653) as new products and are continuing research with the expectation that these will become our next big products.

### Veterinary Pharmaceuticals

In addition to BRAVECTO®, Fluralaner is also used as an ingredient in EXZOLT®, a red mite parasiticide for chicken which is sold in Europe, Brazil, and other countries. We will continue to develop veterinary pharmaceuticals for livestock use.



EXZOLT®\*

\* EXZOLT® is a registered trade mark of Intervet International B.V. and Intervet Inc.

## Pharmaceuticals

We entered the pharmaceutical business in 1982 and launched EPATEC<sup>®</sup>, an external preparation with ketoprofen serving as its main ingredient, as our first pharmaceutical product. Since then, we have continued to deal with challenges in the R&D of innovative new drugs, making full use of our strategically developed chemical compound library, our cutting-edge evaluation functions, and our fine organic synthesis technologies, mastering the pharmaceutical business from manufacturing to sales.

### In-house Drug Discovery

The development of the anti-hypertension agent efonidipine hydrochloride marked our start in the drug discovery business. It was launched as LANDEL<sup>®</sup> in 1994 in Japan. LANDEL<sup>®</sup> is distributed by Zeria Pharmaceutical Co., Ltd. and Shionogi & Co., Ltd. in Japan, and FINTE<sup>®</sup> is distributed by Green Cross Co. in South Korea. At the time of its development, drug development by major Japanese pharmaceutical manufacturers was focused on antibiotics while our company focused on (1) anti-hypertension agents and (2) anti-cholesterol agents, paving the way to success.

In 2003, Kowa Pharmaceutical Co., Ltd. launched LIVALO<sup>®</sup>, an anti-cholesterol agent, another one of our focus points, with the main ingredient pitavastatin calcium. Currently LIVALO<sup>®</sup> is sold in 25 countries around the world where it has been approved. However, in August 2013, its substance patent for Japan expired, and due to the decline in market share by generic drugs and the impact of drug price revisions, the domestic conditions continue to be harsh, and the creation of new drugs is an urgent need.

Currently we are developing a medication for thrombocytopenia (NIP-022) and an anti-arrhythmic agent (NTC-801), aiming to quickly advance to the next stages of development.

### Finetech<sup>®</sup>

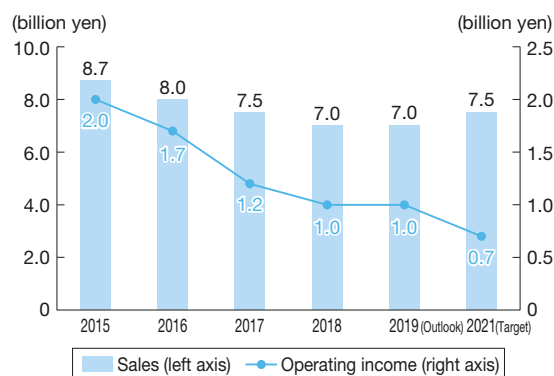
We are developing contracting business of technological development of pharmaceuticals for customers that provides total support to customers for their development of active pharmaceutical ingredients (API). We engage in the contracted development of manufacturing process in each one of the stages from

By focusing on drug discovery and manufacture of active ingredients, we are striving to develop better pharmaceuticals through a unique business model that does not have a sales department, licensing products which we have developed to pharmaceutical companies.

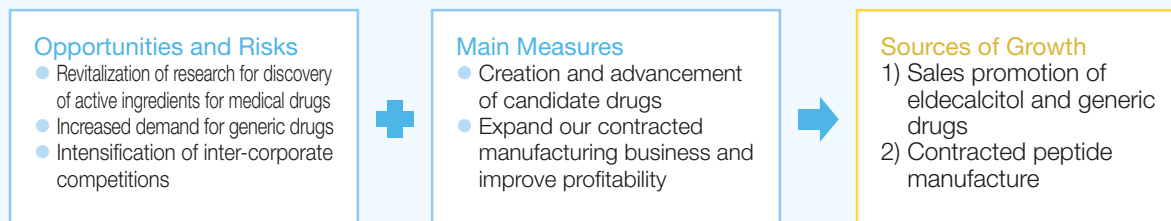
pre-clinical to commercial production, as well as the contracted manufacture of API and intermediates in compliance with GMP (Good Manufacturing Practice). Furthermore, we provide related services including quality design, stability testing, impurity and metabolite sample synthesis, and creation of MF (Master File) application materials. In recent years, we have also started supplying generic drugs to meet the need for highly active drug substances that require fine organic synthesis and containment. We possess a wide variety of asymmetric synthesis technologies (epoxidation reaction, kinetic optical resolution, aldol reaction, Michael reaction, etc.), oxidation reaction technology using organic molecular catalysts (AZADOL<sup>®</sup> and IBS), and fine organic synthesis technology based on prostaglandin derivative synthesis through a proprietary two-component coupling method. We also have an abundant amount of experience manufacturing in-house medical pesticides, and our strengths include multi-step synthesis and heterocyclic compound synthesis.



### Business Results and Outlook



## Environmental Awareness and Stage II Business Strategies



- 1) In 2015, we started the manufacture and sale of maxacalcitol, an active ingredient used in medications for psoriasis and secondary hyperparathyroidism, supplying it for the manufacturer and seller of generic drugs. Also, the demand for eldecalcitol, an active ingredient in osteoporosis medications, is growing due to the increasing number of patients with osteoporosis resulting from population aging. Based on the production results of maxacalcitol, we will move ahead with the development of eldecalcitol, which requires stable and advanced quality control, establish a stable supply system for the product launch in 2020, and develop it as a source of business growth.
- 2) Constrained peptide pharmaceuticals have the advantages of antibody preparations and low molecular drugs and are expected to be new drugs that can be manufactured at low cost. We invested 900 million yen last year in a third-party allocation of shares of PeptiStar Inc., which is aiming to establish a stable supply system for API of constrained peptides. We will continue our research of new manufacturing technologies with the aim of dramatically reducing costs.

## Efforts Started After Stage II Initiation

In addition to promoting the development of NIP-022 and NTC-801, we aim to license out drug candidate agents at the late stage of drug discovery. Also, drug discovery researches that are in their early stages are focused on neurological diseases. We will devote research resources to collaborative drug discovery research with Shionogi & Co., Ltd. and other pharmaceutical companies, and to nucleic acid drug discovery research with Luxna Biotech Co., Ltd. to increase the probability of success.

LIVALO® will serve as an important source for profits during Stage II as well. As pressure to control prices increases, we aim to maximize value with stable production results and high-quality APIs.

It will take time to acquire results in in-house drug discovery business. Until then, our Finetech business

will support our pharmaceutical business. In addition to our maxacalcitol business, which contributed to Stage I profits, we will get our business up to speed in anticipation of the launch of the eldecalcitol as new generic drug in FY2020. Furthermore, we will start a contracted peptide manufacture in collaboration with PeptiStar Inc., a company in which we have invested, using our overwhelming technological advantages, including liquid phase synthesis. During the final year of Stage II, we will proceed with a full-scale plan to transform Finetech® into a highly profitable business.

Our pharmaceutical business will continue to boldly challenge in-house drug discovery while supporting the backbone of our highly profitable Finetech business.

# Toward Creating New Businesses

By combining our core technologies with new materials and technologies, we are striving to create new products and businesses with high added value that meet the needs of society.

Economic development and technological innovation have enriched people's lives and made them more convenient. However, there are various challenges for a sustainable society, such as the declining birthrate, population aging, and progressing climate change issues.

We are making various efforts to create new businesses in order to contribute to a society which boasts health and longevity, an advanced information society, and an environmentally sustainable society.

## Life Sciences

### FCeM® Series

FCeM® series are the base materials for three dimensional cell cultures and serve as life science materials that enable preparation of cells efficiently and extensively. They are provided as Preparation Kit, Cellhesion®, etc. Preparation Kit can cultivate large amounts of iPS/ES cells by making suspension cultures possible. Cellhesion® enables mass culture of these cells as a scaffold for vaccines and antibody-producing cells and mesenchymal stem cells.



Cellhesion®

### NANOFIBER GEL®

This is an additive that is friendly to people and the environment, consisting of fatty acids and amino acids. It can be blended into many cosmetic items. When added, it exhibits a moisturizing effect and promotes penetration of active ingredients.

This product is use in hair care products for hair and scalp protection.



Hair care products



Foundation

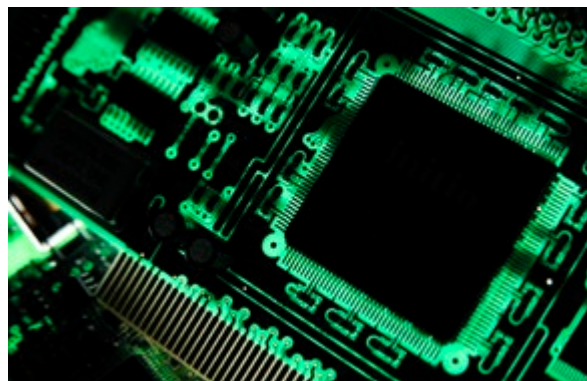
### prevelex®

Applicable from experiments and research to regenerative medicine, prevelex® is an ultra-thin film material with nanometer-level thickness which allows the easy coating of objects of various shapes. It can also be used on substrates that have previously been difficult to coat, such as polypropylene, cycloolefin polymers, and polydimethylsiloxane. We are promoting the development of customers in the medical equipment field by taking advantage of its characteristics to prevent the adhesion of biomaterials such as cell and proteins.

## Information & Communication

### SUNCONNECT®

This is liquid organic-inorganic hybrid resin materials that exhibit high thermal stability and near-infrared transparency, and suitable for imprinting methods, photo lithography and other processes. It is used for optical interconnects for purposes such as optical waveguides and lenses for optical connectors.



Optical wiring board (Illustration purposes only)

## Environment & Energy

### FairCurrent®

FairCurrent® is undercoat material for lithium-ion batteries (LiB) containing highly dispersed nanomaterial. The thin film of FairCurrent® coated on current electrode enables LiB to improve energy density and life by reduction of electric resistance and increasing adhesion to electrode, and applicable for the automotive LiB.



## Environmental Awareness and Stage II Business Strategies



## Efforts Started After Stage II Initiation

### Life Sciences

We will accelerate development of the FCeM® series in Europe, the United States, and Asia, and aim to expand new applications of materials to establish a global standard for cell culture materials.

As for NANOFIBERGEL®, we will aim to expand the use of functional cosmetic additives to major cosmetic manufacturers in Japan and overseas, promote the development of new additives, and commercialize functional cosmetic additives.

AQUAJOINT® is a two-component mixed-type, room temperature solidified and stretchable hydrogel with water as its main component (80% or more), making it possible to make the most of the characteristics and properties of water. Its development is moving forward mainly for application and adoption in the life sciences field.

### Information & Communication

With the launch of IoT and 5G services, the amount of data in optical communication networks is increasing, and the need for broadband optical modulators that convert large-capacity electrical signals into optical signals is expected to increase. Looking ahead at a future with such high-capacity optical transmissions, we are researching and

developing polymer light-modulating materials that use the electro-optic effect to make such transmissions possible.

### Environment & Energy

We are working on the development of materials that overcome high interface resistance which is a challenge in realizing new secondary batteries (storage batteries) that achieve both high safety and high energy density. While promoting joint development with automobile manufacturers and battery manufacturers, we are aiming for early commercialization of all-solid-state batteries.

In addition, the use of environmental energy, which has not been used thus far, is attracting attention as an increase in environmental awareness and as a sensor power source for IoT. Therefore, we are developing energy harvesting materials that convert environmental energy around us, such as light and heat, into electricity.

Furthermore, an energy-saving process is required for the dissemination of technologies for separating and collecting greenhouse gas that is emitted, which is expected as a measure against climate change. In order to achieve energy-saving processes, we are developing materials that advance membrane separation technology which helps reduce process size.

# Research and Development

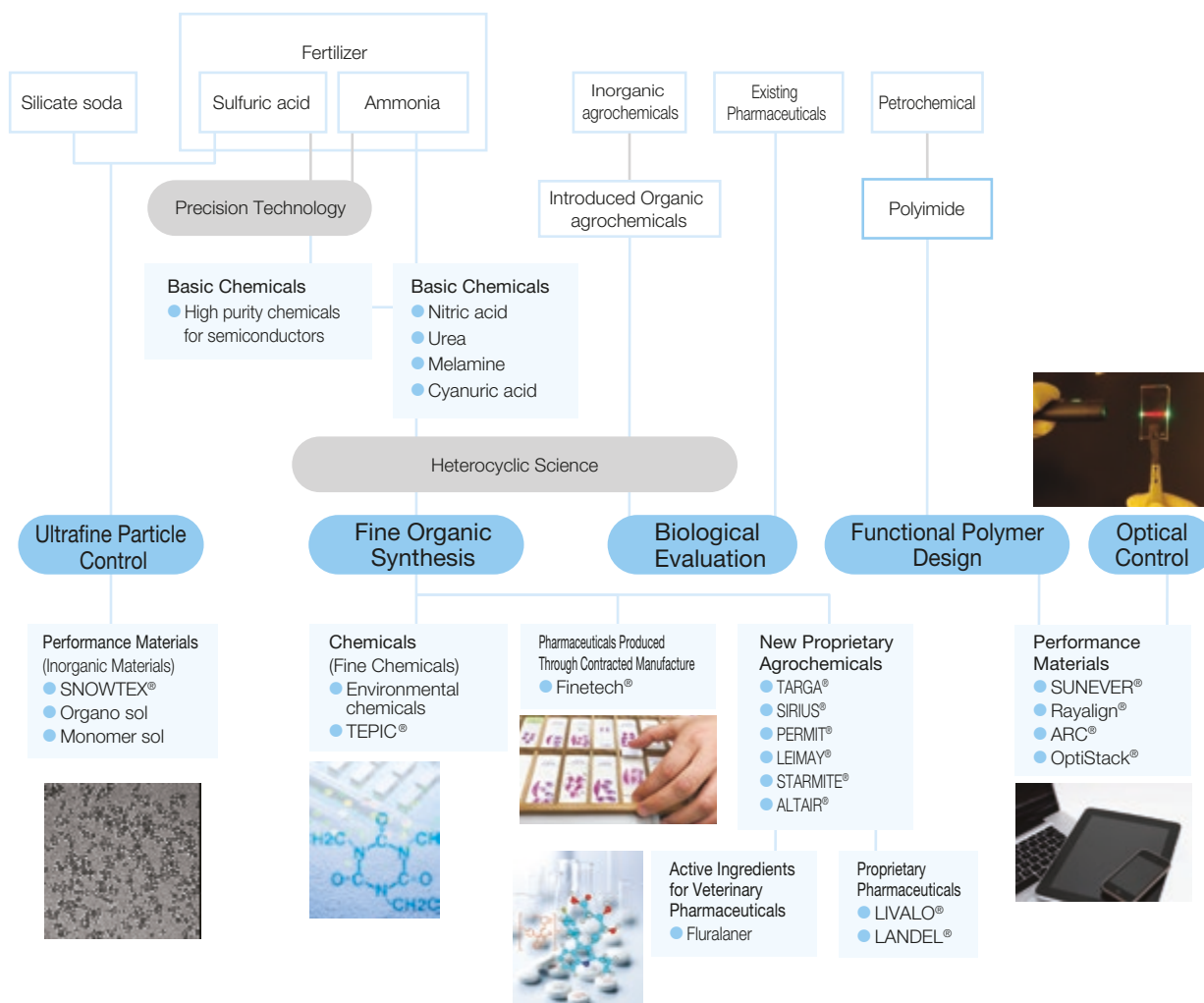
With “Fine Organic Synthesis”, “Functional Polymer Design”, “Ultrafine Particle Control”, “Biological Evaluation”, and “Optical Control” serving as our core technologies, we aim to become “A future-creating enterprise that responds to social needs with unique, innovative technologies” committed to continue creating new technologies and products.

## Our Core Technologies

Originally started as a fertilizer company, over our long history we have grown with “Fine Organic Synthesis”, “Functional Polymer Design”, “Ultrafine Particle Control”, “Biological Evaluation”, and “Optical Control” serving our core technologies.

In addition to further refining these technologies, we are working to develop new products and technologies and create new businesses by fusing these technologies while working closely with each other between research laboratories and related departments. We are also promoting the introduction of new technologies through joint research with universities and other companies.

### Our Core Technologies and Products



### Chemical Research Laboratories

Chemical Research Laboratories is Nissan Chemical's core R&D site, and is responsible for our corporate research. In addition to research and development of agricultural chemicals and pharmaceuticals that utilize the fine organic synthesis technology, Chemical Research Laboratories performs research on company-wide processes, material analysis research, etc.

- Materials Analysis Research Department
- Synthesis Research Department
- Agricultural Chemicals Research Department
- Pharmaceutical Research Department



Funabashi, Chiba

### Materials Research Laboratories

Materials Research Laboratories creates highly unique new materials, allowing us to respond quickly to increasingly sophisticated and diverse market needs. At the same time, the Laboratories focuses their efforts on researching next-generation materials in an effort to create new markets.

- Display Materials Research Department
- Semiconductor Materials Research Department
- Inorganic Materials Research Department
- Advanced Materials Research Department
- Frontier Materials Research Department



Funabashi, Chiba



Toyama, Toyama



Sodegaura, Chiba

### Biological Research Laboratories

Biological Research Laboratories serves as a place for life science research, such as evaluation research related to the usefulness and safety of agricultural chemicals, pharmaceuticals and medical materials.

- Agricultural Chemical Research & Development Department
- Toxicology & Environmental Science Department
- Pharmaceutical Research Department
- Medical Materials Group



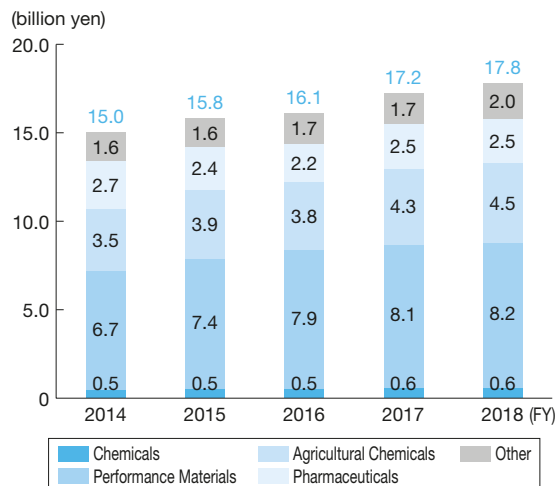
Shiraoka, Saitama

## R&D Expenses

We consider R&D is the source of growth, and have intensively invested our management resources in R&D.

Over the last five years, R&D expenses have totaled 81.9 billion yen. The percentage of our expenses in Performance Materials and Life Sciences (Agricultural Chemicals and Pharmaceuticals) is accounting for 46% and 39% respectively.

### R&D Expenses



## Provision of new value for helping to enrich people's lives

**There are various challenges in modern society, such as the declining birthrate, aging population, and climate change. We believe in the potential of chemistry and are working to provide new value useful for people's lives by further refining our core technologies cultivated over our long history.**

### Supporting the lives of people in an aging society through experience cultivated in drug discovery and life science technology

The total population of Japan will decline to 116.62 million in 2030, and the percentage of those people that are 65 or older is projected to increase to 31.5%. Also, lifestyle-related diseases are increasing due to changes in lifestyles. With the progress of aging and increased lifestyle-related diseases, awareness for increasing healthy life expectancies is growing.

We entered the pharmaceutical business in 1982 and have been working on the development and popularization of pharmaceuticals ever since. The anti-hypertension agents and anti-cholesterol agents that we have developed are used not only in Japan but also overseas.

Cultivated in the pharmaceutical business, biological evaluation is utilized for the development of biomedical materials, including cell culture materials and biocompatible materials, those contribute to advanced medical care.

The FCeM® series is a 3D culture medium developed by the New Energy and Industrial Technology Development Organization (NEDO) based on research in the practical application of human stem cells.



Although ES cells and iPS cells are said to be cells that can be for any organ, billions to hundreds of billions of cells are required to regenerate organs. Through the use of FCeM®, aggregates are dispersed in a suspended state, enabling higher density culture and enabling mass culture of ES cells and iPS cells.

prevelex® is an ultra-thin film material with nanometer-level thickness for preventing the adhesion of biomolecules. It can be coated on various base materials and enables formation of spheroids (cellular masses that possess organ functions). Since spheroids can be injected directly into organs with a catheter or other device, high engraftment and therapeutic effects are expected.

We will further develop these biomaterials and support the progress of regenerative medicine.

### Contributing to solving the world's population growth and food issues

The world's population is increasing, especially in developing countries, including some countries in Asia and Africa. The current world population of 7.6 billion is expected to reach 8.6 billion by 2030. In addition to population growth, demand for agricultural products is expected to increase significantly due to a multiplication in demand for food and feed, mainly in emerging and developing countries as income levels improve, and demand for use of crop-based biofuels. On the supply side, however, there are concerns about serious food shortages due to the possibility of arable land expansion, water supply limits, and abnormal weather due to climate change. In order to respond





to such food shortages, it is indispensable to enhance the productivity of existing farmland, and the role of production materials such as agrochemicals that support agricultural productivity is increasing.

Our company was founded in 1887 as Japan's first chemical fertilizer manufacturer to solve food issues which Japan faced at the time under the company policy "to dedicate ourselves to prosperity of the nation by agricultural fertility." We will continue to actively seek out and develop new drugs for major crops in Japan and overseas, expand our product lineup, and contribute to solving food problems by providing a wide range of products both in Japan and overseas.



ALTAIR® is an active ingredient in herbicides for paddy rice that is effective in eliminating bulrush and cyperaceous perennial weeds. This product is able to kill weeds both above and below the ground. In Japan, it is sold as "Twin Star," "Gekko," "Ginga," "Comet," "Tenku", and "Signus," products in which it is a main ingredient. In addition, it is used in South Korea and China where it shows favorable sales.

GRACIA® is a general purpose pesticide that is effective against a wide range of difficult-to-control insects such as lepidoptera and thrips found in vegetables and tea, and has little impact on honeybees. It was launched in South Korea in 2018 and in Japan in 2019, moving along with its development in China and India, and conducting related evaluations in Asia and South America.

**Aiming for achieve harmony  
with the environment through  
environmentally-friendly technology**

As humans enrich their lives, there are various effects on the global environment which is the foundation of life. Large consumption of fossil fuels, including oil, increases greenhouse gas emissions and accelerates climate change. Improper management of waste, pollutants, and chemicals affects the natural environment as well as people's health. Since the world population will continue to grow, it is essential to preserve the global environment while maintaining and improving human life.

We define environmentally friendly products as the products that reduce environmental impact across each of the processes, from manufacture to distribution, use and final consumption, or that play an important role in achieving that goal. We aim to contribute to society in harmony with the environment by increasing the percentage of our products that are environmentally friendly.

Our inorganic materials used in SNOWTEX®, aluminasol, organo silica sol, NanoUse® ZR are performance materials developed based on our "Ultrafine Particle Control" technology. The materials can be used for a wide range of purposes, including saving energy from transformers, improving the efficiency of natural energy, purifying emissions, and extending the life of motors.

Venus® Oilclean is a microorganism formulation that decomposes oils and fats in wastewater from food factories and other facilities. Compared to the pressurized floating facility, which is a typical oils and fats in wastewater treatment system, the facility using Venus® Oilclean significantly reduces odors and workload as well as waste with simple equipment. Some major food factories have reduced the amount of waste derived from oils and fats to almost zero by introducing this product.





## Strengthening of Nissan Group's business base

**In order to enhance our ability to respond to diversifying and sophisticated market demands, we will work to strengthen our R&D capabilities and improve product quality. At the same time, we aim to strengthen our business foundation through initiatives such as creating a comfortable workplace and securing/developing human resources.**

### Personnel retention and trainings

We believe it is essential for human resource development that “each employee should continue to educate themselves voluntarily in their efforts to develop themselves.” Therefore, we have established various human resource development programs for our employees who aspire to learn new things and develop themselves. We are implementing a wide range of measures, such as building a system that creates two-way communications within and across departments, and actively dispatch employees to external research institutions and overseas company bases.

#### Self-start training

For the purpose of laying a foundation for self-starting human resources who “think and do what they should do,” technical employees focus on training which involves “creating original plans and executing them” for a period of two years after entering the company and office employees focusing on the same for three years after entering the company. Through training, we will continue to support each person, placing guides and managers at their side so that they can give their thoughts shape. In addition, senior employees from other departments related to a subject's theme are appointed as “advisors.” Also, employees from various departments work together to create a proposal.

At the end of each fiscal year, personal efforts will be compiled into a paper and participants with different specialties will meet and hold discussions.



The ideas proposed by young employees during this training are often adopted and used in subsequent work.

#### Overseas language study program

In order to work in a diversified workplace, we believe that it is important to understand each other's cultural backgrounds and ideas to understand each other, not only language.

Therefore, we have introduced an overseas language study program with the aim of having employees learn by experiencing and following different cultures.

While trainees experiencing language barriers while actually interacting with different cultures, we have been able to clearly see the growth of each trainee by keeping in touch with each one.



### Creation of a comfortable workplace

With recognition of growing concern for a lack of workers due to the declining birthrate and population aging as well as diverse working styles, our Group promotes initiatives that enable employees to work in a highly productive manner and achieve a good work-life balance. We intend to evolve not only how to balance work and life, but also how to set up virtuous cycle which work enriches the life and life develop the work through trial and error.

#### Introduction of systems for promoting a good work-life balance

We have introduced a wide variety of systems and measures that enable employees to achieve a good work-life balance. In addition to maintaining the high rate of employees taking annual leave of 70% or more in recent years, we are also aiming to support more efficient ways of working and taking time off. For example, we implemented a new hourly leave system in FY2018.

### Promotion of Appropriate Work Hours

We are making various efforts to provide appropriate work hours.

- **Workshop for work hours:** We held workshops to learn about the basics of working hours at meetings of personnel managers and labor union training sessions. Labor management training is also implemented for all managers.
- **Introduction of new system for work management:** We have introduced a new system that enables timely monitoring and visualization of working hours and remaining annual leave.
- **Annual leave promotion:** We encourage employees to take two days of planned annual leave and three days of personal annual leave after consultation between labor and management. An annual leave calendar is created for each workplace. In the middle of the fiscal year, the bosses of employees who take very few days of annual leave are contacted by the Personnel Department to encourage them to take time off.
- **No Overtime Day:** This program is implemented at our head office and plants. No Overtime Day is set at each business location based on its own conditions. Measures including patrols are taken so that the program will not be a mere façade.

### Promotion of diversity

In order to grow as a “future-creating enterprise” and contribute to society, we believe that the participation of diverse human resources is essential as globalization and technological advancement accelerate changes in lifestyle and diversification of values.

At Nissan Chemical, a diverse range of individuals have been actively contributing to the Group with their excellent talents in a wide range of fields irrespective of the age, gender, nationality, race, ethnicity, or other factor. One thing that we are proud of is our high employee retention rate, such as 15.8-year of the average length of service, it makes us believe that our workplace environment allows each individual employee to play an active part. We will continue to further promote respect for diversity.

#### Promoting Active Participation of Women in the Workplace

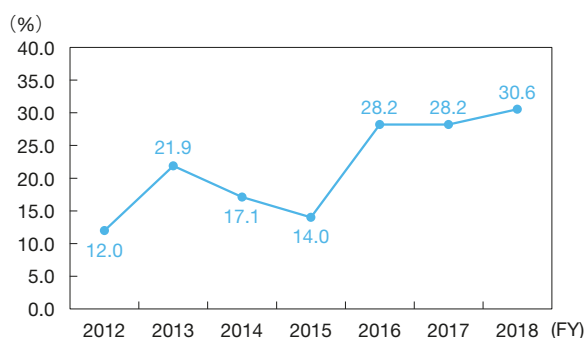
With regard to creating a work environment where female employees can play an active role, we have

been working on efforts such as reducing overtime, promoting annual leave, and introduction of a childcare leave system and system that allows shorter working hours for childcare that both exceed legal requirements in order to achieve a good work-life balance.

In addition, with regard to the promotion of women, we have set our target to increase the ratio of women among employees in the regular position from 8.9% to 10% by the end of FY2020. We are working so that proportion of 30% of women among new graduates in the regular position is achieved and the range of occupations held by women is expanded in each department.

We will continue to employ talented human resources, regardless of gender, through fair evaluation and training.

#### Proportion of women among employees in the regular position



In 2018, we were granted Next Generation Accreditation Mark (as known as Kurumin) by the Tokyo Labour Bureau of the Ministry of Health, Labour and Welfare, as a company who supports childcare well. Also, we have been recognized under the 2019 Certified Health and Productivity Management Organization Recognition Program (White 500) for three consecutive years by the Ministry of Economy, Trade and Industry and Nippon Kenko Kaigi.

## Continuous improvement of responsible care activities

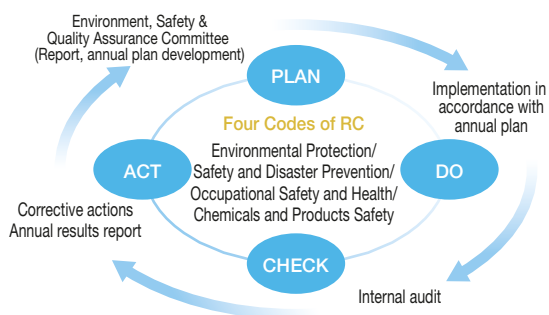
We are putting effort into Responsible Care (RC) activities designed to secure environment, health and safety (EHS) performance on voluntary basis throughout the entire process, from the development of chemical substances to manufacture, distribution, use, final consumption and disposal/recycling, and provide communication with society through the announcement of their results.

### RC Management

#### System

To achieve our RC mid-term plan (2016-2021), we have established RC management system based on ISO14001\*, and we carry out targets management and continuous improvements based on PDCA (Plan, Do, Check, Act).

\* International standard for environmental management system. All of our plants have acquired ISO 14001 third party certification.



#### RC Audits

RC audits are activities for checking RC activities at each plant, laboratory and affiliate. They are carried out by Environment, Safety & Quality Assurance Department in accordance with the RC audit guidelines. In these audits, the auditors check whether RC activities, as well as internal audits and patrols, are carried out appropriately and the PDCA cycle is implemented without fail, and compliance about EHS at each location. Environment, Safety & Quality Assurance Department clarifies visible or potential problems related to EHS and promotes improvements in



response after clarifying the problems, if any.

In FY2018, total 49 RC audits were conducted.

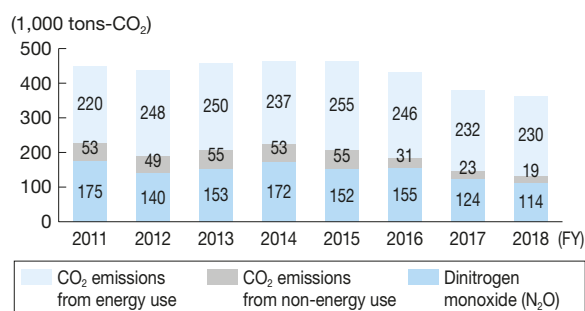
### Environmental protection and countermeasures to address climate change

#### Efforts for Reducing GHG (Greenhouse Gas) Emissions

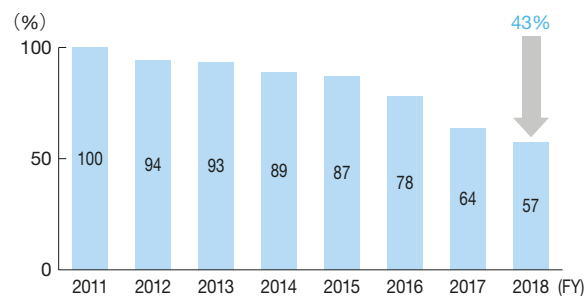
Our Group actively works to reduce GHG in business activities and contribute to the mitigation of climate change through the provision of eco-friendly products and services.

In FY2018, the conversion of the fuel for heating furnaces for the manufacturing plant of cyanuric acid from heavy oil to natural gas, which generates less GHG, helped to reduce GHG emissions from energy use and non-energy use. The volume of reduction of emissions was 17,000 tons-CO<sub>2</sub> compared to that of FY2017 levels. By reducing emissions by 19% from FY2011 level, the energy consumption rate calculated as a ratio of emissions and sales (emissions/sales) significantly improved by 57% compared to that of FY2011.

#### Greenhouse gas emissions



#### Index of the GHG emission rate (FY2011 as a base of 100)



## Safety and Disaster Prevention

We carry out risk assessment, process risk predictions, and facility risk predictions by prior assessment for manufacture with the aim of ensuring safety, achieving stable operations, and improving our process safety capability.

As a result, in FY2018, there was no accident such as explosion, fire, and leakage. Our plants, laboratories, and affiliates carry out various drills and training sessions, and are designed to make us ready to respond to emergencies or accidents in a reliable manner.



Disaster drill

## Occupational Health and Safety

Through our RC management system, we prevent occupational accidents, promote the good health of staff, and build a comfortable workplace environment in our efforts to improve the level of safety and health at each business location. In addition, we carry out various drills and training sessions annually with the aim of ensuring safety, achieving stable operations, and improving our process safety capability to make us ready to respond to emergencies or accidents in a reliable manner.

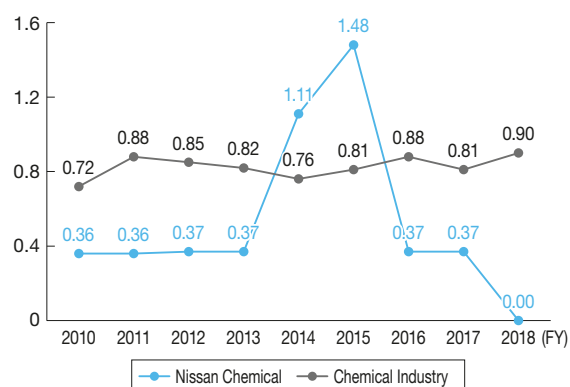
In FY2018, we had six cases of accidents not requiring staff time off from work and zero accidents requiring staff time off from work, representing a reduction from FY2017. In measure, we believe this is the result of our investment of a total of 350 million yen over the three-annual period beginning in FY2016 to the safety of facilities for prevention of falls/overturning. We will continue aiming to achieve zero accident by promoting risk assessment, risk predictions training, HHK<sup>1</sup>, 5S<sup>2</sup>, and appropriate wearing of protective equipment and by

raising awareness of safety through the safety meeting and the occupational safety newspapers.

\*1 HHK stands for Hiyari-Hatto (near miss incident) and Kigahari (alarming). It means the discovery of near-miss incidents that are not linked directly to serious injuries or accidents but could have resulted in such injuries or accidents.

\*2 5S stands for Seiri, Seiton, Seisou, Seiketsu, Shitsuke. These words mean "Sort" "Set" "Shine" "Standardize" "Sustain" respectively.

### Lost-time injury frequency rate



## Chemicals and Products Safety

### Risk Assessment in Products Lifecycle

We perform a risk assessment (prior assessment) of each step in handling chemical products, such as the research and development, manufacture, sales and revision. The assessment of risks to human health and the environment in the value chain is based on data performed by the Biological Research Laboratories, either on its own or by outsourcing, safety test data obtained from results of searching external databases such as literature, and checking things such as data on physicochemical properties and work environment conditions. Based on the results of risk assessment, we avoid using chemicals of concern and study safe alternatives. These results are reported to top management and made known to all the relevant people in the Company. The results are also made known to people in the value chain by means such as technology transfer documents and safety data sheets (SDSs).

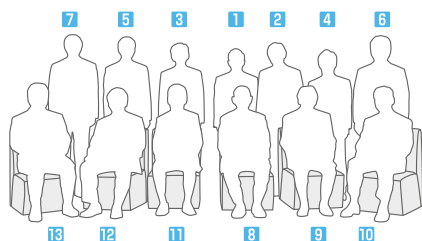
In addition, we also participate in Long-Range Research Initiative, an international initiative promoted by Japan Chemical Industry Association (JCIA) that seeks to provide long-term support for research on the impact of chemicals on human health and the environment. The activities we engage in aim to advance research on the assessment of risks to human health and the environment.



## Corporate Governance



We think of corporate governance as a mechanism that ensures sound, efficient management to provide stakeholders with sustainable, medium- to long-term profits. Based on this idea, we strive to ensure management decisions are made promptly, and work to clarify the management responsibility and responsibility for executing operations. At the same time, we take initiatives for strengthening the management's monitoring function, compliance, risk management, and internal control system under our Board of Directors and Board of Corporate Auditors, whose members include highly independent outside officers.



\* Officers who were appointed at the close of the 149th general meeting of shareholders held on June 26, 2019.

### **1** Kojiro Kinoshita (Representative Director, President & CEO)

1977 Joined the Company  
 2002 Became Director, Head of Corporate Planning Department  
 2006 Became Managing Director  
 2008 Became Representative Director, President & CEO (to the present)

### **2** Junichi Miyazaki (Director, Senior Executive Vice President)

1974 Joined The Industrial Bank of Japan, Limited (currently Mizuho Bank, Ltd.)  
 2000 Became General Manager of International Department of The Industrial Bank of Japan, Limited (currently Mizuho Bank, Ltd.)  
 2003 Became Corporate Auditor of Mizuho Corporate Bank, Ltd. (currently Mizuho Bank, Ltd.)  
 2005 Became Managing Executive Officer of Kowa Real Estate Co., Ltd.  
 Became Managing Director of Kowa Real Estate Co., Ltd.  
 2006 Joined the Company, Advisor  
 Became Director  
 2007 Became Director, Head of Corporate Administration Department  
 2008 Became Managing Director  
 2011 Became Senior Managing Director  
 2013 Became Director, Senior Executive Vice President (to the present)

### **3** Hiroyoshi Fukuro (Director, Senior Executive Vice President)

1979 Joined the Company  
 2004 Became Director, Head of Electronic Materials Research Laboratories  
 2011 Became Managing Director  
 2013 Became Senior Managing Director  
 2014 Became Director, Senior Managing Executive Officer  
 2018 Became Director, Senior Executive Vice President (to the present)

### **4** Katsuaki Miyaji (Director, Managing Executive Officer)

1985 Joined the Company  
 2010 Became Director, Head of Chemical Research Laboratories  
 2011 Became Director, Head of Advanced Materials & Planning Department  
 2014 Became Executive Officer, Head of Electronic Materials Research Laboratories  
 Became Executive Officer, Head of Materials Research Laboratories  
 2016 Became Managing Executive Officer, Head of Corporate Planning Department  
 Became Director, Managing Executive Officer  
 Head of Corporate Planning Department (to the present)

### **5** Takashi Honda (Director, Managing Executive Officer)

1981 Joined the Company  
 2012 Became General Manager of Planning & Development Department, Agricultural Chemicals Division  
 2014 Became Executive Officer, Deputy Head of Agricultural Chemicals Division, General Manager of Planning & Development Department, Agricultural Chemicals Division  
 2017 Became Managing Executive Officer, Head of Agricultural Chemicals Division  
 Became Director, Managing Executive Officer (to the present)

### **6** Hitoshi Suzuki (Director, Managing Executive Officer)

1985 Joined the Company  
 2007 Became General Manager of Semiconductor Materials Department, Electronic Materials Division  
 2010 Became General Manager of Semiconductor Materials Research Department, Electronic Materials Research Laboratories  
 2012 Became General Manager of Semiconductor Materials Department, Performance Materials Division  
 2013 Became Deputy Head of Performance Materials Division  
 Became Director, Deputy Head of Performance Materials Division  
 2014 Became Executive Officer, Deputy Head of Performance Materials Division  
 2016 Became Executive Officer, Head of Materials Research Laboratories  
 2018 Became Managing Executive Officer, Head of Performance Materials Division  
 Became Director, Managing Executive Officer (to the present)





## 7 Hiroshi Onitsuka (Corporate Auditor) New

- 1981 Joined the Company
- 2001 Became General Manager of Toxicology & Environmental Science Department, Biological Research Laboratories
- 2007 Became General Manager of Analysis Research Department, Chemical Research Laboratories
- 2011 Became Head of Biological Research Laboratories
- 2013 Became Director, Head of Biological Research Laboratories
- 2014 Became Director, Executive Officer, Head of Research Planning Department
- Became Executive Officer, Head of Research Planning Department
- 2016 Became Executive Officer, Head of Chemical Research Laboratories
- 2019 Became Corporate Auditor (to the present)

## 8 Tisato Kajiyama (Outside Director) Outside

- 1969 Took Post Doctor Course, The University of Massachusetts Amherst, USA
- 1984 Became Professor of Faculty of Engineering at The Kyushu University (currently National University Corporation Kyushu University)
- 2001 Became President of The Kyushu University
- 2008 Became President of Independent Administrative Institution Japan Student Services Organization
- 2010 Became Outside Corporate Auditor of the Company
- 2011 Became Chairman, Board of Trustees and President of Public University Corporation Fukuoka Women's University (to the present)
- 2014 Became Outside Director of the Company (to the present)

## 9 Tadashi Ohe (Outside Director) Outside

- 1969 Qualified for attorney-at-law
- 1989 Became Instructor for the Legal Training and Research Institute of Japan (court representation in civil proceedings)
- 1994 Became Outside Corporate Auditor of Canon Inc.
- 2004 Became Outside Corporate Auditor of Marui Group Co., Ltd. (to the present)
- 2006 Became Outside Corporate Auditor of Kao Corporation
- 2011 Became Outside Director, JECO Co., Ltd. (to the present)
- 2015 Became Outside Director of the Company (to the present)

## 10 Hidehito Obayashi (Outside Director) Outside

- 1969 Joined Hitachi, Ltd.
- 2001 Became Director of Hitachi High-Technologies Corporation
- 2003 Became Vice President and Executive Officer of Hitachi High-Technologies Corporation
- 2006 Became Representative Executive Officer, Senior Vice President and Executive Officer of Hitachi High-Technologies Corporation
- 2007 Became Director, Representative Executive Officer, President and Chief Executive Officer of Hitachi High-Technologies Corporation
- 2011 Became Chairman of the Board of Hitachi High-Technologies Corporation
- 2013 Became Consultant of Hitachi High-Technologies Corporation
- 2015 Became Honorary Consultant of Hitachi High-Technologies Corporation (to the present)
- 2019 Became Outside Director of the Company (to the present)

## 11 Norihiro Suzuki (Outside Corporate Auditor) Outside

- 1983 Joined The Norinchukin Bank
- 2003 Became General Manager of Naha Branch
- 2008 Became General Manager of Cooperative Finance & Administration (Kanto Area) Div.
- 2010 Seconded to Eiraku Co., Ltd. as President (currently Norinchukin Facilities Co., Ltd.)
- 2012 Became Managing Director of The Norinchukin Bank
- 2014 Became Director of Nochu Business Support Co., Ltd., and Director of Nochu Information System Co., Ltd.
- 2016 Became Outside Corporate Auditor of the Company (to the present)

## 12 Shuichi Takemoto (Outside Corporate Auditor) Outside

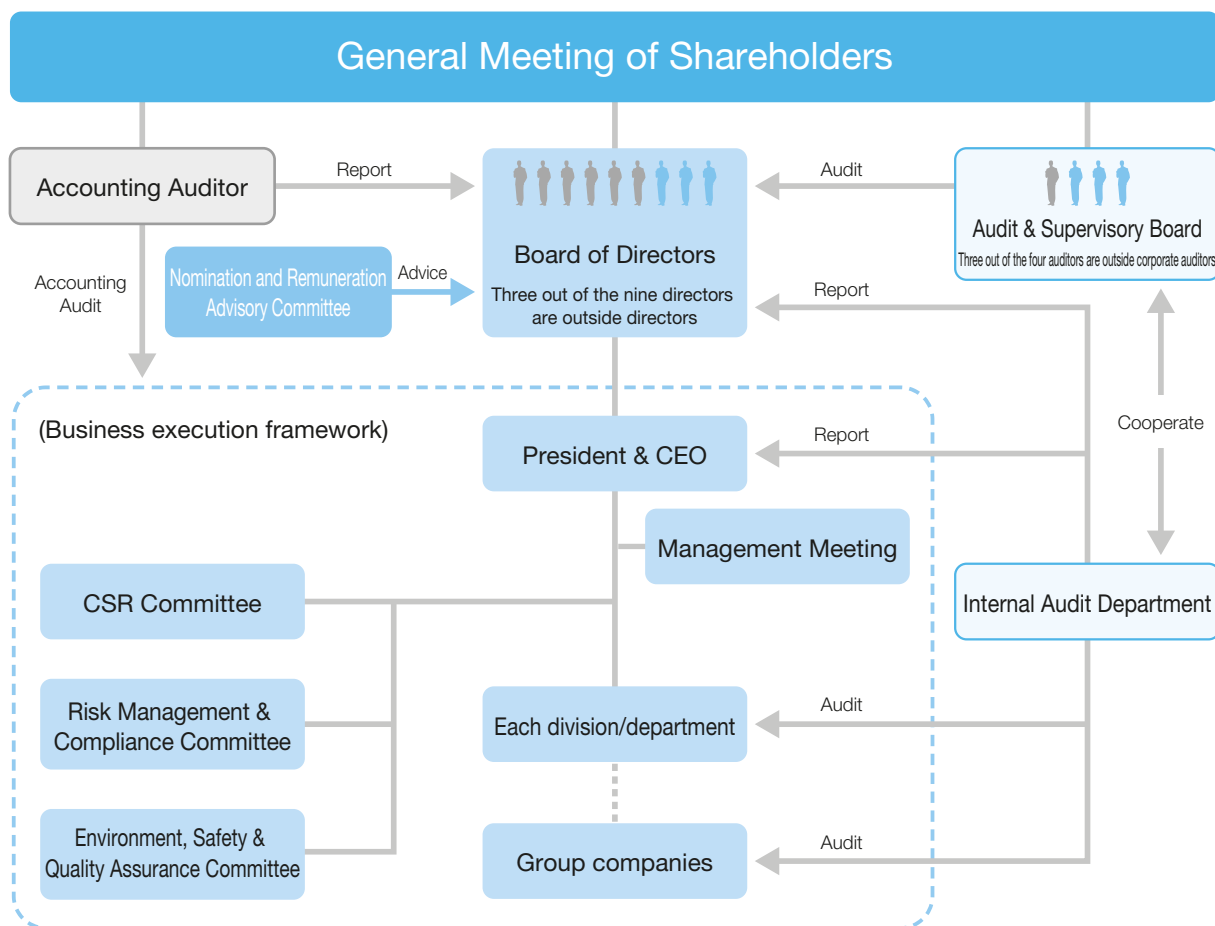
- 1982 Joined The Fuji Bank, Limited
- 2002 Became Deputy General Manager, IT & Systems Control Department of Mizuho Bank, Ltd.
- 2004 Became General Manager, Human Resources Division of Mizuho Information & Research Institute, Inc.
- 2008 Became General Manager, Fukuoka Branch of Mizuho Bank, Ltd.
- 2009 Became General Manager, IT & Systems Planning Department of Mizuho Trust & Banking Co., Ltd.
- 2010 Became Executive Officer, IT & Systems Planning Department of Mizuho Trust & Banking Co., Ltd.
- 2011 Became Managing Executive Officer of Mizuho Trust & Banking Co., Ltd.
- 2013 Became Managing Executive Officer of Mizuho Trust & Banking Co., Ltd., and Managing Executive Officer of Mizuho Financial Group, Inc.
- 2014 Became Deputy President of Mizuho Private Wealth Management Co., Ltd.
- 2017 Became Advisor of Mizuho Trust & Banking Co., Ltd. Became Outside Corporate Auditor of the Company (to the present)

## 13 Noriyuki Katayama (Outside Corporate Auditor) Outside

- 1990 Qualified for attorney-at-law, Joined Nagashima & Ohno (currently Nagashima Ohno & Tsunematsu)
- 1996 Qualified for attorney-at-law in New York State, USA. Joined Tokyo City Law & Tax Partners
- 2003 Joined City-Yuwa Partners (to the present)
- 2004 Became Statutory Auditor of Deutsche Asset Management (Japan) Limited (to the present)
- 2005 Became Statutory Auditor (part-time) of Deutsche Securities Junbi K.K. (currently Deutsche Securities Inc.)
- 2006 Became Outside Director of Accordia Golf co., Ltd.
- 2009 Became Visiting Professor of Toyo University Law School
- 2013 Became Supervisory Director of SIA REIT, Inc. (currently One REIT, Inc.)
- 2014 Became Examiner for the preliminary bar examination. Became Outside Corporate Auditor of the Company (to the present)
- 2017 Became Supervisory Director of HEIWA REAL ESTATE REIT, Inc. (to the present)
- 2018 Became Outside Director of Nippon Denkai, Ltd. (to the present)
- 2019 Became Outside Corporate Auditor of Livesense Inc. (to the present)

## Corporate Governance

### Corporate Governance System



\* Includes number of corporate officers who were appointed at the close of the 149th general meeting of shareholders held on June 26, 2019.

#### Execution and supervision of operations

By introducing a system with executive officers, we clarify the management's function of prompt decision-making and supervision and the function of executing operations, thereby strengthening both. We also strive to improve management's capabilities to develop and execute our management strategies. In addition, we have set a one-year term for each director and executive officer, thereby clarifying the management responsibility and the responsibility for executing operations.

#### Board of Directors

Our board meets monthly in principle, to resolve important management matters. It also supervises the execution of operations by directors and executive

officers. We ensure that important management matters are determined through careful deliberations at the board meetings or management meetings in our efforts to eliminate or reduce business risks. In addition, the details of decisions made at the management meetings and the results of business executions based on decisions made at the board meetings, etc. are reported to the Board of Directors to enhance the supervising function of the board meeting. We further strive to ensure and improve effectiveness in execution of roles and responsibilities of the Board of Directors by conducting the effectiveness evaluation on the overall Board of Directors every fiscal year.

### Audit & Supervisory Board

We have established the Board of Corporate Auditors. In accordance with auditing plans formulated by the Board of Corporate Auditors, corporate auditors audit the execution of directors' operation by participating in the board meetings and other important meetings, and by regularly visiting each division/department of the Head Office and plant/laboratory to exchange opinions.

### Nomination and Remuneration Advisory Committee

We established under the Board of Directors a Nomination and Remuneration Advisory Committee mostly consisting of independent outside directors for the purpose of strengthening the Board of Directors' independence, objectivity, and accountability in relation to matters such as the nomination and remuneration of Directors and further strengthening corporate governance. In response to the Board of Directors' request for consultation, the Nomination and Remuneration Advisory Committee shall deliberate matters, such as appointment of candidates as directors and corporate auditors and management executives, succession plans for management executives, and remuneration for directors, and report the content of their deliberations to the Board of Directors.

### Accounting Audit

We have appointed the Yaesu Audit Company as our accounting auditor. They audit at the end of each fiscal year, and during the fiscal year as necessary.

### Internal Audit

We have the Internal Audit Department, which conducts fair and independent internal audits of our Group. The results of internal audits are reported to the Representative Director, President & CEO, managing executive officers, and the Board of Directors. In addition, the department shares information and opinions with the corporate auditors, and collaborate with them.

### Support for Outside Directors and Corporate Auditors

The Corporate Planning Department supports outside directors by giving them prior explanations of the contents of the agenda and other matters to be discussed at the board meetings, and serves as a contact for inquiries. For outside corporate auditors, we have appointed audit assistants in response to requests from them. Audit assistants are employees who help outside corporate auditors fulfill their duties efficiently and smoothly. They serve as coordinators for holding internal audits, Board of Corporate Auditors' meetings, and other meetings, help outside corporate auditors conduct audits, and collect information to them.

### Governance Structure\*

Indicator	Scope of reporting	Unit	FY2015	FY2016	FY2017	FY2018
Directors	Inside directors	People	6	7	7	6
	Outside directors (Independent)	People	2(2)	2(2)	2(2)	2(2)
	Total	People	8	9	9	8
Ratio of independent outside directors (Actual)		%	25	22	22	25
Ratio of independent outside directors (Target)		%	—	—	—	33
Ratio of female directors		%	0	0	0	0
Number of Executive Directors		People	6	7	7	6
Average terms of positions held		Year	7.1	6.2	5.1	6.5
Board meetings		Times	13	12	12	12
Attendance of directors at board meetings		%	98.0	100	99.1	100
Attendance of corporate auditors at board meetings		%	96.2	100	100	97.9

\* Data is as of after the general meeting of shareholders held in June of each year.

## Corporate Governance

### Policy and Procedures in the Nomination of Officer Candidates

Decisions regarding the nomination of candidates for directors and corporate auditors are made at board meetings attended by outside

directors and proposed at the general meeting of shareholders.

In addition, nominations of corporate auditor candidates are approved by the Board of Corporate Auditors in advance.

#### Nominate Policy

	Policy	Number stipulated in the Articles of Incorporation	Current number	Number of outside officers included in the figure on the left
Directors	<p>We operate business activities globally in diverse fields, including chemicals, performance materials, agricultural chemicals, and pharmaceuticals. In nominating candidates for our directors, we consider the balance between knowledge, experience, capabilities, and other elements of the overall board of directors and its diversity to ensure that our directors can make decisions regarding the business activities in diverse fields, including chemicals, performance materials, agricultural chemicals, and pharmaceuticals, and supervise the execution of operations in an appropriate and flexible manner. The candidates to be nominated shall also be physically and mentally healthy, have excellent personalities and aspirations, and have a high level of insight and ethics.</p> <p>&lt;Inside Directors&gt; Human resources who have expertise, knowledge and other capacities in each business field such as corporate planning, personnel, finance &amp; accounting, research and development, production technology, environment, safety &amp; quality assurance and others.</p> <p>&lt;Outside Directors&gt; Human resources who are capable of giving opinions proactively, raising questions and giving advice on growth strategies, the enhancement of governance and other issues from the viewpoints of various stakeholders and society.</p>	12	9	3(3)
Corporate Auditors	Human resources with experience and knowledge in a wide range of fields including finance, accounting, and law who are capable of giving opinions and advice to the management from a fair and neutral standpoint, in addition to auditing the execution of operations.	5	4	3(2)

\*1 The figure in ( ) indicates the number of directors/corporate auditors designated as independent officers.

\*2 Includes the number of officers who were appointed at the close of the 149th general meeting of shareholders held on June 26, 2019.

#### Appointment of Outside Officer

	Name	Reason for appointment
Outside Directors	Tisato Kajiyama Appointed in June 2014	Dr. Kajiyama has acquired as the President of Kyushu University, the President of the Independent Administrative Institution Japan Student Services Organization and the President of Public University Corporation Fukuoka Women's University. We believe that he has reflected his broad range of knowledge, experience and expertise as a doctor of engineering in our corporate management with objective and neutral standing-point, and will continue to fulfill the duties appropriately.
	Tadashi Ohe Appointed in June 2015	We believe that Mr. Ohe has reflected his extensive experience, including his experience of outside director at several companies and expertise as attorney-at-law in our corporate management with objective and neutral standing-point, and will continue to fulfill the duties appropriately.
	Hidehito Obayashi Appointed in June 2019	After having served as Director of Hitachi High-Technologies Corporation, Mr. Obayashi serves as Honorary Consultant for the same company. As an executive of a corporate group that develops a variety of businesses globally, we believe that his extensive experience and broad insight can be reflected in our corporate management from an external perspective from an objective and neutral standing-point.
Outside Corporate Auditors	Norihiro Suzuki Appointed in June 2016	Mr. Suzuki has a wide range of knowledge, including extensive experience and finance expertise those are cultivated through many years of business at financial institutions. We believe that he has reflected his knowledge in our corporate audit with objective and neutral standing-point, and will continue to fulfill the duties appropriately.
	Shuichi Takemoto Appointed in June 2017	Mr. Takemoto has a wide range of knowledge, including extensive experience and finance expertise those are cultivated through many years of business at financial institutions. We believe that he has reflected his knowledge in our corporate audit with objective and neutral standing-point, and will continue to fulfill the duties appropriately.
	Noriyuki Katayama Appointed in June 2014	Mr. Katayama has an extensive experience including the experience of outside director/auditor at several companies and expertise as attorney-at-law. We believe that he has reflected his knowledge in our corporate audit and will continue to fulfill the duties appropriately.



## Officers' Remuneration

The fundamental principle in officers' remuneration is to maintain its system that is in line with management policy by ensuring that officers contribute to increasing operating performance on a continual basis over the mid- to long-term and toward increasing the overall value of the Group, thereby meeting shareholder expectations. At the same time, the basic policy is to set remuneration at an appropriate level, taking into account such factors as the management environment, operating performance and consistency with the treatment of employees.

The remunerations of individual directors are determined at the board meeting attended by outside directors as well within the total amount determined by resolution of the general meeting of shareholders. The decision of the Board of Directors is made after deliberation and reporting by the Nomination and Remuneration Advisory Committee. The remuneration of individual auditors are determined through discussions by corporate auditors. Also, we introduced Performance-Linked Stock Compensation in June 2019.

Officer	Number of officers	Remuneration
Directors	10	317 million yen
Corporate Auditors	4	88 million yen
Total	14	405 million yen
(includes outside directors)	(5)	(80 million yen)

\*1 Figures current as of June 2018.

\*2 The above number of officers and remuneration include remuneration for two directors who retired at the close of the 148th general meeting of shareholders held on June 27, 2018.

\*3 The remuneration limit for directors was determined to be within 45 million yen per month at the 139th general meeting of shareholders held on June 25, 2009.

\*4 The remuneration limit for auditors was determined to be within 10 million yen per month at the 139th general meeting of shareholders held on June 25, 2009.

\*5 There is no remuneration, etc. that outside officers are received from our subsidiaries.

## Effectiveness Evaluation of Boards

We annually analyze and evaluate whether the primary roles and responsibilities of our Board of Directors are fulfilled. In order to ensure the neutrality and objectivity of the executioner of the effectiveness evaluation, evaluation is conducted every few years by third-party that is not related to the Company and interests. The most recent evaluation by a third part was conducted in FY2017.

### Evaluation Procedures

In FY2018, all directors were given questions to answer in a questionnaire format. We requested an external organization to collect and count the questionnaires and self evaluations were enhanced by ensuring anonymity. Based on the results, all independent directors (two outside directors and one outside corporate auditor), the President, the Vice Presidents, the Director and Head of the Corporate Planning Department, and one corporate auditor analyzed and evaluated at the meeting of exchange of ideas. The results of the meeting were deliberated and summarized at the board meeting.

### Evaluation Results

As a result of the Effectiveness Evaluation for FY2018, it was concluded that our Board of Directors was generally operating appropriately overall from the perspective of carrying out its principle roles and responsibilities, and that the effectiveness of the Board of Directors was ensured as improvement measures were taken with regard to issues identified in the Effectiveness Evaluation for FY2017.

### Future Initiatives

1. Examination of the following utilizing the Nomination and Remuneration Advisory Committee.
  - a) Create systems to appropriately reflect our business performance in the nomination and remuneration of Directors.
  - b) Formulate, implement, and discuss management succession plans.
2. Consideration of the creation of a system that allows each director and corporate auditor to take sufficient time to study by providing information in advance and sharing information with directors and corporate auditors to deepen deliberations on resolutions within a limited time.
3. For investment projects approved by the Board of Directors, verification of the effectiveness of the investment on a regular basis and consideration of creating a system for reporting the results of the verification to the Board of Directors.



## Compliance

Since our Group regards compliance with laws and social norms as a condition for the survival and development of the company, our Basic CSR Policy stipulates that we need to conduct “sensible business activities” and conduct ourselves as “good corporate citizens and decent members of society”. In response, we recognize that compliance means complying with laws and social norms, formulate compliance rules, and established a compliance basic policy.

### Compliance Basic Policy

1. We consider compliance to be an important management issue and ensure thorough compliance in every aspect of its business activities, thereby establishing corporate ethics.
2. All officers and employees of Nissan Chemical Group shall be sufficiently aware of compliance and prevent the occurrence of a compliance violation.
3. In the event that a compliance violation has occurred or is likely to occur, we take a prompt and appropriate response.

### System

In our Group, the Risk Management & Compliance Committee, which is held twice a year, has been established as an organization to enhance the effectiveness of risk management, and to maintain and promote compliance. The committee is chaired by the Chief Risk Management Officer (CRO), who is appointed at the board meeting, and is composed of the Risk & Compliance Managers of each division/department, plant/laboratory, and domestic consolidated subsidiary. The important matters related to compliance and countermeasure plans, etc. are approved at the board meeting after discussion by the committee.

The Risk Management & Compliance Office under the Corporate Planning Department has been established as a specialized organization to promote continuous improvement in all of our Group's compliance activities. In addition to providing education and guidance on risks and compliance, the Risk Management & Compliance Office receives reports on the status of compliance with laws and regulations and the status of education and training in each department on a regular basis from Risk & Compliance Managers, and shares information within our Group.

In addition, we have established the Consultation Hotline to serve as an internal reporting system to prevent compliance violation or resolve the problem early on.

#### Number of Compliance Violations

Indicator	Scope of reporting	Unit	2015	2016	2017	2018
Consultation Hotline Reports	Consolidated	Cases	1	0	0	3
Legal actions received for anti-monopoly/anticompetitive practices (under investigation)	Consolidated	Cases	0 (0)	0 (0)	0 (0)	0 (0)
Fines charged and settlement fees for anti-monopoly/anticompetitive practices	Consolidated	1,000 yen	0	0	0	0
Confirmed corruption incident (under investigation)	Consolidated	Cases	0 (0)	0 (0)	0 (0)	0 (0)
Fines charged and settlement fees for corruption	Consolidated	1,000 yen	0	0	0	0
Other incidents related to compliance (excluding environmental)	Consolidated	Cases	0	0	0	0
Fines charged and settlement fees for other compliance related incidents (excluding environmental)	Consolidated	1,000 yen	0	0	0	0

## Measures for Promoting Compliance (FY2018)

General Compliance	New employee training and overseas subsidiary compliance training Compliance Manual revisions
Subcontracting Regulation	In-house training and internal audits related to the “Act against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors”
Information Management	Internal audits
Consultation Hotline	Establishment of internal reporting rules (independent of compliance rules) Continuous dissemination of related information via the in-house newsletter and posters
Anti-bribery	Formulation of a Group anti-bribery policy
Security Export Control	In-house training for the “Foreign Exchange Law”
Others	Training for newly-appointed board members and training for board members Legal training at plants and research laboratories

### Consultation Hotline

We have Consultation Hotline to prevent compliance violation or resolve the problem early on. When an employee discovers a compliance violation or potential compliance violation, he or she shall address the problem in normal operation in principle, through measures that include reporting the matter to their superior. However, if he or she thinks it is difficult to address the problem promptly and effectively, they can use the Consultation Hotline.

The contact point for reporting shall be the Risk Management & Compliance Office, outside attorneys, or outside corporate auditors, and the means for reporting may be selected by e-mail, mail, or telephone. Upon receipt of a report, the contents are reported to the corporate auditors. While accepting anonymous consultations, we have established a system that allows us to provide peace of mind by clearly defining in our rules the prohibition of interference with investigations, finding informants, and harassment.

### Compliance Training

We hold training sessions on corporate ethics for officers and employees, including new employee training, in an effort to further raise awareness.

In order to acquire legal knowledge necessary for business, various training activities pertaining to the “Act against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors”, insider trading regulations, prohibition of bribery of foreign public officials, etc. are held regularly. Not only officers and employees of our Company but also those of affiliated companies are targeted for these training activities, and we work to improve their knowledge, including by inviting lawyers as outside instructors, if necessary.

### Compliance Manual

The Compliance Manual sets forth rules so that executives and employees, etc. (regular employees, contract employees, part-time workers, temporary workers and dispatched workers) of the Nissan Chemical Group comply with laws and regulations, company rules, social norms, and ensure compliance. In addition, by including information about the Consultation Hotline system and details about its features in the Compliance Manual, we are raising awareness about our internal reporting system.

## Compliance

### Approach to Human Rights and Anti-Corruption

We joined the United Nations Global Compact (UNGC) in April 2018. In order to clarify our stance which supports the 10 principles advocated by UNGC in four fields in human rights, labor, the environment and anti-corruption, we will formulate new human rights policy, which will also pertain to labor, and anti-corruption policy, and continue to make efforts aimed at all our stakeholders, including our employees.



#### Nissan Chemical Group Human Rights Policy (Excerpt)

**1** Respect for Human Rights

**2** No Infringement of Human Rights

**3** Employment and Labor

Prohibition of Forced Labor and Child Labor, Good Labor-Management Relations, Fair and Equitable Remuneration, and Elimination of Discrimination

**4** Remediation

In the event that the Nissan Chemical Group causes or contributes to an adverse impact on human rights in the course of its business activities, it shall make efforts to remedy and correct such impact through appropriate means.

#### Nissan Chemical Group Anti-Corruption Policy (Excerpt)

**1** Definitions

“Corruption” means the abuse of entrusted official authority for personal or company gain, including bribery.

“Bribery” means that, when company conducts its businesses,

- any of its officers or employees provides improper benefits to a third party for the purpose of inducing a third party to conduct fraudulent or illegal acts, or upon request from a third party, or
- any of its officers or employees demands or receives improper benefits from a third party.

**2** Commitment to Anti-Corruption

**3** Compliance with respect to Anti-Corruption

“Unfair Competition Prevention Act”, the “U.S. Foreign Corrupt Practices Act” and the “Anti-Unfair Competition Law of the People's Republic of China”

**4** Remediation

In the event that the Nissan Chemical Group violates this Policy in the course of its business activities, it shall make efforts to remedy and correct the said violation through appropriate means and fully cooperate with investigations by the relevant authorities.

# Risk Management

We are promoting risk management in accordance with the following action guidelines, with the aim of recognizing the various risks involved in the Nissan Chemical Group, preventing the occurrence of loss risk and minimizing the impact of their occurrence.

## Risk Management Basic Policy

1. We place top priority on the safety of the lives of officers and employees of the Nissan Chemical Group.
2. We consider risk management as an important management issue, and engage in the activities from a company-wide perspective.
3. All officers and employees of the Group shall be sufficiently aware of risk management, strive to improve their abilities, and endeavor to prevent the occurrence of loss risk.
4. We promptly share the information on risk throughout the Group.
5. We make efforts to respond promptly and accurately to the occurrence of loss risk and to minimize losses.

## System

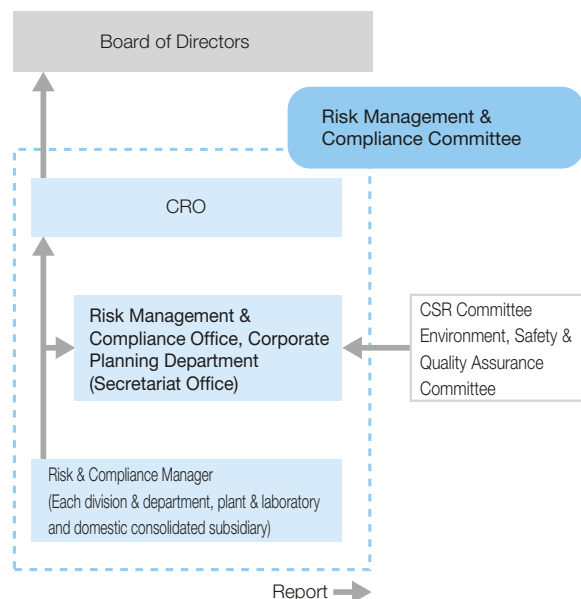
The Risk Management & Compliance Office under the Corporate Planning Department has been established as a specialized organization to promote continuous improvement in all of our risk management activities.

In addition, the Risk Management & Compliance Committee, which is held twice a year, has been established as an organization to enhance the effectiveness of risk management, and to maintain and promote compliance.

The committee is chaired by the Chief Risk Management Officer (CRO), who is appointed at the board meeting, and is composed of the Risk & Compliance Managers of each division/department, plant/laboratory, and domestic consolidated subsidiary. The Risk & Compliance Managers periodically conduct risk identification and assessment, formulate countermeasure plans, conduct self-assessment for status of implementation of the countermeasure plan and subject, formulate improvement plan, and regularly perform education and training at each division/department, plant/laboratory and domestic consolidated subsidiary.

The important matters related to risk management and countermeasure plans, etc. are approved at the board meeting after discussion by the committee.

### Risk Management System

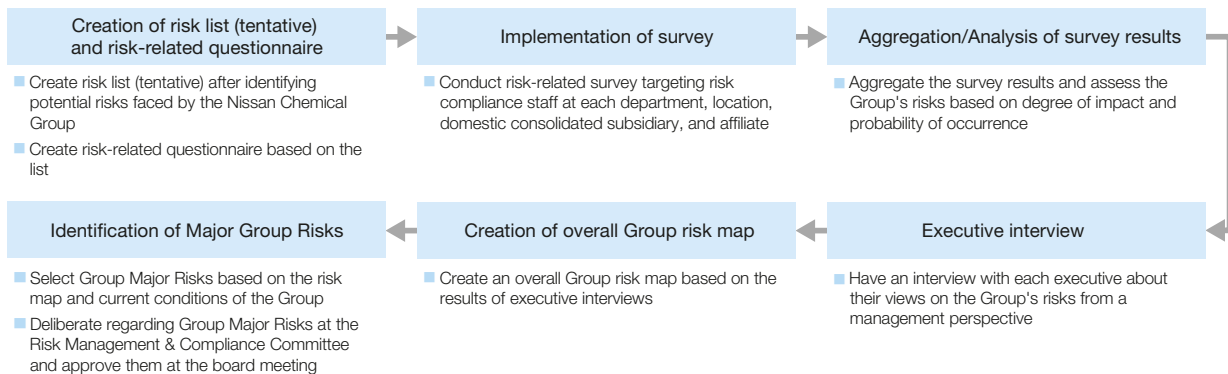


## Risk Management

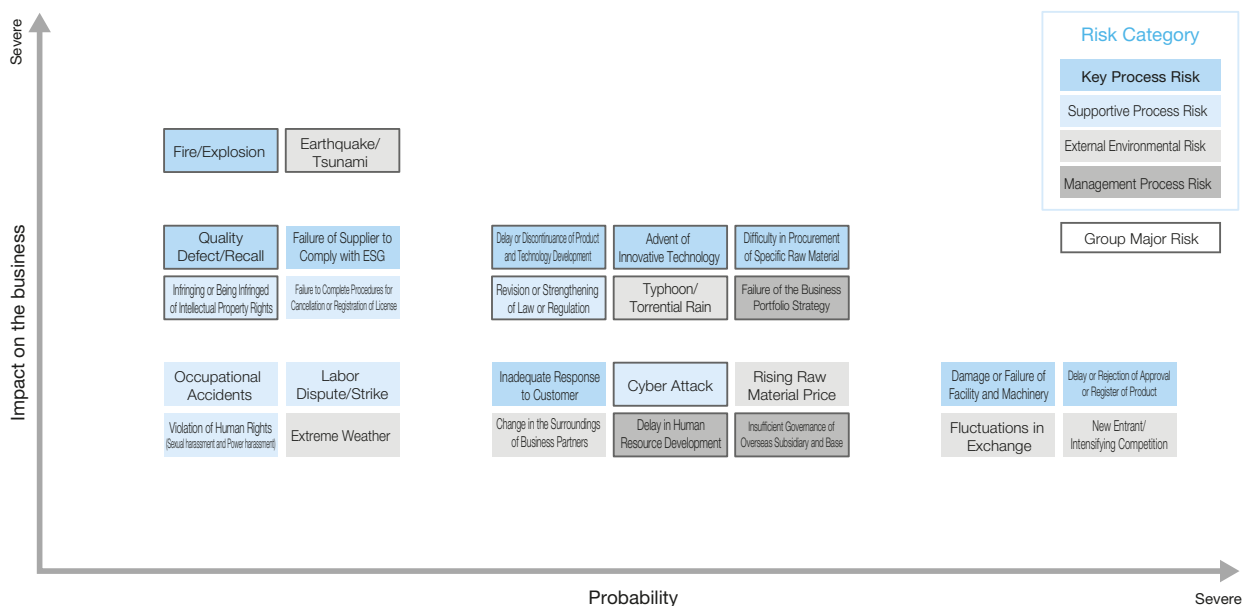
### Process for Identifying Group Major Risks

We clarified risks taking into account the business characteristics of each division and the surrounding businesses, including global political, economic and social conditions. Subsequently, risk assessment was conducted from the viewpoint of probability and impact on the business. By following the assessment, a risk map was created and Group Major Risks were identified. The contents of major risks were deliberated by the Risk Management & Compliance committee and approved at the board meeting.

### Risk Assessment (Risk Identification and Evaluation) ... Overview



### Risk Map (Excerpt)





## Group Major Risks and Countermeasures

Group Major Risk	Summary of Risk	Countermeasures against risk
Delay or Discontinuance of Product and Technology Development	Risk of the failure of payback of invested capital to R&D due to being unable to launch the product under development	Manage go/stop about research targets based on periodic evaluation
Advent of Innovative Technology	Risk of the losing competitive power due to advent of innovative technology with low cost	Set research targets based on the latest technology information
Failure of the Business Portfolio Strategy	Risk of decline in business performance due to the failure of the business portfolio strategy	Minimize risk by improving risk assumptions when formulating strategies
Difficulty in Procurement of Specific Raw Material	Risk of being unable to supply the product to customer due to the discontinuance of specific raw material	Confirm procurement situation, discover issues and implement countermeasure for stable procurement
Revision or Strengthening of Law or Regulation	Risk of unwilling discontinuance of sales of product, or unwilling change in business or capital investment plan due to revision/strengthening of law or regulation	Enumerate related laws and regulations and establish an infrastructure for obtaining law revision information
Typhoon/Torrential Rain	Risk of increasing expenses to plant restoration and decreasing production volume due to direct onslaught on main plant by large-scale typhoon	Revise/improve the countermeasures that make early recovery and business continuity possible
Earthquake/Tsunami	Risk of suspension of business activities and the death or injury of many employees due to catastrophic earthquake occurring at the location of business site	
Fire/Explosion	Risk of suspension of business activities and the death or injury of many employees, and being sued by neighborhood resident for the damage by fire/explosion at plant	Revise "No Fires, Explosions, or Chemical spills" measure
Quality Defect/Recall	Risk of reimbursement for large expenses by customer and discontinuance of transactions	Continue to implement "no recalls and no falsification cases" measure
Infringing or Being Infringed of Intellectual Property Rights	Risk of being subjected to a large amount of damages and product injunction claims from other company due to infringement on other company's patent	Create an IP verification process to reduce the risk of infringing of other company's patent
Cyber Attack	Risk of shut-down of operations for a long period of time, and losing credibility of customer and society because of leak of customer's or the Company's confidential information by cyber attack	Examine and implement countermeasures from the perspectives of prevention, damage minimization, and education
Delay in Human Resource Development	Risk of personnel shortage which occurs in each division due to delay in the human resource development	Establish an ideal model of manager as well as a training system
Insufficient Governance of Overseas Subsidiary and Office	Risk of losing credibility due to detection of fraud at overseas subsidiary and office caused by inadequate control	Formulate Group policy on company regulations and share Group philosophy and policies

## Financial Review of the Year Ended March 31, 2019

### Overview

The domestic economy for the current consolidated fiscal year (April 1, 2018 to March 31, 2019) continued to recover moderately as corporate earnings and consumer spending improved. However, exports tended to decline in the second half of the fiscal year due to an economic slowdown in China, Europe, and other countries. Under such circumstance, in the Chemicals Segment, sales of Basic Chemicals increased, while Fine Chemicals decreased. In the Performance Materials Segment, Display Materials and Semiconductor Materials business performed well. In the Agricultural Chemicals Segment, shipments of Fluralaner (active ingredients for veterinary pharmaceuticals) increased. In the Pharmaceuticals Segment, sales of "LIVALO" (anti-cholesterol drug) decreased.

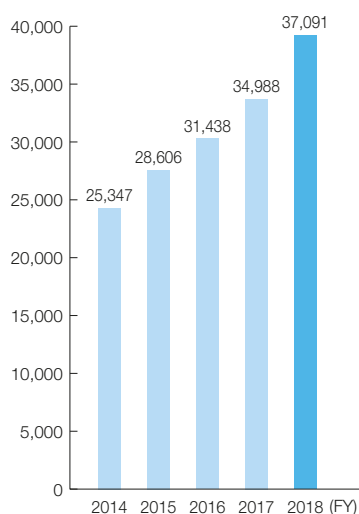
### Operating Results

As a result, the Company's results for the current fiscal year were net sales 204,896 million yen (an increase of 11,506 million yen), operating income 37,091 million yen (an increase of 2,102 million yen) and ordinary income 39,098 million yen (an increase of 2,862 million yen), and net income attributable to owners of parent 29,372 million yen (an increase of 2,229 million yen). Operating and ordinary income reached record highs for the fifth consecutive year and net income attributable to owners of parent for the sixth consecutive year.

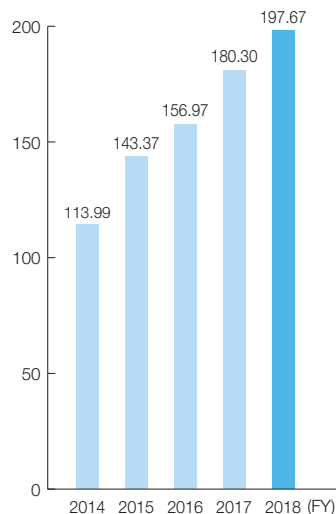
ROE was 16.6% and we have achieved the Mid-Term Plan target (maintain above 14%) for the three consecutive year.

Dividend was 82 yen and dividend payout ratio became 41.5%. We have repurchased share of 9.0 billion yen and total payout ratio was 72%.

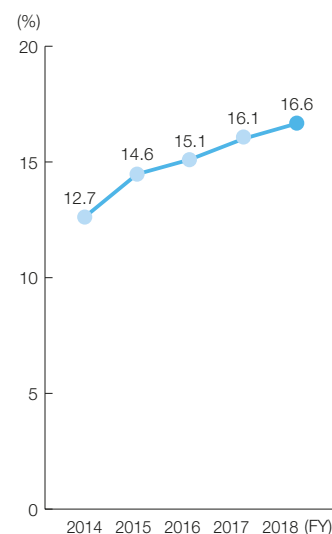
Operating Income (Millions of Yen)



Net Income per Share (Yen)



Return on Equity



## Financial Position

Total assets as of March 31, 2019 was 246,990 million yen (an increase of 949 million yen from the previous year). It is mainly due to an increase of notes and accounts receivable-trade and merchandise and finished goods.

Total liabilities as of March 31, 2019 was 64,916 million yen (a decrease of 4,759 million yen). It is mainly due to a decrease of loans payable.

Net assets as of March 31, 2019 was 182,074 million yen (an increase of 5,709 million yen).

As a result of these factors, equity ratio was 73.0% (an increase of 2.0% from March 31, 2018).

## Position of Cash Flow

Deducting income taxes paid from income before income taxes and non-controlling interests, depreciation and changes in working capital, net cash

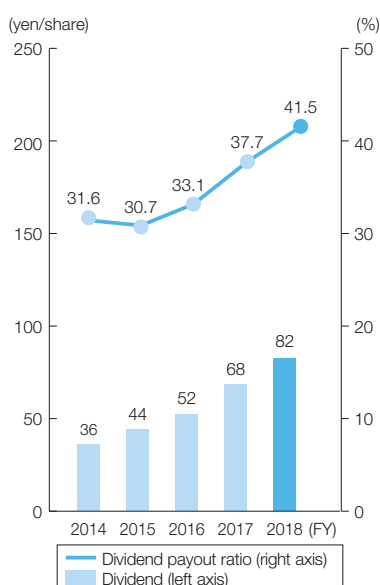
provided by operating activities for the consolidated fiscal year ended March 31, 2019 was 32,070 million yen (37,691 million yen for the previous year).

Due to investment on plant and equipment, net cash used in investing activities for the consolidated fiscal year ended March 31, 2019 was 10,884 million yen (15,244 million yen for the previous year).

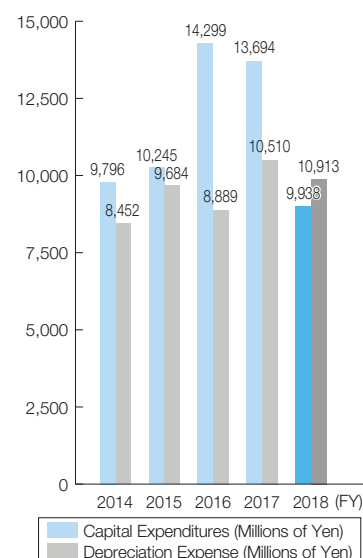
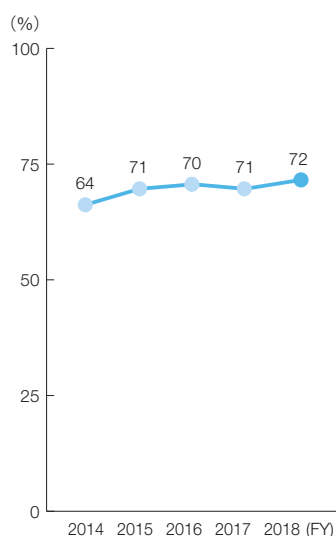
Due to share repurchase, payment for dividends and repayment of long-term loans payable, net cash used in financing activities for the consolidated fiscal year ended March 31, 2019 was 22,563 million yen (20,268 million yen for the previous year).

As a result of these factors, cash and cash equivalents for the consolidated fiscal year ended March 31, 2019 was 36,183 million yen (37,702 million yen for the previous year), reflecting exchange of 141 million yen. It decreased by 1,518 million yen compared to the previous year.

Dividend Payout Ratio



Total Payout Ratio



## Consolidated Balance Sheets For FY2018 and FY2017

Assets	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2018	FY2017	FY2018
<b>Current assets</b>			
Cash and deposits	¥ 36,183	¥ 37,702	\$ 325,944
Notes and accounts receivable - trade	69,193	65,422	623,304
Merchandise and finished goods	32,215	29,855	290,199
Work in process	41	115	369
Raw materials and supplies	9,742	7,797	87,758
Accounts receivable - other	2,207	1,831	19,881
Short-term loans receivable	512	494	4,612
Other	2,427	2,422	21,863
Allowance for doubtful accounts	(32)	(34)	(288)
Total current assets	152,490	145,606	1,373,660
<b>Non-current assets</b>			
Property, plant and equipment			
Buildings and structures	65,942	63,985	594,019
Accumulated depreciation and impairment loss	(40,690)	(39,573)	(366,544)
Buildings and structures, net	25,251	24,411	227,466
Machinery, equipment and vehicles	130,490	125,451	1,175,480
Accumulated depreciation and impairment loss	(117,523)	(112,434)	(1,058,670)
Machinery, equipment and vehicles, net	12,966	13,017	116,800
Tools, furniture and fixtures	38,458	37,323	346,437
Accumulated depreciation and impairment loss	(34,385)	(32,261)	(309,747)
Tools, furniture and fixtures, net	4,073	5,061	36,690
Land	9,059	9,047	81,605
Leased assets	—	22	—
Accumulated depreciation	—	(22)	—
Leased assets, net	—	0	—
Construction in progress	1,378	2,936	12,413
Total property, plant and equipment	52,729	54,473	474,993
<b>Intangible assets</b>			
Software	721	775	6,495
Other	796	993	7,171
Total intangible assets	1,517	1,768	13,665
<b>Investments and other assets</b>			
Investment securities	35,229	38,517	317,350
Deferred tax assets	110	132	991
Net defined benefit asset	2,089	2,193	18,818
Other	2,917	3,440	26,277
Allowance for doubtful accounts	(92)	(92)	(829)
Total investments and other assets	40,253	44,191	362,607
Total non-current assets	94,500	100,433	851,275
<b>Total assets</b>	¥246,990	¥246,040	\$2,224,935

Liabilities	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2018	FY2017	FY2018
<b>Current liabilities</b>			
Notes and accounts payable - trade	¥17,809	¥18,579	\$160,427
Short-term loans payable	23,605	23,591	212,639
Current portion of long-term loans payable	1,860	2,554	16,755
Income taxes payable	4,330	5,156	39,005
Provision for bonuses	2,137	2,011	19,251
Provision for directors' bonuses	25	27	225
Other	10,430	10,950	93,955
Total current liabilities	60,198	62,871	542,275
<b>Non-current liabilities</b>			
Long-term loans payable	1,116	2,446	10,053
Deferred tax liabilities	823	1,338	7,414
Provision for business structure improvement	370	516	3,333
Provision for loss on business of subsidiaries and affiliates	309	309	2,784
Net defined benefit liability	152	126	1,369
Other	1,945	2,068	17,521
Total non-current liabilities	4,717	6,804	42,492
<b>Total liabilities</b>	<b>64,916</b>	<b>69,675</b>	<b>584,776</b>
<b>Net assets</b>			
<b>Shareholders' equity</b>			
Capital stock	18,942	18,942	170,633
Capital surplus	13,613	13,613	122,629
Retained earnings	143,200	133,822	1,289,974
Treasury shares	(6,291)	(5,962)	(56,671)
Total shareholders' equity	169,464	160,416	1,526,565
<b>Accumulated other comprehensive income</b>			
Valuation difference on available-for-sale securities	10,634	13,653	95,793
Foreign currency translation adjustment	(11)	125	(99)
Remeasurements of defined benefit plans	258	390	2,324
Total Accumulated other comprehensive income	10,880	14,170	98,009
<b>Non-controlling interests</b>	<b>1,728</b>	<b>1,778</b>	<b>15,566</b>
Total net assets	182,074	176,364	1,640,159
<b>Total liabilities and net assets</b>	<b>¥246,990</b>	<b>¥246,040</b>	<b>\$2,224,935</b>



## Consolidated Statements of Income / Consolidated Statements of Comprehensive Income For FY2018 and FY2017

### Consolidated Statements of Income

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2018	FY2017	FY2018
<b>Net sales</b>	<b>¥204,896</b>	¥193,389	<b>\$1,845,744</b>
<b>Cost of sales</b>	<b>119,911</b>	113,513	<b>1,080,182</b>
<b>Gross profit</b>	<b>84,985</b>	79,876	<b>765,562</b>
<b>Selling, general and administrative expenses</b>	<b>47,893</b>	44,887	<b>431,430</b>
<b>Operating income</b>	<b>37,091</b>	34,988	<b>334,123</b>
<b>Non-operating income</b>			
Interest income	31	26	279
Dividend income	981	817	8,837
Equity in earnings of affiliates	970	1,324	8,738
Other	1,142	768	10,287
Total non-operating income	3,126	2,937	28,160
<b>Non-operating expenses</b>			
Interest expenses	110	126	991
Loss on disposal of non-current assets	630	591	5,675
Plant stop losses	249	270	2,243
Foreign exchange losses	24	460	216
Other	104	240	937
Total non-operating expenses	1,119	1,690	10,080
<b>Ordinary income</b>	<b>39,098</b>	36,235	<b>352,203</b>
<b>Extraordinary income</b>	—	—	—
<b>Extraordinary losses</b>	—	—	—
<b>Income before income taxes and non-controlling interests</b>	<b>39,098</b>	36,235	<b>352,203</b>
Income taxes - current	8,690	9,146	78,281
Income taxes - deferred	893	(214)	8,044
Total income taxes	9,583	8,932	86,326
<b>Net income</b>	<b>29,514</b>	27,302	<b>265,868</b>
Net income attributable to non-controlling interests	141	159	1,270
<b>Net income attributable to owners of parent</b>	<b>¥29,372</b>	¥27,142	<b>\$264,589</b>

### Consolidated Statements of Comprehensive Income

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2018	FY2017	FY2018
<b>Net income</b>	<b>¥29,514</b>	¥27,302	<b>\$265,868</b>
<b>Other comprehensive income</b>			
Valuation difference on available-for-sale securities	(3,018)	3,575	(27,187)
Foreign currency translation adjustment	(159)	(124)	(1,432)
Remeasurements of defined benefit plans, net of tax	(132)	10	(1,189)
Share of other comprehensive income of affiliates accounted for using equity method	(0)	(1)	(0)
Total other comprehensive income	(3,311)	3,460	(29,826)
<b>Comprehensive income</b>	<b>26,203</b>	30,763	<b>236,042</b>
(Comprehensive income attribute to)			
Owners of parent	26,083	30,609	234,961
Non-controlling interests	¥ 119	¥ 153	\$ 1,072

# Consolidated Statements of Changes in Net Assets

## For FY2018

(Millions of Yen)

	Total shareholders' equity					Total shareholders' equity
	Capital stock	Capital surplus	Retained earnings	Treasury shares		
<b>Balance at beginning of current period</b>	¥18,942	¥13,613	¥133,822	(¥5,962)		¥160,416
<b>Changes of items during period</b>						
Dividends of surplus			(11,320)			(11,320)
Net income attributable to owners of parent			29,372			29,372
Share repurchase				(9,004)		(9,004)
Cancellation of treasury shares			(8,674)	8,674		—
Net changes of items other than shareholders' equity						
<b>Total changes of items during period</b>	—	—	9,377	(329)		9,048
<b>Balance at end of current period</b>	¥18,942	¥13,613	¥143,200	(¥6,291)		¥169,464

	Accumulated other comprehensive income					Non-controlling interests	Total net assets
	Valuation difference on available-for-sale securities	Foreign currency translation adjustment	Remeasurements of defined benefit plans	Total accumulated other comprehensive income			
<b>Balance at beginning of current period</b>	¥13,653	¥125	¥390	¥14,170		¥1,778	¥176,364
<b>Changes of items during period</b>							
Dividends of surplus							(11,320)
Net income attributable to owners of parent							29,372
Share repurchase							(9,004)
Cancellation of treasury shares							—
Net changes of items other than shareholders' equity	(3,019)	(137)	(132)	(3,289)	(49)		(3,338)
<b>Total changes of items during period</b>	(3,019)	(137)	(132)	(3,289)	(49)		5,709
<b>Balance at end of current period</b>	¥10,634	(¥11)	¥258	¥10,880	¥1,728		¥182,074

## Consolidated Statements of Changes in Net Assets For FY2017

(Millions of Yen)

	Total shareholders' equity				Total shareholders' equity
	Capital stock	Capital surplus	Retained earnings	Treasury shares	
<b>Balance at beginning of current period</b>	¥18,942	¥13,611	¥126,370	(¥7,587)	¥151,337
<b>Changes of items during period</b>					
Dividends of surplus			(9,063)		(9,063)
Net income attributable to owners of parent			27,142		27,142
Share repurchase				(9,002)	(9,002)
Cancellation of treasury shares			(10,627)	10,627	—
Change in ownership interest of parent due to transactions with non-controlling interests		2			2
Net changes of items other than shareholders' equity					
<b>Total changes of items during period</b>	—	2	7,452	1,624	9,078
<b>Balance at end of current period</b>	¥18,942	¥13,613	¥133,822	(¥5,962)	¥160,416

	Accumulated other comprehensive income				Non-controlling interests	Total net assets
	Valuation difference on available-for-sale securities	Foreign currency translation adjustment	Remeasurements of defined benefit plans	Total accumulated other comprehensive income		
<b>Balance at beginning of current period</b>	¥10,079	¥243	¥380	¥10,703	¥1,666	¥163,707
<b>Changes of items during period</b>						
Dividends of surplus						(9,063)
Net income attributable to owners of parent						27,142
Share repurchase						(9,002)
Cancellation of treasury shares						—
Change in ownership interest of parent due to transactions with non-controlling interests						2
Net changes of items other than shareholders' equity	3,574	(118)	10	3,466	111	3,578
<b>Total changes of items during period</b>	3,574	(118)	10	3,466	111	12,657
<b>Balance at end of current period</b>	¥13,653	¥125	¥390	¥14,170	¥1,778	¥176,364

## For FY2018

(Thousands of  
U.S. dollars)

	Total shareholders' equity				Total shareholders' equity
	Capital stock	Capital surplus	Retained earnings	Treasury shares	
<b>Balance at beginning of current period</b>	\$170,633	\$122,629	\$1,205,495	(\$53,707)	\$1,445,059
<b>Changes of items during period</b>					
Dividends of surplus			(101,973)		(101,973)
Net income attributable to owners of parent			264,589		264,589
Share repurchase				(81,110)	(81,110)
Cancellation of treasury shares			(78,137)	78,137	—
Net changes of items other than shareholders' equity					
<b>Total changes of items during period</b>	—	—	84,470	(2,964)	81,506
<b>Balance at end of current period</b>	\$170,633	\$122,629	\$1,289,974	(\$56,671)	\$1,526,565

	Accumulated other comprehensive income					Total net assets
	Valuation difference on available-for-sale securities	Foreign currency translation adjustment	Remeasurements of defined benefit plans	Total accumulated other comprehensive income	Non-controlling interests	
<b>Balance at beginning of current period</b>	\$122,989	\$1,126	\$3,513	\$127,646	\$16,017	\$1,588,722
<b>Changes of items during period</b>						
Dividends of surplus						(101,973)
Net income attributable to owners of parent						264,589
Share repurchase						(81,110)
Cancellation of treasury shares						—
Net changes of items other than shareholders' equity	(27,196)	(1,234)	(1,189)	(29,628)	(441)	(30,069)
<b>Total changes of items during period</b>	(27,196)	(1,234)	(1,189)	(29,628)	(441)	51,428
<b>Balance at end of current period</b>	\$95,793	(\$99)	\$2,324	\$98,009	\$15,566	\$1,640,159

## Consolidated Statements of Cash Flows

### For FY2018 and FY2017

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2018	FY2017	FY2018
<b>Cash flows from operating activities</b>			
Income before income taxes and non-controlling interests	¥39,098	¥36,235	\$352,203
Depreciation and amortization	10,915	10,510	98,324
Interest and dividend income	(1,013)	(844)	(9,125)
Interest expenses	110	126	991
Loss (gain) on disposal of non-current assets	630	591	5,675
Decrease (increase) in notes and accounts receivable - trade	(3,877)	(5,266)	(34,925)
Decrease (increase) in inventories	(4,304)	(1,309)	(38,771)
Increase (decrease) in notes and accounts payable - trade	(671)	3,494	(6,045)
Other	(913)	(328)	(8,224)
Subtotal	39,974	43,209	360,094
Interest and dividend income received	1,633	1,881	14,710
Interest expenses paid	(111)	(125)	(1,000)
Income taxes paid	(9,426)	(7,273)	(84,911)
Net cash provided by (used in) operating activities	32,070	37,691	288,893
<b>Cash flows from investing activities</b>			
Purchase of investment securities	(910)	(759)	(8,197)
Proceeds from sales of investment securities	450	65	4,054
Purchase of property, plant and equipment	(9,747)	(13,768)	(87,803)
Payments for retirement of property, plant and equipment	(525)	(405)	(4,729)
Purchase of intangible assets	(192)	(585)	(1,730)
Net decrease (increase) in short-term loans receivable	(2)	546	(18)
Purchase of long-term prepaid expenses	(46)	(67)	(414)
Other	90	(270)	811
Net cash provided by (used in) investing activities	(10,884)	(15,244)	(98,045)
<b>Cash flows from financing activities</b>			
Net increase (decrease) in short-term loans payable	(46)	501	(414)
Proceeds from long-term loans payable	530	420	4,774
Repayments of long-term loans payable	(2,554)	(3,070)	(23,007)
Cash dividends paid	(11,320)	(9,063)	(101,973)
Dividends paid to non-controlling interests	(167)	(39)	(1,504)
Share repurchase	(9,004)	(9,002)	(81,110)
Other	(0)	(14)	(0)
Net cash provided by (used in) financing activities	(22,563)	(20,268)	(203,252)
<b>Effect of exchange rate change on cash and cash equivalents</b>	(141)	(177)	(1,270)
<b>Net increase (decrease) in cash and cash equivalents</b>	(1,518)	2,000	(13,674)
<b>Cash and cash equivalents at the beginning of period</b>	37,702	35,701	339,627
<b>Cash and cash equivalents at end of period</b>	¥36,183	¥37,702	\$325,944



# Notes to Consolidated Financial Statements

## 1. Basis for presenting Consolidated Financial Statements

The accompanying consolidated financial statements have been prepared in accordance with the provisions set forth in the Japanese Financial Instruments and Exchange Act, the related accounting regulations, and the accounting principles generally accepted in Japan ("J-GAAP"), which differ in certain aspects from the application and disclosure requirements of the accounting principles generally accepted in the United States of America ("US-GAAP") and International Financial Reporting Standards ("IFRS").

In preparing these consolidated financial statements, certain reclassification and rearrangements have been made to the consolidated financial statements issued in Japan in order to present them in a form that is more familiar to readers in other countries.

## 2. Summary of Significant Accounting Policies

### a. Consolidation

The consolidated financial statements as of March 31, 2019 include the account of Nissan Chemical Corporation. (the "Company") and its eight main (eight in FY2017) subsidiaries (together, the "Companies"). The Company does not consolidate other subsidiaries due to their immateriality in terms of consolidated total assets, net sales, net income, and retained earnings.

Under the control or influence concept, those companies in which the Company, either directly or indirectly, is able to exercise control over operations are fully consolidated. Those companies over which the Company has the ability to exercise significant influence are accounted for by the equity method.

Investments in two affiliated companies (two in FY2017) are accounted for by the equity method.

The assets and liabilities of the newly consolidated subsidiaries are stated at fair value as of the respective dates on which they were acquired.

All significant inter-company balances and transactions have been eliminated in consolidation.

All material unrealized profits included in assets resulting from transactions within the Companies are eliminated.

### b. Securities

The Company's marketable securities are reported at fair value. Unrealized holding gains and losses, net of the related tax effect, on marketable securities are excluded from earnings. Instead, they are reported as a separate component of other comprehensive income until realized. Realized gains and losses for securities are included in earnings, and are derived using the moving average method for determining the cost of securities sold.

Non-marketable securities in companies over which the Company is incapable of exercising significant influence are stated at cost and reviewed periodically for impairment.

### c. Inventories

Inventories are stated at the lower of cost or net realizable value. The cost is determined by the average method.

### d. Property, Plant and Equipment (excluding Leased Assets)

Property, plant and equipment are stated at cost. In general, the depreciation of property, plant and equipment is computed by the declining-balance method over the estimated useful lives of these assets.

The estimated useful life ranges are two years to fifty years for buildings and structures, and two years to twelve years for machinery and equipment.

### e. Goodwill and other Intangible Assets

Goodwill is amortized by the straight-line method within 20 years. Other intangible assets are also amortized the using straight-line method.

The most typical intangible asset is Software, and its useful life is five years.

### f. Leased Assets

Leased assets arising from finance lease transactions which do not transfer ownership to the lessee are depreciated to a residual value of zero by the straight-line method, using the contract term as the useful life.

### g. Allowance for Doubtful Accounts

Allowance for doubtful accounts is the Companies' best estimate for the amount of probable credit losses in the Companies' existing trade receivables.

An additional reserve for individual receivable is recorded when the Company become aware of a customer's inability to meet its financial obligations, such as when a customer files for bankruptcy or when the its operating results or financial position deteriorates.

If the customer's circumstances change, estimates of the recoverability of receivables are further adjusted.

### h. Provision for Bonuses

The Companies provide accrued bonuses for employees based on the estimated amounts to be paid for the fiscal year.

### i. Provision for Directors' Bonuses

The Companies provide accrued bonuses for members of the Board of Directors based on the estimated amounts to be paid for the fiscal year.

### j. Provision for Business Structure Improvement

The Company provides a reserve at the estimated amount to cover the expenses and losses to be incurred in association with structural improvement.

### k. Provision for Loss on Business of Subsidiaries and Affiliates

The Company provides a reserve at the estimated amount to cover the losses on business of subsidiaries and affiliates in consideration of their financial position.

### I. Provision for Retirement Benefits

The Company has a defined benefit plan and a retirement plan that substantially covers all of its employees.

The method for calculating the estimated amount of all retirement benefits to be paid at future retirement dates is based on the benefit formula.

Actuarial gains and losses are primarily amortized using the declining-balance method over the average of the estimated remaining service years (16 years) commencing from the period which the gains and losses occurred.

Certain consolidated subsidiaries use a simplified method for calculating retirement benefits.

In this method, the retirement benefit obligation is the same amount as the necessary payment related to retirement benefits.

### m. Translation of Foreign Currency

The assets and liabilities of the Company's subsidiaries located outside Japan are translated into Japanese yen at the exchange rate in effect on the balance sheet date. Revenue and expense items are translated at the prevailing average exchange rates for the year. Gains and losses resulting from foreign currency transactions are included in other income (deductions), and those resulting from the translation of financial statements are excluded from the statements of income. Instead, they are accumulated in net assets as a component of accumulated other comprehensive income (loss).

### n. Derivatives and Hedge Accounting

The Company enters into interest rate swap contracts to hedge the risk of changes in interest rates over borrowings.

Derivatives are carried at fair value with all changes in unrealized gains and losses charged to income, except for those which meet the criteria for deferral hedge accounting under which unrealized gains or losses, net of the applicable income taxes, are reported as components of accumulated other comprehensive income (loss).

If interest rates swap contracts meet certain criteria, the net amount to be paid or received under the interest rate swap contract is added to or deducted from the interest on the assets or liabilities for which the swap contract is executed.

### o. Cash and Cash Equivalent

The Companies consider cash equivalents include all highly fluid investments, which have been purchased with original maturities of three months or less.

### 3. U.S. dollar Amounts

The accompanying consolidated financial statements are expressed in Japanese yen as of and for the year ended March 31, 2019 after being converted from the currency of the country in which the Company operates. The translation of Japanese yen amounts to United States dollar amounts is included solely for the convenience of the readers outside Japan, and has been made at the rate of ¥111.01 to US \$1, which is the approximate closing exchange rate reported by the Tokyo Foreign Exchange Market on March 31, 2019. This translation should not be construed to indicate that the Japanese yen amounts shown can be converted to United States dollars at the above rate.

### 4. Unapplied Accounting Standards

Accounting Standards Board of Japan released "Accounting Standard for Revenue Recognition" and "Implementation Guidance on Accounting Standard for Revenue Recognition" on March 30, 2018.

The above standard and guidance are scheduled to be applied in the fiscal year ending in March 31, 2022.

The impact on consolidated financial statements is under evaluation as well.

### 5. Reclassifications

The company has applied "Partial Amendments to Accounting Standard for Tax Effect Accounting" (Statement No.28 issued by the Accounting Standards Board of Japan on February 16, 2018) from the beginning of the current financial year.

Accordingly, "deferred tax assets" and "deferred tax liabilities" are reclassified and included in the "investments and other assets" section and the "non-current liabilities" section, respectively.

As a result, 3,019 million yen of "deferred tax assets (current assets)" and 2,887 million yen of "deferred tax liabilities (non-current liabilities)" are reclassified as 132 million yen of "deferred tax assets" classified as "investments and other assets".

In addition, 115 million yen of "deferred tax assets (investments and other assets)" and 1,454 million yen of "deferred tax liabilities (non-current liabilities)" are reclassified as 1,338 million yen of "deferred tax liabilities" classified as "non-current liabilities".

### 6. Collateral Assets and Liabilities

Collateral assets and liabilities as of FY2018 and FY2017 were as follows:

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2018	FY2017	FY2018
Investment securities	¥142	¥122	\$1,279
Accounts payable	¥369	¥340	\$3,324

### 7. Research and Development Expenses

Research and development expenses included in selling, general and administrative expenses for FY2018 and FY2017 were as follows:

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2018	FY2017	FY2018
	¥17,751	¥17,228	\$159,905

## 8. Comprehensive Income

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2018	FY2017	FY2018
<b>Valuation difference on available-for-sale securities:</b>			
Gains (losses) arising during the year	(¥4,054)	¥5,200	(\$36,519)
Reclassification adjustment	(296)	(29)	(2,666)
Amount before tax effect	(4,350)	(5,170)	(39,186)
Tax effect	1,332	(1,595)	11,999
Valuation difference on available-for-sale securities, net of tax	(3,018)	3,575	(27,187)

### Foreign currency translation adjustment:

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2018	FY2017	FY2018
Gains (losses) arising during the year	(159)	(124)	(1,432)
Reclassification adjustment	—	—	—
Amount before tax effect	(159)	(124)	(1,432)
Tax effect	—	—	—
Foreign currency translation adjustment, net of tax	(159)	(124)	(1,432)

### Remeasurements of defined benefit plans:

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2018	FY2017	FY2018
Gains (losses) arising during the year	(114)	88	(1,027)
Reclassification adjustment	(75)	(73)	(676)
Amount before tax effect	(190)	15	(1,712)
Tax effect	57	(4)	513
Remeasurements of defined benefit plans, net of tax	(132)	10	(1,189)

### Share of other comprehensive income of affiliates accounted for using equity methods:

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2018	FY2017	FY2018
Gains (losses) arising during the year	(0)	(1)	(0)
Total other comprehensive income	(¥3,311)	¥3,460	(\$29,826)

## 9. Common Shares

### (1) Dividends

Cash dividends charged to retained earnings for the years ended March 31, 2019 and 2018 represent the dividends paid out during those years. The accompanying consolidated financial statements do not include any provisions for a dividend approved by the Annual Shareholders Meeting of 42 yen per share with an aggregate 6,206 million yen for the year ended March 31, 2019.

### (2) Retained Earnings

Retained earnings on a consolidated basis consist of legal reserve and retained earnings. In accordance with provisions of the Companies Act of Japan, the Company has provided a legal reserve as an appropriation of retained earnings. The Code states that while neither legal capital surplus nor legal retained earnings are available for dividends, both may be used to reduce or eliminate a deficit by a resolution of the shareholders' meeting, or may be transferred to stated capital common stock by a resolution of the Board of Directors. Legal reserve in the accompanying consolidated financial statement includes only that of the Company. Retained earnings of the Company and its consolidated subsidiaries include a certain special reserve for the purpose of obtaining tax benefits in accordance with the Special Taxation Law of Japan.

## 10. Investment securities

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2018	FY2017	FY2018
Equity securities	¥25,620	¥30,022	\$230,790
Unlisted securities of affiliates	7,118	6,812	64,120
Unlisted securities	2,490	1,682	22,430
	¥35,229	¥38,517	\$317,350

## 11. Short-term Debt and Long-term Debt

Short-term debt consisting of an unsecured bank overdraft as of March 31, 2019 was 23,605 million yen.

The weighted average interest rate on short-term debt outstanding as of March 31, 2019 was 0.75%.

The weighted average interest rate on long-term debt outstanding as of March 31, 2019 was 0.56%.

The weighted average interest rate on the current portion of long-term debt outstanding as of March 31, 2019 was 0.81%.

Long-term debt as of FY2018 and FY2017 were as follows:

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2018	FY2017	FY2018
Long-term debt	¥2,976	¥5,000	\$26,808
Less current portion	(1,860)	(2,554)	(16,755)
	¥1,116	¥2,446	\$10,053

Long-term debt payments due after FY2019 were as follows:

Year ending March 31	(Millions of Yen)	(Thousands of U.S. dollars)
FY2020	¥520	\$4,684
FY2021	300	2,702
FY2022	190	1,712
FY2023 and thereafter	106	955
	¥1,116	\$10,053

## 12. Retirement Benefits

(1) The liability for retirement benefits as of FY2018 and FY2017 were as follows:

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2018	FY2017	FY2018
Retirement benefit obligation	¥12,571	¥12,156	\$113,242
Plan asset	(14,661)	(14,349)	(132,069)
	(2,089)	(2,193)	(18,818)
Unfunded retirement benefit obligation	152	126	1,369
Net retirement benefit obligation	(1,936)	(2,067)	(17,440)
Net defined benefit liability	152	126	1,369
Net defined benefit asset	(2,089)	(2,193)	(18,818)
Net retirement benefit obligation	(¥1,936)	(¥2,067)	(\$17,440)

(2) Actuarial assumptions

The principal actuarial assumptions as of FY2018 and FY2017 were as follows:

	FY2018	FY2017
Discount rate	0.8%	0.8%
Long-term expected rate of return	2.0%	2.0%
Expected rate of salary increase (forecast)	3.6 to 9.0%	3.6 to 9.0%

(Note) Expected rate of salary increase is calculated based on our point system.

## 13. Income Taxes

The Company is subject to a number of taxes based on income. The statutory income tax rates were approximately 30.62% for the year ended March 31, 2019 and 30.86% for the year ended March 31, 2018.

The tax effects on significant temporary differences which resulted in deferred tax assets and liabilities as of FY2018 and FY2017 were as follows:

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2018	FY2017	FY2018
Deferred tax assets:			
Inventory	¥716	¥672	\$6,450
Provision for bonuses	660	620	5,945
Prepaid consignment research expenses	585	541	5,270
Unrealized gain on inventories	433	407	3,901
Tax effect on investment in subsidiary to be liquidated	—	1,124	—
Other	2,617	2,555	23,574
Gross deferred tax assets	5,014	5,921	45,167
Less: Valuation allowance	(39)	(49)	(351)
Total deferred tax assets	4,975	5,871	44,816
Deferred tax liabilities:			
Unrealized gain on securities	(4,832)	(6,107)	(43,528)
Net defined benefit asset	(594)	(645)	(5,351)
Reserve for advanced depreciation of non-current assets	(260)	(268)	(2,342)
Other	(1)	(57)	(9)
Total deferred tax liabilities	(5,688)	(7,078)	(51,239)
Net deferred tax assets	(¥712)	(¥1,206)	(\$6,414)

The differences between the statutory tax rate and the effective tax rate for the years ended FY2018 and FY2017 were as follows:

	FY2018	FY2017
Statutory tax rate	30.62%	30.86%
(Reconciliation)		
Elimination of intercompany dividend income	2.32%	2.51%
Entertainment and other permanently non-deductible expense	0.38	0.41
Difference of tax rate for foreign consolidated subsidiaries	(0.50)	(0.47)
Equity in earnings of affiliates	(0.76)	(1.13)
Dividend and other items excluded permanently from taxable income	(2.42)	(2.64)
Tax credit	(5.00)	(5.26)
Other, net	(0.14)	0.37
Effective tax rate	24.51%	24.65%

## 14. Segment Information

### (1) General Information about reportable segments

In regard to reportable segments, the Company is able to obtain discrete financial data from its component units.

Accordingly, its segments are subject to regular review to help the Board of Directors decide how to allocate managerial resources and evaluate business performance.

Divisions by products and services are located at headquarters. Each division works out a comprehensive strategy applicable to their products and services and carries out their business activities.

The Company consists of segments based on the following divisions:

Segment	Main Products
Chemicals	Basic chemicals (melamine, sulfuric acid, nitric acid, ammonia, etc.) Fine chemicals (epoxy compound for LED sealants, solder resist and painting, flame retardants, chlorinated cyanuric acid for sterilizing, etc.)
Performance Materials	Display materials (LCD alignment coating, etc.) Semiconductor materials (bottom anti-reflective coating for semiconductors, etc.) Inorganic materials (hard coating materials, electronic information materials, polishing materials, etc.)
Agricultural Chemicals	Agrochemicals (herbicides, insecticides, fungicides, combination fungicide and insecticide, and plant growth regulators) Animal health products
Pharmaceuticals	LIVALO® (anti-cholesterol drugs), etc. Finetech® (custom chemicals and process researching services for pharmaceutical companies)
Trading	Trading, etc.
Others	Transportation, landscaping, engineering, fertilizer, etc.

### (2) Basis for the measurement of reported segment income or loss, segment assets, and other material items

The accounting policies for the reportable segments are consistent with the Company's accounting policies used in the preparation of its consolidated financial statements.

Intersegment sales and income (loss) are recognized based on current market prices.

### (3) Information on sales, income (loss), assets, and other item amounts by reportable segment

FY2017	Millions of Yen							Adjustment (Note)	Consolidated Total
	Chemicals	Performance Materials	Agricultural Chemicals	Pharmaceuticals	Trading	Others			
Net sales									
Sales to outside customers	¥25,546	¥51,973	¥54,262	¥7,493	¥44,474	¥ 9,638	—	—	¥193,389
Intersegment sales	9,390	6,789	3,876	26	15,012	11,822	(46,917)	—	—
Total sales	34,937	58,762	58,138	7,520	59,486	21,461	(46,917)	—	193,389
Segment income (loss)	3,410	14,200	16,370	1,233	1,826	612	(2,665)	—	34,988
Segment assets	26,976	52,888	56,620	9,118	23,261	9,588	67,585	—	246,040
Other items									
Depreciation and amortization	1,733	5,925	1,416	713	52	319	347	—	10,508
Amortization of goodwill	1	—	—	—	—	—	—	—	1
Increase of property, plant and equipment, and intangible assets	¥ 2,594	¥ 7,209	¥ 2,541	¥ 679	¥ 23	¥ 304	¥ 341	—	¥ 13,694

Notes: The adjustments are as follows:

- (1) The (2,665) million yen adjustment in segment income includes (254) million yen in intersegment eliminations, and (2,410) million yen corporate expenses not attributable to any reportable segment. The corporate expenses are mainly group administrative expenses which do not belong to segments.
- (2) The 67,585 million yen adjustment in segment assets includes (8,200) million yen in intersegment eliminations and 75,786 million yen in corporate assets not attributable to any reportable segment. The corporate assets are mainly group administrative assets which do not belong to segments.
- (3) The 347 million yen adjustment in depreciation and amortization is corporate expenses.
- (4) The 341 million yen adjustment in increase of property, plant and equipment and intangible assets is corporate assets. The corporate assets are mainly group administrative assets which do not belong to segments.



FY2018	Millions of Yen							Consolidated Total
	Chemicals	Performance Materials	Agricultural Chemicals	Pharmaceuticals	Trading	Others	Adjustment (Note)	
Net sales								
Sales to outside customers	¥25,991	¥55,655	¥57,513	¥6,968	¥48,562	¥10,188	¥ 16	¥204,896
Intersegment sales	9,660	7,376	5,211	40	19,317	14,421	(56,028)	—
Total sales	35,651	63,031	62,724	7,009	67,880	24,610	(56,011)	204,896
Segment income (loss)	3,046	14,966	18,351	1,000	2,037	923	(3,234)	37,091
Segment assets	28,669	51,256	61,818	9,063	25,507	11,479	59,196	246,990
Other items								
Depreciation and amortization	1,805	6,059	1,680	645	49	322	350	10,913
Amortization of goodwill	1	—	—	—	—	—	—	1
Increase of property, plant and equipment, and intangible assets	¥ 2,021	¥ 3,246	¥ 3,326	¥ 502	¥ 122	¥ 438	¥ 280	¥ 9,938

Notes: The adjustments are as follows:

- (1) The (3,234) million yen adjustment in segment income includes (405) million yen in intersegment eliminations, 16 million yen sales not attributable to any reporting segment, and (2,845) million yen corporate expenses not attributable to any reportable segment.  
The corporate expenses are mainly group administrative expenses which do not belong to segments.
- (2) The 59,196 million yen adjustment in segment assets includes (11,968) million yen in intersegment eliminations and 71,165 million yen in corporate assets not attributable to any reportable segment.  
The corporate assets are mainly group administrative assets which do not belong to segments.
- (3) The 350 million yen adjustment in depreciation and amortization is corporate expenses.
- (4) The 280 million yen adjustment in increase of property, plant and equipment and intangible assets is corporate assets. The corporate assets are mainly group administrative assets which do not belong to segments.

FY2018	Thousands of U.S. dollars							Consolidated Total
	Chemicals	Performance Materials	Agricultural Chemicals	Pharmaceuticals	Trading	Others	Adjustment (Note)	
Net sales								
Sales to outside customers	\$234,132	\$501,351	\$518,088	\$62,769	\$437,456	\$ 91,776	\$ 144	\$1,845,744
Intersegment sales	87,019	66,444	46,942	360	174,011	129,907	(504,711)	—
Total sales	321,151	567,796	565,030	63,138	611,476	221,692	(504,558)	1,845,744
Segment income (loss)	27,439	134,817	165,309	9,008	18,350	8,315	(29,133)	334,123
Segment assets	258,256	461,724	556,869	81,641	229,772	103,405	533,249	2,224,935
Other items								
Depreciation and amortization	16,260	54,581	15,134	5,810	441	2,901	3,153	98,306
Amortization of goodwill	9	—	—	—	—	—	—	9
Increase of property, plant and equipment, and intangible assets	\$ 18,206	\$ 29,241	\$ 29,961	\$ 4,522	\$ 1,099	\$ 3,946	\$ 2,522	\$ 89,523

Overseas operations, which represent sales to customers outside Japan for FY2018 and FY2017 were as follows:

FY2017	Millions of Yen				Consolidated Total
	Japan	Korea	Other Asia	Europe and the United States	
Net sales	¥104,523	¥20,218	¥ 39,339	¥ 29,308	¥ 193,389
FY2018	Millions of Yen				Consolidated Total
	Japan	Korea	Other Asia	Europe and the United States	
Net sales	¥107,131	¥22,341	¥ 43,354	¥ 32,068	¥ 204,896
FY2018	Thousands of U.S. dollars				Consolidated Total
	Japan	Korea	Other Asia	Europe and the United States	
Net sales	\$965,057	\$201,252	\$390,541	\$288,875	\$1,845,744

## 15. Amounts per Share

Net income per share is based on the weighted average number of shares of common stock outstanding during the year.

Cash dividends per share attributable to the period represent dividends declared as applicable to the year.

Amounts per share of net income and cash dividends for FY2018 and FY2017 were as follows:

	(Yen)		(U.S. dollars)
	FY2018	FY2017	FY2018
Net income	¥197.67	¥180.30	\$1.78
Cash dividends	¥ 82.00	¥ 68.00	\$0.74

### **Independent Auditor's Report**

To the Board of Directors of  
Nissan Chemical Corporation

We have audited the accompanying consolidated financial statements of Nissan Chemical Corporation and consolidated subsidiaries, which comprise the consolidated balance sheets as of March 31, 2019, and the related consolidated statements of income, comprehensive income, changes in net assets, and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information, all expressed in Japanese Yen.

#### **Management's Responsibility for the Consolidated Financial Statements**

Management is responsible for the preparation and fair presentation of these consolidated financial statements in conformity with accounting principles generally accepted in Japan, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatements, whether due to fraud or error.

#### **Auditor's Responsibility**

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in conformity with auditing standards generally accepted in Japan. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

#### **Opinion**

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of Nissan Chemical Corporation and its consolidated subsidiaries as of March 31, 2019, and the consolidated results of their operations and their cash flows for the year then ended in conformity with accounting principles generally accepted in Japan.

#### **Convenience Translation**

The U.S. dollar amounts in the accompanying consolidated financial statements with respect to the year ended March 31, 2019 are presented solely for convenience. Our audit also included the translation of yen amounts into U.S. dollar amounts and, in our opinion, such translation has been made on the basis described in Note 3 to the consolidated financial statements.

Yaesu Audit & Co.  
Tokyo, Japan  
June 26, 2019



## Domestic Bases

### Nagoya Plant

This plant faces the Port of Nagoya. Here we manufacture sulfuric acid and high-quality urea aqueous solution, among other products.



### Toyama Plant

This plant is located in the center of Toyama Plain. Here we manufacture various groups of products, such as basic chemicals, environmental chemicals, and performance materials.



### Onoda Plant

This plant is located in Sanyo-Onoda City, Yamaguchi. It is our base for the production of fine organic synthetic compounds, such as agrochemicals and pharmaceuticals.



### Saitama Plant

This plant is located in northern Saitama. Here we manufacture agricultural formulations.



### Sodegaura Plant

These plants are located in the industrial area in Sodegaura and Ichihara City, Chiba. These are our bases for the production of performance materials.



# List of Offices, Plants and Laboratories

## Offices

### Head Office

5-1, Nihonbashi 2-Chome, Chuo-ku, Tokyo 103-6119  
Tel: +81-3-4463-8111

### Sendai Sales Office

Greenwood Sendai Ichibancho Building 2-7-12, Ichibancho,  
Aoba-ku, Sendai 980-0811  
Tel: +81-22-266-4311

### Osaka Sales Office

Osaka Daiichi Seimei Building 1-8-17, Umeda, Kita-ku, Osaka  
530-0001  
Tel: +81-6-6346-7200

### Sapporo Sales Office

Maruito Sapporo Building 1-1, Kita-Nijyo-Nishi,  
Chuo-ku, Sapporo 060-0002  
Tel: +81-11-251-0261

### Nagoya Sales Office

Nagoya KS Building 3-1-18, Taiko, Nakamura-  
ku, Nagoya 453-0801  
Tel: +81-52-452-8623

### Fukuoka Sales Office

JPR Hakata Building 1-4-4, Hakata Ekimae,  
Hakata-ku, Fukuoka 812-0011  
Tel: +81-92-432-3421

## Plants

### Sodegaura Plant

11-1, Kitasode, Sodegaura, Chiba 299-0266  
Tel: +81-438-63-2341

### Saitama Plant

235-1, Aza Nishidai, Oaza Jimbohara-machi, Kamisato-machi,  
Kodama-gun, Saitama 369-0305  
Tel: +81-495-34-2810

### Nagoya Plant

7, Tsukiji-cho, Minato-ku, Nagoya 455-0045  
Tel: +81-52-661-1676

### Sodegaura Plant Goi Works

12-17, Goiminamikaigan, Ichihara, Chiba 290-0045  
Tel: +81-436-22-2110

### Toyama Plant

635, Sasakura, Fuchu-machi, Toyama 939-2792  
Tel: +81-76-433-9602

### Onoda Plant

6903-1, Oaza Onoda, Sanyo-Onoda, Yamaguchi  
756-0093  
Tel: +81-836-83-2800

## Laboratories

### Chemical Research Laboratories

10-1, Tsuboi-Nishi 2-chome, Funabashi, Chiba 274-8507  
Tel: +81-47-465-1112

### Biological Research Laboratories

1470, Shiraoka, Shiraoka, Saitama 349-0294  
Tel: +81-480-92-2513

### Materials Research Laboratories

488-6, Suzumi-cho, Funabashi, Chiba 274-0052  
Tel: +81-47-419-3810  
11-1, Kitasode, Sodegaura, Chiba 299-0266  
Tel: +81-438-64-2881  
635, Sasakura, Fuchu-machi, Toyama 939-2792  
Tel: +81-76-465-7133

## Group Companies

## Japan

### Nissei Corporation

1-10-5, Nihonbashihon-cho, Chuo-ku, Tokyo 103-0023  
Tel: +81-3-3241-2548  
■ Sales of chemical products and insurance, and real estate  
business

### Nissan Green & Landscape Co., Ltd.

3-16-9, Uchikanda, Chiyoda-ku, Tokyo 101-0047  
Tel: +81-3-3526-4031  
■ Landscaping and civil engineering

### Nihon Hiryo Co., Ltd.

1-10-5, Nihonbashihon-cho, Chuo-ku, Tokyo 103-0023  
Tel: +81-3-3241-4231  
■ Fertilizers and agrochemicals

### Sun Agro Co., Ltd.

1-10-5, Nihonbashihon-cho, Chuo-ku, Tokyo 103-0023  
Tel: +81-3-3510-3601  
■ Fertilizers and agrochemicals

### HOKKAIDO SUN AGRO CO., LTD.

9-23, Kitahama-cho, Hakodate, Hokkaido, 040-0078  
Tel: +81-138-41-1251  
■ Agrochemicals

### Nissan Butsuryu Co., Ltd.

1-10-5, Nihonbashihon-cho, Chuo-ku,  
Tokyo 103-0023  
Tel: +81-3-5255-6901  
■ Transportation

### Nissan Engineering, Ltd.

634-1, Sasakura, Fuchu-machi, Toyama 939-2753  
Tel: +81-76-465-5711  
■ Plant engineering services

### Environmental Technical Laboratories, Ltd.

2-11-17, Kohoku, Adachi-ku, Tokyo 123-0872  
Tel: +81-3-3898-6643  
■ Environmental analysis

### Clariant Catalysts (Japan) K.K.

2-28-8, Honkomagome, Bunkyo-ku, Tokyo 113-0021  
Tel: +81-3-5977-7300  
■ Catalysts for petrochemical and petroleum products

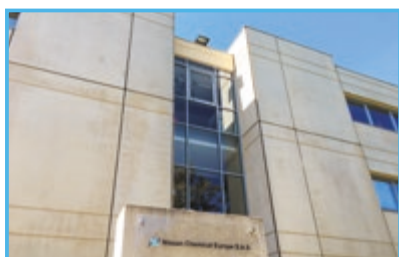
## Overseas Bases

(As of March 31, 2019)

### France

#### Nissan Chemical Europe S.A.S.

Parc d'Affaires de Crécy -  
10A rue de la Voie Lactée  
69370 Saint Didier au Mont d'Or, France  
Tel: +33-4-37-64-40-20  
■ Sales of agrochemicals



### America

Nissan Chemical America Corporation  
10333 Richmond Avenue, Suite 1100,  
Houston, Texas 77042, U.S.A.

Tel: +1-713-532-4745  
■ Production and sales of inorganic materials



### India

#### Nissan Agro Tech India PVT. LTD.

502-504, 5th Floor, Tower B, Spazedge  
Commercial Complex, Sector-47, Sohna Road,  
Gurgaon-122002, Haryana, India  
Tel: +91-124-4214446/47

■ Sales support and promotional services for  
agrochemicals

### China

#### Nissan Chemical Product (Shanghai) Co., Ltd.

Rm.3210 Office Tower 1, Raffles City Changning, No.1133  
Changning Road, Changning District, Shanghai  
200051 PRC

Tel: +86-21-6236-8300

■ Sales support and promotional services for agrochemicals

#### Nissan Chemical Materials Research (Suzhou) Co., Ltd.

Room101, NW-10, Nanopolis Suzhou 99 Jinji Lake Avenue,  
Suzhou Industrial Park, China

Tel: +86-512-6273-2080

■ R&D, sales support and promotional services for  
performance materials

### Taiwan

#### Nissan Chemical Taiwan Co., Ltd.

5F., No.67, Luke 2nd Rd., Luzhu Dist., Kaohsiung City  
821, Taiwan (R.O.C.)

Tel: +886-7-695-5252

■ R&D and sales support for display and semiconductor  
materials

### Brazil

#### Nissan Chemical Do Brasil

Avenida Gisele Constantino, 1850,  
Salas 1518 a 1520, Parque Bela Vista,  
Votorantim, SP, 18110-650, Brasil

Tel: +55-15-3019-8772

■ Sales support and promotional services for  
agrochemicals



### Korea

#### NCK Co., Ltd.

127, Chupalsandan-ro, Paengseong-eup,  
Pyeongtaek-si,  
Gyeonggi-do, 17998, KOREA

Tel: +82-31-691-7044

■ Production and sales of display and  
semiconductor materials

#### Nissan Chemical Agro Korea Ltd.

Room 2001, 74, Sejong-daero, Jung-gu, Seoul  
04526, Korea

Tel: +82-2-774-6470

■ Sales of agrochemicals



## Corporate Profile

(As of July 1, 2019)

Corporate Name	Nissan Chemical Corporation
Head Office	5-1, Nihonbashi 2-Chome, Chuo-ku, Tokyo 103-6119, Japan TEL: +81-3-4463-8111
Founded	1887
Capital Stock	18,942 million yen
Number of Employees	Consolidated: 2,583 (As of March 31, 2019)
Stock Listing	Tokyo Stock Exchange
Transfer Agent	Sumitomo Mitsui Trust Bank, Limited 4-1, Marunouchi 1-chome, Chiyoda-ku, Tokyo 100-8233, Japan

## Share Information

(As of March 31, 2019)

Total Number of Authorized Shares	360,000,000
Shares of Common Share Issued	149,000,000
Shareholders	10,969

Major shareholders (Top ten companies)	Number of shares held (1,000 shares)	Investment (%)
The Master Trust Bank of Japan, Ltd. (Trust Account)	26,203	17.7
Japan Trustee Services Bank, Ltd. (Trust Account)	11,678	7.9
Trust & Custody Services Bank, Ltd. as trustee for the Mizuho Trust & Banking Co., Ltd. Retirement Benefit Trust	7,418	5.0
The Norinchukin Bank	4,800	3.2
Nissan Chemical Customer Shareholders Association	3,890	2.6
Trust & Custody Services Bank, Ltd. (Securities Investment Trust Account)	3,288	2.2
Japan Trustee Services Bank, Ltd. (Trust Account 5)	2,360	1.6
JP Morgan Chase Bank 385151	2,147	1.5
Ono Pharmaceutical Co., Ltd.	1,983	1.3
STATE STREET BANK WEST CLIENT – TREATY 505234	1,958	1.3

(Note) Investment percentages are calculated excluding treasury shares.

	Financial institutions	Securities companies	Other domestic companies	Overseas investors	Individuals / Others	Treasury shares
Percentage of share held (%)	50.9	4.1	10.7	22.6	10.9	0.8

