

# ANNUAL REPORT 2017

For the year ended March 31, 2017



**NISSAN CHEMICAL INDUSTRIES, LTD.**

# A Fusion of Knowledge



## The Nissan Chemical Group Helps to Build a Sustainable Society through Our Business Activities.

◇The demand for new technologies and products is rising, as is the awareness of the need to preserve the global environment.

In response to this demand, we establish de-facto standard technology and create the most advanced materials that help to build a sustainable development of society. At the same time, we offer affordable and fully functional products that meet the global market needs.

◇The population is growing and also rapidly aging globally.

There are growing concerns over food shortages and the declining number of farmers in the domestic agriculture. Faced with these circumstances, we are working to develop agrochemicals that will secure stable agricultural product yields, while also helping to streamline of agricultural work and cut down on labor.

In addition, we also develop pharmaceuticals for healthier and more enriched lives for people.

◇As the changes of the times accelerate, various social issues are coming to light.

Moving forward, we will continue our pursuit of technological innovation by concentrating the expertise of in-house and fusing external knowledge with our work to solve these issues.

## Editorial Policy

In 1992, we introduced responsible care activities, which are initiatives designed to ensure environmental friendliness, health and safety throughout the entire lifecycle of each chemical. We have disclosed the details of these activities via Environmental and Safety Report since 1999 and via CSR Report since 2013.

In the CSR Report, we tried to provide our stakeholders with easy-to-understand information regarding the CSR approach and activities of the company and the group companies. In FY2016, we began publishing this information as the Annual Report, and added a business overview and financial highlights to ensure that our group's business activities are better understood. Detailed financial information is provided in the Financial Section.

Moving forward, we will continue developing our CSR activities to contribute to the realization of a sustainable society. We will also improve the content of the report and make it a useful tool for communicating with our stakeholders.

### Reporting period

FY2016 (April 2016 to March 2017)

\* The occupational accidents data is from January to December 2016 (P54).

### Scope of reporting

This report describes the initiatives of the Nissan Chemical Group, with a focus on environmental and safety initiatives of Nissan Chemical Industries, Ltd.

\* The financial data includes the data of Nissan Chemical Industries, Ltd., its consolidated subsidiaries, and its entities accounted for using equity method.

\* The non-financial data only includes the data of Nissan Chemical Industries, Ltd.

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.R.L. (NCE), NCK Co., Ltd. (NCK)

Entities accounted for using equity method:

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

Group companies:

The above consolidated subsidiaries and entities accounted for using equity method, Environmental Technical Laboratories, 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)

● Issued: November 2017

(The previous edition was issued in November 2016, and the next edition is planned to be issued in October 2018.)

● Frequency of issuance: Annually

● Guidelines used as reference

• GRI G4 Sustainability Reporting Guidelines

• ISO26000

● Contact for inquiries about this report

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# CONTENTS

03	Interview with the President
07	Business Model
09	SDGs and Nissan Chemical Initiatives
11	"Progress2030" Long-Term Business Plan and "Vista2021" Mid-Term Business Plan
15	Financial Highlights
17	Non-Financial Highlights
19	Main Products
19	Nissan Chemical Products that Play an Active Role in Society
21	Environmentally Friendly Products

### Business Overview

23	Performance Materials
25	Agricultural Chemicals
27	Pharmaceuticals
29	Chemicals
31	Advanced Materials & Planning
33	Research and Development

### CSR Management

35	Promotion of CSR
36	Corporate Governance
38	Compliance
39	Risk Management
39	Information Disclosure
40	Value Chain

### Responsible Care (RC) Activities

41	<b>Responsible Care Management</b>
41	Nissan Chemical RC Management System
42	Responsible Care Basic Policies Selection of Material Issues in RC
43	Promotion of the RC Mid-Term Plan RC Audits
45	<b>Environment Safety and Climate Change Strategy</b>
45	Environmental Impact from Production Activities
46	Capital Investment for the Environment and Safety and its Economic Effects
47	Amount of Energy Consumption and Energy Consumption Rate
48	Reduction of Greenhouse Gas Emissions
49	Environmental Performance / Efficient Use of Water Resources
51	Biodiversity Conservation
53	Safety and Disaster Prevention, Occupational Safety and Health
55	Chemicals and Product Safety

### Communication with Society

57	Our Commitment to and Communication with Stakeholders
57	Relationships with Customers
59	Relationships with Investors
60	Relationships with Society
61	Relationships with Employees

65	Financial Section
80	Independent Auditor's Report

### Corporate Information

81	Our Network
84	Corporate History
85	Corporate Profile / Directors
86	Share Information
87	Comparison with GRI G4 Sustainability Reporting Guidelines



# Interview with the President



President & CEO

**Kojiro Kinoshita**

## Could you talk us through your results for FY2016 and forecast for FY2017?

In FY2016, we performed well in the Chemicals, and achieved growth in the Performance Materials and Agricultural Chemicals, from Display Materials and Fluralaner (veterinary pharmaceuticals), respectively. In the Pharmaceuticals, domestic sales of active ingredients for the anti-cholesterol agent LIVALO® fell due to the availability of generic drugs. Overall, however, we achieved sales of 180.3 billion yen, and operating income of 31.4 billion yen, setting new records on both fronts. In terms of financial indicators, we improved upon the previous year's figures across the board too, with an operating margin of 17.4%, return on equity (ROE) of 15.1%, and R&D expenses as a percentage of sales coming in at 8.9%.

Looking ahead to FY2017, we expect to see an increase in raw materials and fuels prices and a sharp rise in fixed costs, given capital investment in the future of our Performance Materials business. Thanks to growth in active ingredients for veterinary pharmaceuticals, and increased sales of Semiconductor and Display Materials, however, we are forecasting sales of 189 billion yen, above 8.7 billion yen from FY2016, and operating income of 32.5 billion yen, an increase of 1.1 billion yen.

## Could you tell us about your business plans?

Last year, we launched a long-term business plan called "Progress2030", accompanied by a mid-term business plan called "Vista2021".

As part of the process of formulating "Progress2030", we set out a definition for the group's business model, as a "Future-Creating Enterprise that responds to social needs with unique, innovative technologies." Our aim is to enhance corporate value hand-in-hand with the development of society around us, while at the same time helping to deal with global challenges such as advances in ICT, food shortages, increasing energy demand, and environmental protection. We will realize this through four domains, "Information & Communication", "Life Sciences", "Environment & Energy" and "Chemicals & Affiliates" with five core technologies adding "Optical Control" to four of "Fine Organic Synthesis", "Functional Polymer Design", "Ultrafine Particle Control" and "Biological Evaluation" that we have developed.

With that in mind, we have also set out a 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," 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."

We have also mapped out a basic strategy – "entering new fields by evolving, deepening and expanding unique technologies" – and have set ourselves the target of achieving sales of 300 billion yen and operating income of 50 billion yen in FY2030.

"Vista2021" meanwhile outlines our ideal situation for 2021, focusing on "Information & Communication and Life Sciences are the driving force for growth while Chemicals & Affiliates achieve a stable profit" and "establish the foundation of Environment & Energy business and a position as a

promising chemical manufacturer that keeps moving forward with a strong presence.” During Stage I, the three years covered under the first half of the plan, we intend to focus on existing products to drive performance, with the aim of achieving sales of 217 billion yen and operating income of 35 billion yen by the final year in FY2018.

### What specific measures are you planning to take in the future?

To achieve our vision by 2030, we will need to “foray into new business domains”, “development of new products that match market trends”, and “enhancing R&D capability”. To generate new business, it is essential to train resources who could be a connoisseur to find clue. In April 2016, we assigned resident members of staff to Santa Clara in the U.S., to have them gather information on and evaluate the latest technologies, away from practical work, with the aim of translating that into new business in the future.

At the same time, it is important to maintain an accurate picture of trends among existing customers too. We are working to develop new products that respond precisely to users’ needs, and that are always one step ahead of current trends.

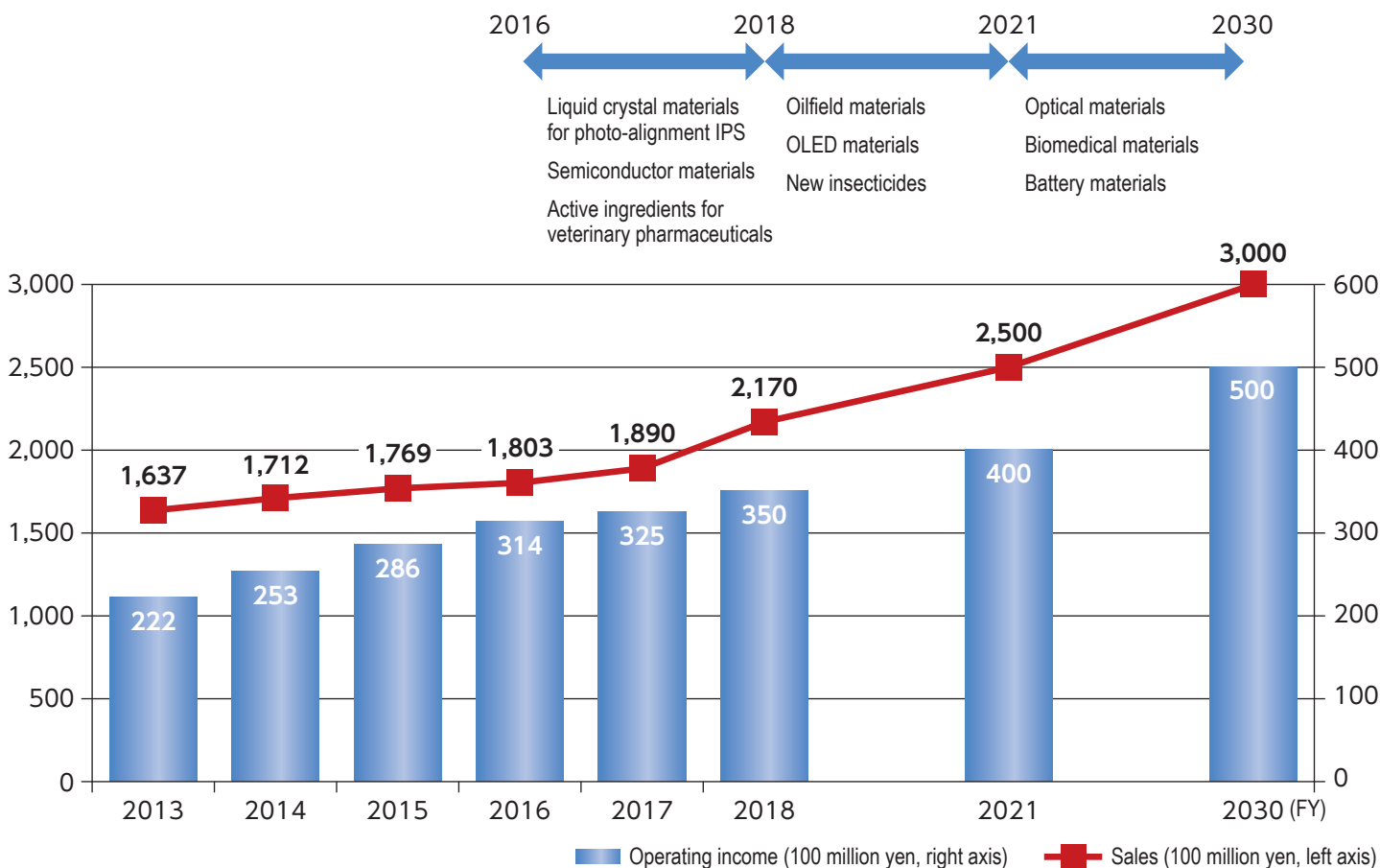
All of this depends on R&D. We have always invested management resources on R&D, and will continue to do so in the future, while also working in closer cooperation with outside parties, as well as in-house initiatives, so that we can continue to refine and improve our technologies.

Accelerate overseas expansion is also essential for us to develop. We established an overseas subsidiary in Brazil last year, and have established

another in India this year. The aim is to increase sales volumes by establishing a stronger presence in the overseas agrochemicals market, which is experiencing rapid growth at present. To secure the key human resources to expand our operations globally in other segments too, in 2014 we introduced an overseas study program, which has provided experience for a number of employees every year since then.

### What is your policy on shareholder returns?

In May last year, when we announced “Vista2021”, we set out a policy of incrementally increasing our dividend payout ratio to 40% by FY2018, with a total payout ratio of 70%. While we maintained a dividend payout ratio around the 30% mark up until FY2015, we have set ourselves a numerical target so that we can live up to the expectations of our shareholders. Having previously repurchased shares on a flexible basis, we have now announced our total payout ratio alongside dividends, clearly signaling that we will continue to do so in the future too.



### Corporate social responsibility is a key requirement for all companies these days. What are your thoughts on CSR?

In recent years, ESG investment has become increasingly common, as a method of investment with an emphasis on environmental, social and governance initiatives. The Sustainable Development Goals (SDGs) meanwhile have been adopted with the aim of dealing with global issues, and the Paris Agreement has also come into effect. As a result of these and other developments, it is no longer enough for companies to focus on their short-term results. We need to be proactive and make a real effort in areas such as addressing climate change, preserving the environment, ensuring employee health and safety, and reinforcing compliance.

Our business activities are based on our corporate philosophy, "We contribute to society in harmony with the environment, based on our excellent technologies, products and services." We believe that putting that into practice is CSR activities. In recognition of just how important that is, we reviewed our Group Code of Conduct in 2016 and revised our Basic CSR Policy. In April this year, we established a CSR Committee and a CSR & Public Relations Office, in order to plan CSR strategy in line with social trends, raise awareness within the group, and actively provide information for stakeholders. We are also committed to promoting CSR activities throughout the supply chain, including suppliers as well as our own operations.

### What is your position on compliance?

We regard compliance with legislation and social norms to be a prerequisite for our continued survival and development as a company. We have in place a Compliance Committee that is chaired by myself and includes outside experts among its members, and we have also set up a "consultation hotline system" to enable employees to report matters to the Compliance Committee directly. Although we have taken steps to prevent reporting parties being disadvantaged in any way, we have only received zero to two reports per year so far under this system. It therefore feels that we need to improve the system and make more of an effort to raise awareness.

In terms of corporate governance, we introduced an executive officer system in 2014, and have reduced the number of directors on our board, so that we can speed up decision-making, and clarify both managerial and operational responsibilities. We also appoint outside directors in an effort to improve management oversight capabilities, and are constantly working to improve compliance, risk management and internal control systems, so that we can ensure sound and transparent management.

## Corporate Ethos Structure

### Mission Statement (Our Values)

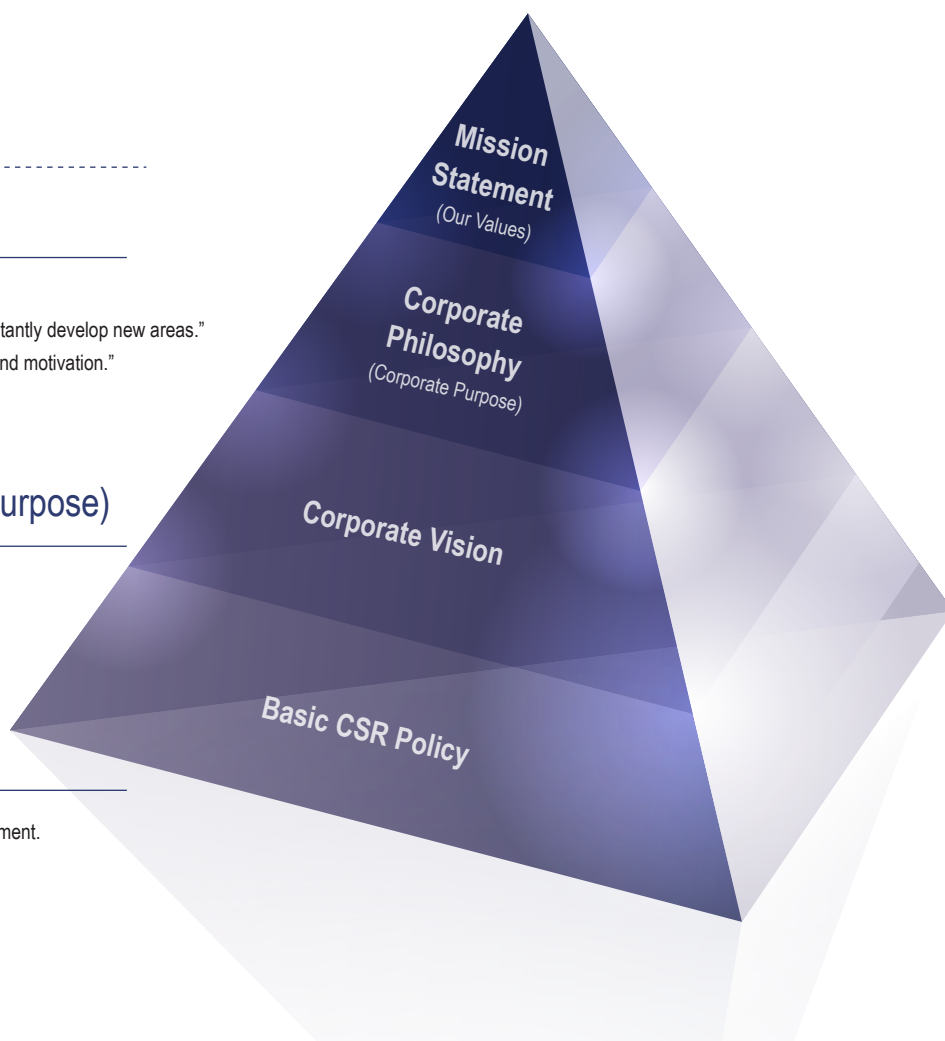
"Contribute to society with excellent technologies and products."  
"Promote prosperity and welfare through concerted efforts to constantly develop new areas."  
"Respect people who exhibit a sense of responsibility, originality and motivation."

### 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.



### What sort of initiatives are you implementing with regard to the SDGs?

Given that the SDGs apply to issues facing advanced nations as well as developing countries, we have an obligation as a company to do our bit to help find solutions. That is why we have been working recently to align our corporate activities with the 17 goals set out under the SDGs. While we are already working hard in areas such as technology and products, responsible care, and social contribution activities, I think that we still need to do more and expand the scope of our activities even further. We are focusing specifically on developing products such as agrochemicals that are essential for growing high quality crops consistently and efficiently, cell culture materials to assist with regenerative medicine, materials for preventing biomolecule adhesion, and other biomedical materials.

### What are your priorities as part of your CSR activities?

We promote responsible care activities as a group, to ensure that all of our products are “environmentally friendly, healthy and safe” throughout their life cycle. Having recently earmarked “countermeasures to address climate change” and “occupational health and safety” as material issues for our responsible care activities, we intend to carry out initiatives in these areas on a priority basis.

Countermeasures to address climate change are a top priority for the entire world, as evidenced by the Paris Agreement coming into effect. Even though we have reduced our greenhouse gas emissions by switching from naphtha to natural gas as the fuel and feedstock for ammonia production, we are nonetheless still working to achieve further reductions through measures such as promoting energy saving technology and alternative fuels. We also work hard to eliminate accidents, as one of our key responsibilities as a company, and the cornerstone of our business activities. While the number of accidents fell last year, accidents that require staff time off from work are still occurring. A fire also broke out at the Onoda Plant last year, although it was fortunately not too serious. We are determined to keep on focusing on occupational health and safety in the future, so that we can eliminate industrial accidents completely.

In the interests of sustainable growth, we also recognize that we need to secure and develop human resources. As well as establishing fair personnel systems, we are working to create more pleasant workplaces at the same time.

We are committed to human resource development based on respect for a diverse range of human resources, personalities and ways of thinking. We also have a number of systems in place to enable employees to strike a balance between their work and personal lives, and make every effort to provide support to maintain mental and physical health. As a result of initiatives such as these, we were recognized under the “2017 Certified Health and Productivity Management Organization Recognition Program (White 500)”.



### Finally, is there anything you would like to say to the group's stakeholders?

I hope you will take time to read through our Annual Report 2017, and that it will help to give you a better understanding of Nissan Chemical Industries.

This year is a momentous year for us as it marks our 130<sup>th</sup> anniversary. Our aim is to be an excellent chemical company with a strong presence, capable of contributing to the survival and development of the entire human race. We intend to effectively implement measures in line with strategies set out in our long-term and mid-term business plans, so that we can build momentum for further growth and development, as we continue to evolve into a Future-Creating Enterprise.

I hope we can rely on the understanding and support of all of our stakeholders in the future.

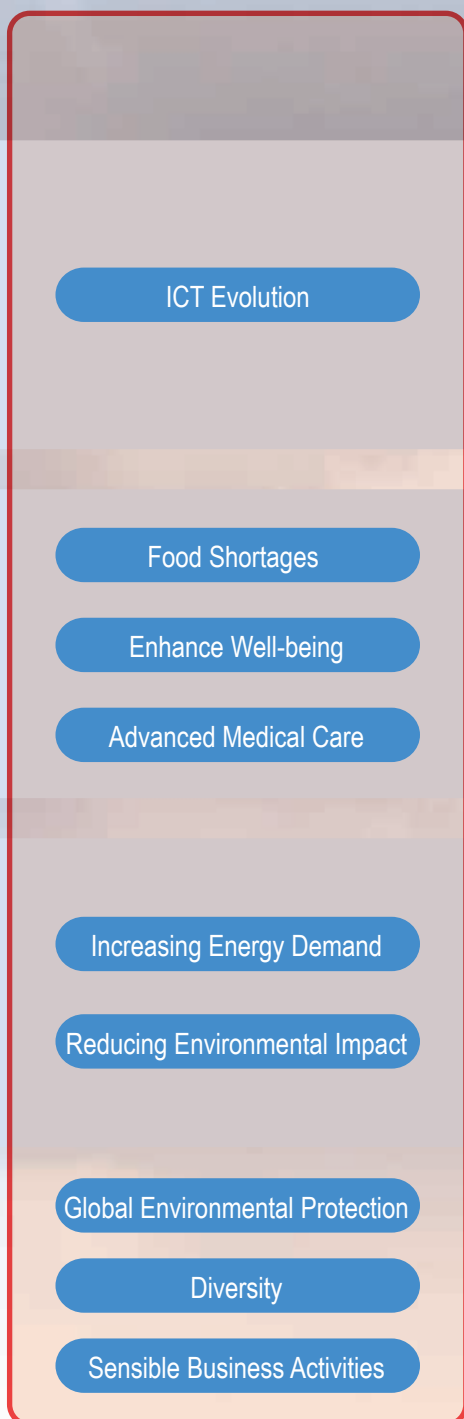
# Business Model

## – Future-Creating Enterprise that Responds to Social Needs with Unique,

We, Nissan Chemical Group, conduct business activities in four business domains using our five core technologies, including “Optical Control”, which we added to the range of technologies we have accumulated over the years.

Based on our recognition of various social issues and changes, we aim to enhance our initiatives for addressing environmental problems and achieve sustainable growth together with society. We will also work to provide new products through each business domain.

### Social Issues and Changes

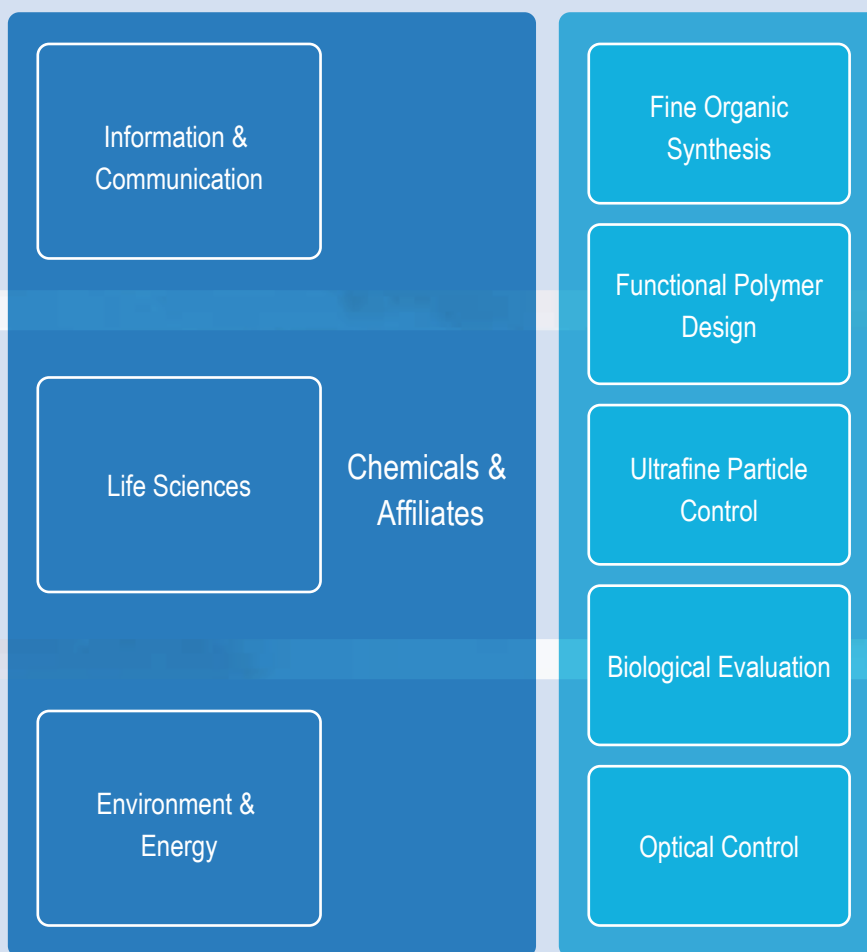


### Our Objectives

Creating new technologies and products that respond to both visible and potential needs

#### Business Domains

#### Core Technologies





# Innovative Technologies —

## Our Business Activities

Supplying display materials and semiconductor materials in response to the technological innovations of customers

Providing sensor materials needed for IoT and healthcare

Developing interconnect materials that allow for the communication of greater amounts of data at higher speeds

Supplying agrochemicals that help boost crop yields and save on agricultural labor

Providing veterinary pharmaceuticals intended for companion animals that comfort people

Creating pharmaceuticals that cater to medical needs

Developing biomedical materials that contribute to advanced medical care

Providing battery materials that are compatible with batteries that deliver a higher level of performance

Developing energy harvesting materials that help utilize unused energy

Creating thermal control materials that help improve the efficiency of energy use

Strengthening responsible care activities

Respecting the individuality and personality of each person and creating a pleasant workplace

Strengthening corporate governance and ensuring the appropriate disclosure



▲ Flexible display



▲ Dialyzer



▲ Photovoltaic generation

# SDGs and Nissan Chemical Initiatives

“The Sustainable Development Goals (SDGs)” were set out at a “UN Sustainable Development Summit” in September 2015. They consist of 17 goals and 169 targets that need to be addressed globally by the year 2030 in order to safeguard the human race and the planet, as we continue to work towards enriching all of our lives.

Based on the SDGs, UN member countries are required to make an effort to achieve goals in areas such as poverty, hunger, energy, climate change and peace by the year 2030. Companies are also expected to make a contribution.


















## SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD



- 1** No poverty
- 2** Zero hunger
- 3** Good health and well-being
- 4** Quality education
- 5** Gender equality
- 6** Clean water and sanitation
- 7** Affordable and clean energy
- 8** Decent work and economic growth
- 9** Industry, innovation and infrastructure
- 10** Reduced inequalities
- 11** Sustainable cities and communities
- 12** Responsible consumption and production
- 13** Climate action
- 14** Life below water
- 15** Life on land
- 16** Peace, justices and strong institutions
- 17** Partnerships for the goals

# Contributing to the SDGs through our Corporate Activities

	Contributing through technology/products					Contributing through responsible care activities	Contributing through social activities	
	Performance Materials	Agricultural Chemicals	Pharmaceuticals	Chemicals	Advanced Materials & Planning			
								
		● (P25)						We supply and develop agrochemicals that help to deal with food problems.
			● (P27)		● (P31)		● (P60)	We are conducting research into pharmaceuticals and medical materials to help people keep their health all over the world. We also carry out welfare fund activities as part of our efforts to contribute to local communities.
							● (P60)	We provide support for next generation education through initiatives such as off-site classes and "Riko-challe" (support choosing STEM fields). We also present awards to researchers who have achieved unique and outstanding results.
							● (P61)	We make every effort to create pleasant workplaces, based on respect for a diverse range of human resources, personalities and ways of thinking.
				● (P29)		● (P50)		We supply products that help to maintain sanitary water. We also make effective use of water resources.
	● (P23)				● (P31)	● (P47)		We develop materials to improve energy efficiency, and materials for purposes such as secondary batteries and energy harvesting. We are also constantly working to reduce energy consumption.
							● (P61)	We conduct fair personnel evaluations, operate a range of training schemes for human resource development, and have introduced a number of systems to ensure a work-life balance.
	● (P23)	● (P25)	● (P27)	● (P29)	● (P31)	● (P41)		We promote innovation through research and development.
								
				● (P29)		● (P49)		We supply products and materials that help to reduce environmental impact.
	● (P23)				● (P31)	● (P55)		We are committed to reduce environmental impact such as minimize waste, and conduct both human and environmental risk assessments covering the entire life cycle of our products.
	● (P23)				● (P31)	● (P48)		We develop materials that improve energy efficiency and help to make effective use of unused energy sources, and are working to reduce greenhouse gas emissions.
						● (P51)		We carry out biodiversity conservation activities in the vicinity of our plants, laboratories and other facilities.
						● (P51)		
								We have set out compliance requirements that include "preventing relations with antisocial forces", "prohibition of excessive entertainment and gift-giving", and "prohibition of bribery of foreign public officials".
								

## 1. Outline of “Progress2030” Long-Term Business Plan

### 1 The Corporate’s 2030 Vision

“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”

### 2 Basic Strategies

“Entering new fields by evolving, deepening and expanding unique technologies”

#### 1) Information & Communication (display, semiconductor, inorganic, optical and sensor materials)

For display, semiconductor and inorganic materials, we will provide products based on technological innovations in the market.

We will also create sensor materials by using our existing technologies and optical materials by establishing optical control technologies.

#### 2) Life Sciences (agrochemicals, veterinary pharmaceuticals, pharmaceuticals and biomedical materials)

We will strengthen the pipeline for agrochemicals and pharmaceuticals, also develop new veterinary pharmaceuticals.

In addition, we will create biomedical materials that contribute to advanced medical care using accumulated technologies for biological evaluation and material design.

#### 3) Environment & Energy (batteries, energy harvesting and thermal control materials)

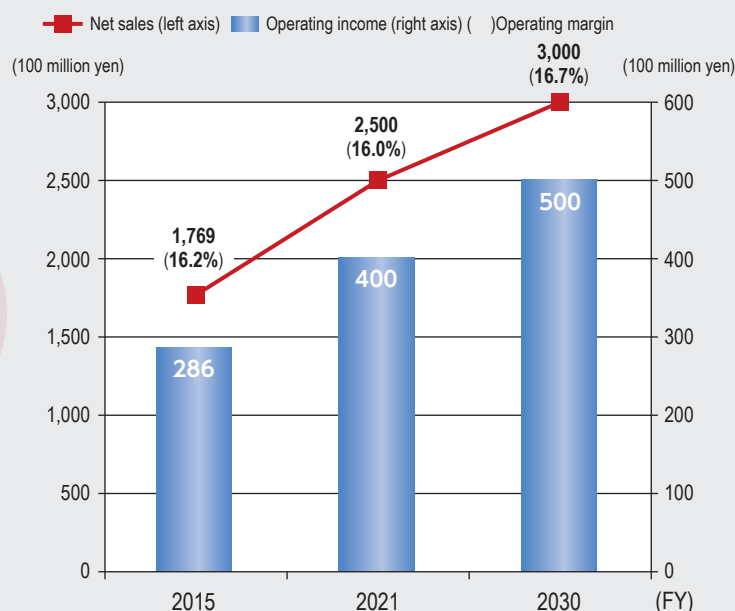
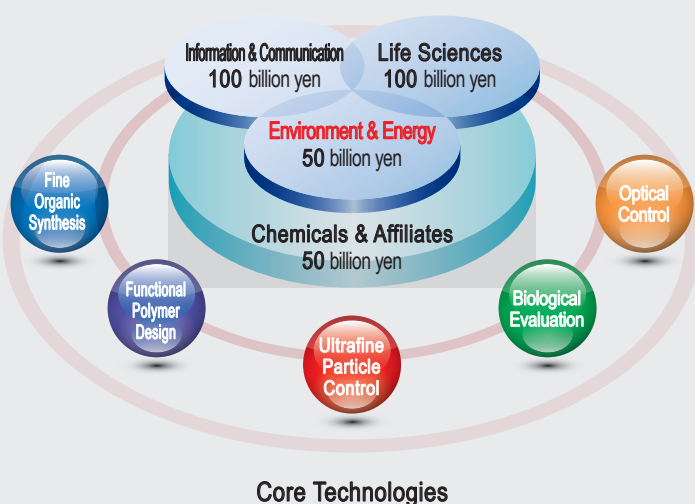
We will establish a device evaluation technology then supply battery materials and materials that contribute to efficient use of energy.

#### 4) Chemicals & Affiliates (basic chemicals, fine chemicals and affiliates)

We will continue to carry out R&D in relation to TEPIC®-epoxy compound for LED sealants, solder resist, painting- and launch new high-performance compounds.

### 3 Business Domains / Business Size

Net sales (FY2030)





## 2. Outline of “Vista2021” Mid-Term Business Plan —A six-year plan starting in FY2016—

The plan is divided into the first three years (FY2016 to 2018) as Stage I and the second three years (FY2019 to 2021) as Stage II.

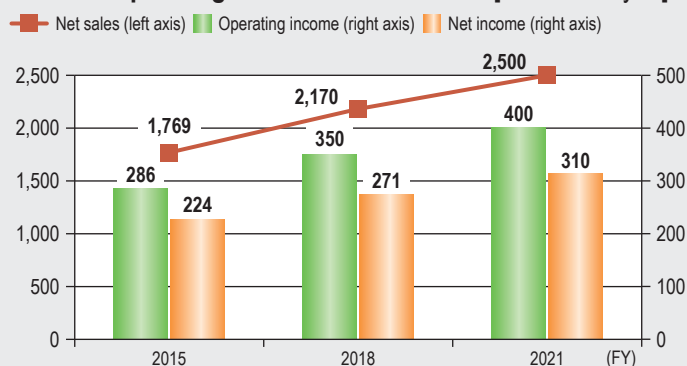
### 1 Ideal Situation of 2021

“Information & Communication and Life Sciences are the driving force for growth while Chemicals & Affiliates achieve a stable profit.”

“Establish the foundation of Environment & Energy business and a position as a promising chemical manufacturer that keeps moving forward with a strong presence.”

### 2 Financial Target

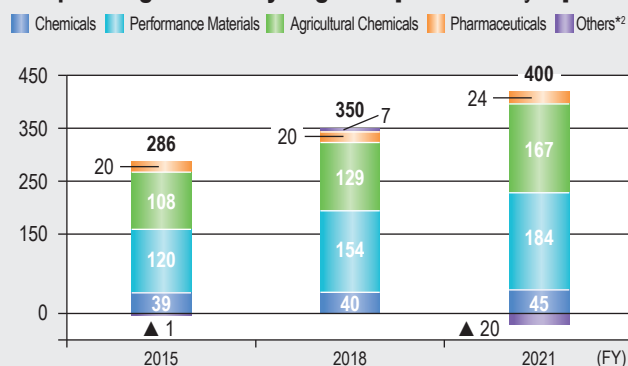
#### 1. Sales / Operating income / Net income\*1 [100 million yen]



\*1 Net income attributable to owners of parent

Naphtha (¥/kL): FY2015 42,800 FY2016 35,400 FY2017 and onward 51,100 FX rate (¥/\$): FY2015 1H 122 2H 118 FY2016 and onward 115

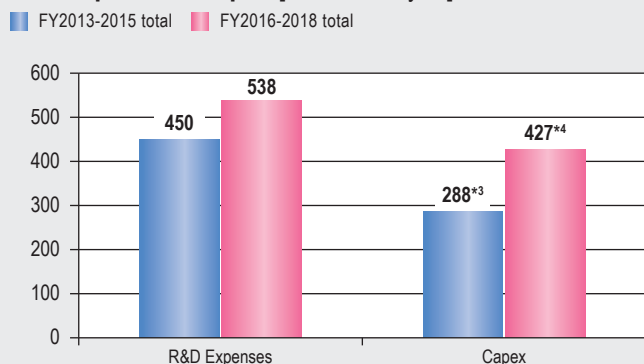
#### 2. Operating income by segment [100 million yen]



\*2 Others: trading, others and adjustment

### 3 R&D Expenses, Capex

#### R&D Expenses / Capex [100 million yen]



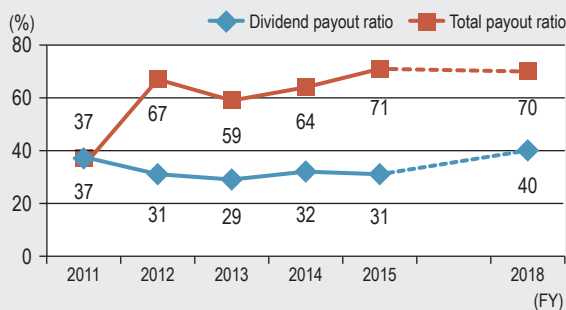
\*3 Approval basis \*4 Production commencement basis

### 4 Financial Indicators (FY2018 target)

Operating margin	Maintain above 15%
ROE	Maintain above 14%
R&D expenses/sales	Above 8%

### 5 Shareholder Return

Dividend payout ratio	Gradually increase to 40% in FY2018
Total payout ratio	Maintain 70%



Full details of “Progress2030” and “Vista2021” are available online.  
[http://www.nissanchem.co.jp/eng/news\\_release/release/en2016\\_05\\_16.pdf](http://www.nissanchem.co.jp/eng/news_release/release/en2016_05_16.pdf)

## 3-1. Outline of “Vista2021 Stage I”

### 1 Basic strategies

- |   |  |
|---|--|
| 1) Maximizing the profit from existing products | Boosting the market shares of products for growing fields, driving overseas business expansion, and reducing costs |
| 2) Improving marketing power                    | Identifying market needs by moving closer to customers and obtaining information about advanced materials          |
| 3) Enhancing R&D capability                     | Improving existing technologies, establishing new technologies, and accelerating the development of new products   |

### 2 Sources of Growth

Increased sales (FY2018 vs. FY2015)		Less than one billion yen	One to three billion yen	Over three billion yen
Performance Materials	Chemicals	AdBlue® High purity ammonia	TEPIC® VA	Photo-alignment IPS
	Display Materials			
	Semiconductor Materials	3D packaging materials (TMAT), new lithography materials	ARC® (bottom anti-reflective coating) Multi-layer semiconductor process materials	
	Inorganic Materials		Oilfield materials	
	New Materials	OLED materials Light control film materials Sensor materials HYPERTECH®		
	Agricultural Chemicals	New insecticides (in-house) New products (acquired)	ROUNDUP® ALTAIR®	Fluralaner Overseas
	Pharmaceuticals	LIVALO® active ingredients (overseas) New drugs / Expanded pipeline Finetech®		

\* Increased sales based on forecasts at the time of formulating our new mid-term business plan  
 ARC® is a registered trademark of Brewer Science, Inc.  
 AdBlue® is a registered trademark of Verband der Automobilindustrie.

### 3 Initiatives for Stage II and Onward

#### 1) Information & Communication

- i. Developing heat-resistant lenses, light control film and optical interconnect materials    ii. Creating next-generation display and semiconductor materials

#### 2) Life Sciences

- i. Developing NC-515 (insecticide), new fungicides and herbicides for paddy rice  
 ii. Jointly developing NIP-022 (thrombocytopenia treatment agent) and promoting the research collaboration of antifungal drugs  
 iii. Achieving global standardization of cell culture materials

#### 3) Environment & Energy

- i. Developing materials for secondary batteries and fuel cells    ii. Creating energy harvesting materials

#### 4) R&D

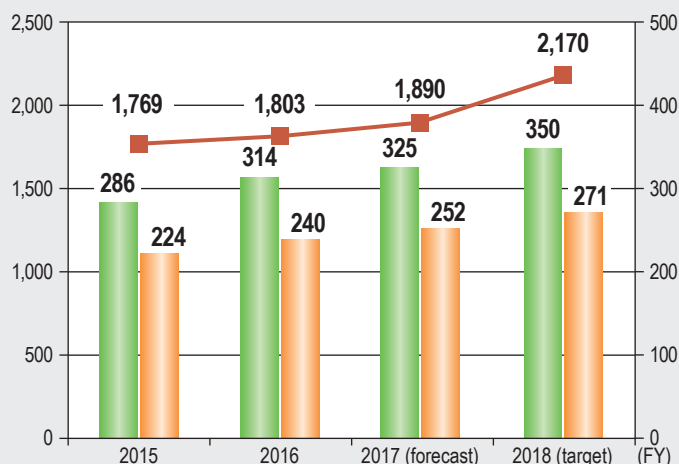
- i. Acquiring seeds in the field of biomedical materials    ii. Introducing cutting-edge technologies through open innovations  
 iii. Developing new business fields by strengthening and fusion of core technologies

## 3-2. Progress with “Vista2021 Stage I”

### 1 Results for FY2016 and Forecast for FY2017

#### 1. Sales / Operating income / Net income [100 million yen]

— Net sales (left axis) — Operating income (right axis) — Net income (right axis)



#### 2. Financial Indicators

	Results for FY2016	Forecast for FY2017
Operating margin	17.4%	17.2%
ROE	15.1%	15.0%
R&D expenses / sales	8.9%	9.1%

#### 3. Shareholder Return

	Results for FY2016	Forecast for FY2017
Dividend payout ratio	33.1%	35.8%
Total payout ratio	70.4%	Maintained at 70%

### 2 Progress with Basic Strategies

#### 1) Maximizing the profit from existing products

##### i. Increasing sales of Fluralaner (active ingredient for BRAVECTO® veterinary pharmaceuticals)

In addition to chewable tablets (oral) for dogs, which are already on sale in over 80 different countries, last year we also launched spot on products (transdermal) for cats in Europe and the U.S. We are planning to launch a spot on product for dogs in Europe and the U.S. in the future too.

\* BRAVECTO® is a registered trademark of Intervet International B.V.



▲ BRAVECTO® spot on products

##### ii. Launching ROUNDUP® MAXLOAD AL II

We launched a fast acting product in the ROUNDUP® MAXLOAD AL series for general household use in June of last year. Sales have been strong since then.

##### iii. Growth in SUNEVER® (LCD alignment coating)

We have increased our share among existing customers and secured new orders for small and medium-sized products, including smartphones. There is genuine demand for television screens too.

#### 2) Improving marketing power

##### i. Opening the Nissan Chemical America Santa Clara Office (April 2016)

We are aiming to “secure new technologies and materials”, and “develop human resources with a discerning eye, as the key to launching new businesses and creating new products.”

##### ii. Establishing Nissan Chemical Do Brasil (June 2016)

We are aiming to “identify needs and strengthen sales capabilities in the world’s largest agrochemicals market, and to improve technical services.”

#### 3) Enhancing R&D capabilities

##### i. Completing plans to improve Biological Research Laboratories (March 2017)

We are accelerating research in the interests of creating new products, as a life science research facility handling operations such as evaluating the efficacy and safety of agrochemicals, pharmaceuticals and medical materials.

##### ii. “Collaborating on creating biomedical materials”

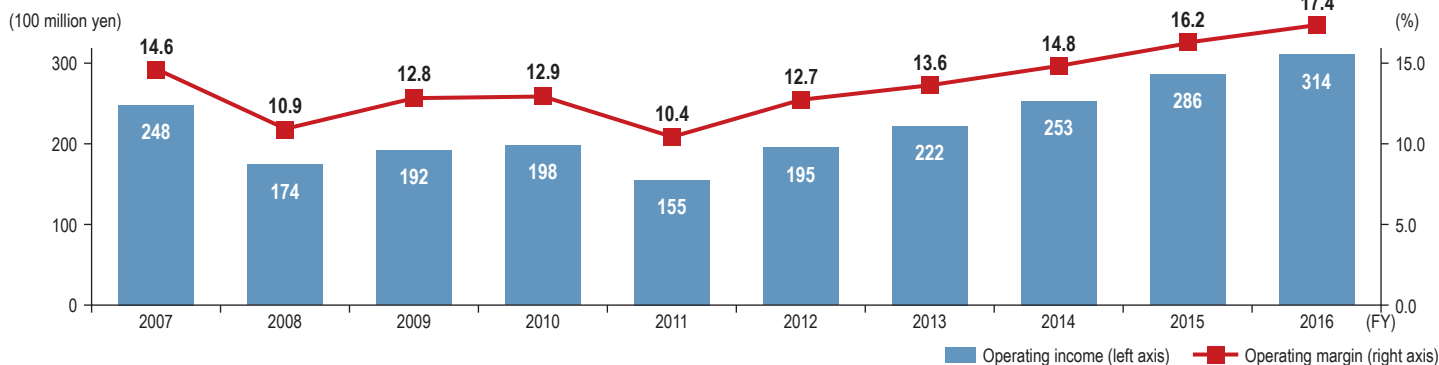
As part of our comprehensive collaboration with Kyushu University, we have started research into materials for regenerative medicine and transdermal DDS materials.



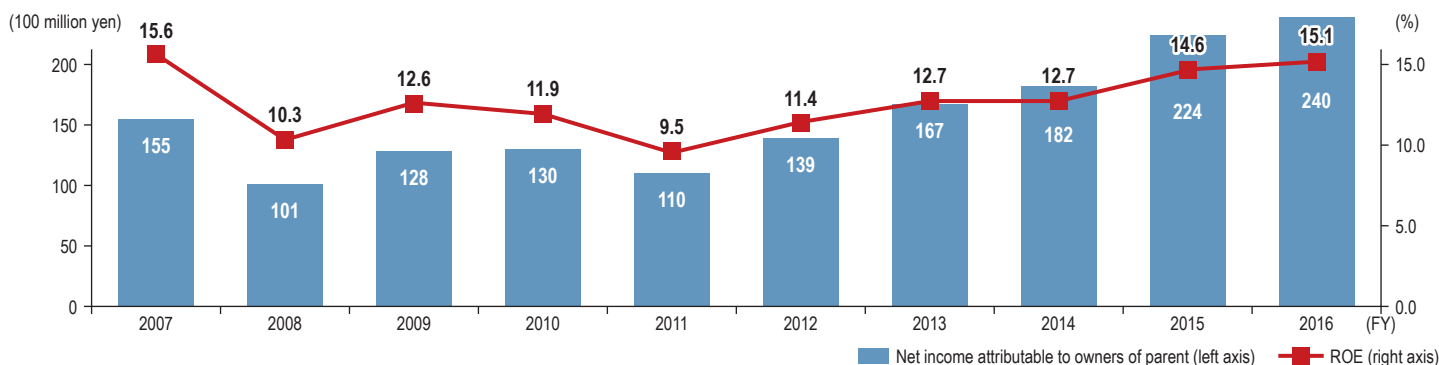
▲ Laboratory at Kyushu University

# Financial Highlights

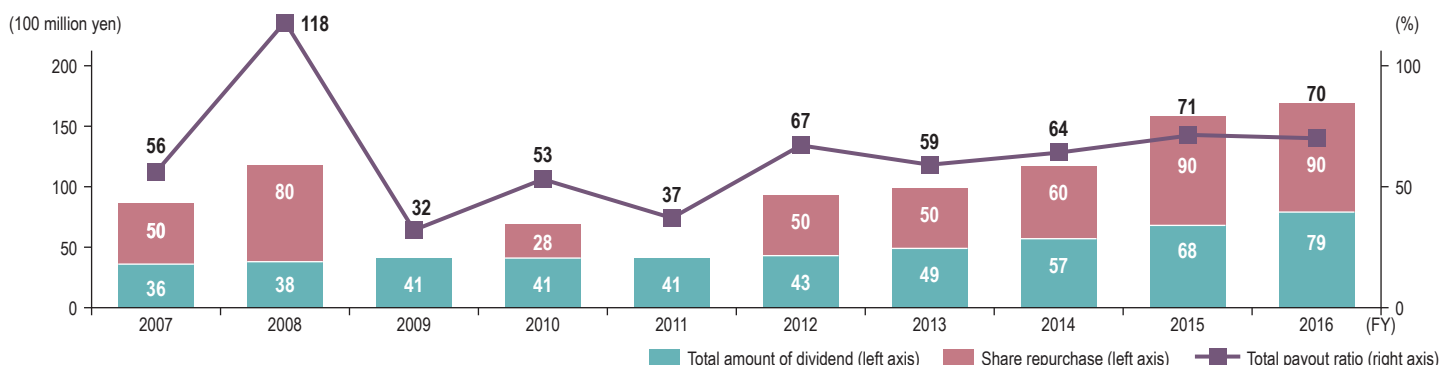
## Operating income / Operating margin



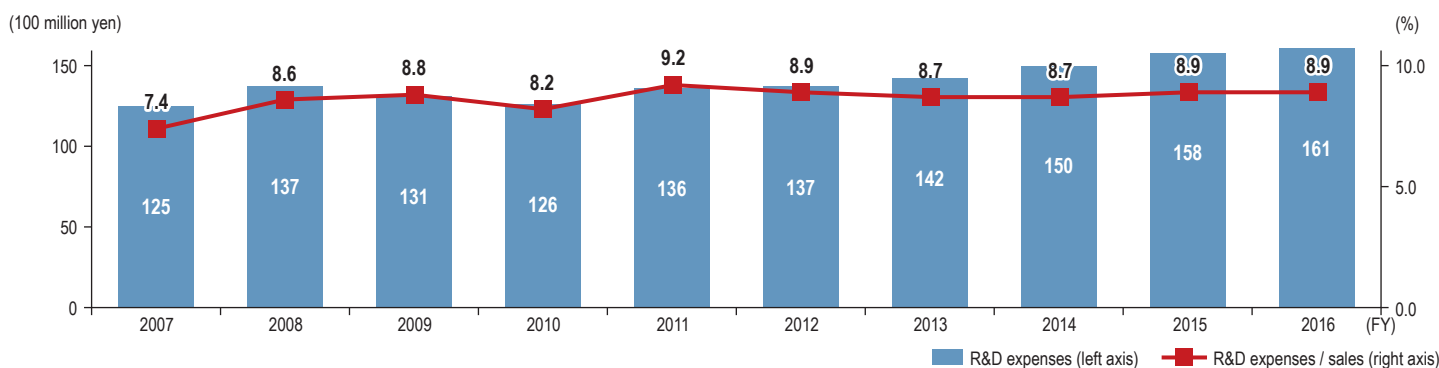
## Net income attributable to owners of parent / ROE



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



## R&D expenses / Percentage of sales





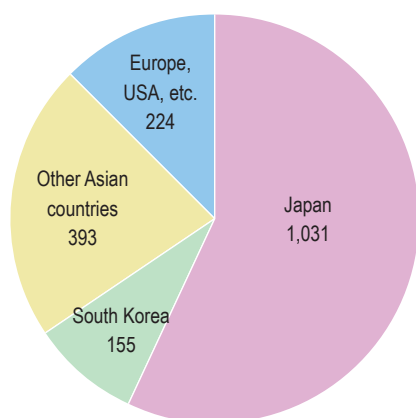
## Financial Data (consolidated)

	Unit	FY2012	FY2013	FY2014	FY2015	FY2016
Sales	100 million yen	1,538	1,637	1,712	1,769	1,803
Operating income	100 million yen	195	222	253	286	314
Ordinary income	100 million yen	205	237	264	295	317
Net income attributable to owners of parent	100 million yen	139	167	182	224	240
EBITDA*1	100 million yen	290	308	338	383	403
EPS*2	Yen / Share	83.74	102.11	113.99	143.37	156.97
Dividend	Yen / Share	26	30	36	44	52
Dividend payout ratio	%	31.0	29.4	31.6	30.7	33.1
Total assets	100 million yen	1,992	2,080	2,239	2,282	2,317
Net assets	100 million yen	1,267	1,378	1,513	1,569	1,637
Cash	100 million yen	319	308	313	353	357
Liabilities with interest	100 million yen	381	361	351	331	308
Equity ratio	%	63.0	65.7	66.9	68.1	69.9
Capex	100 million yen	81	88	98	102	143
Depreciation	100 million yen	95	85	85	97	89

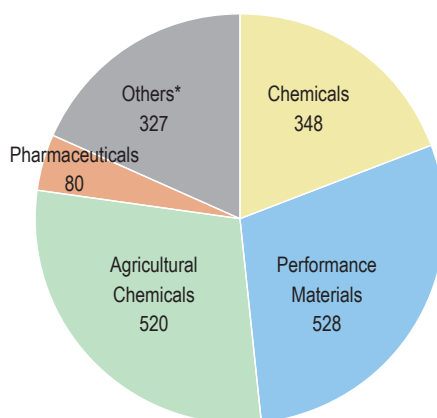
\*1 Operating income + depreciation \*2 Net income attributable to owners of parent / issued shares

## FY2016 Sales and Operating Income

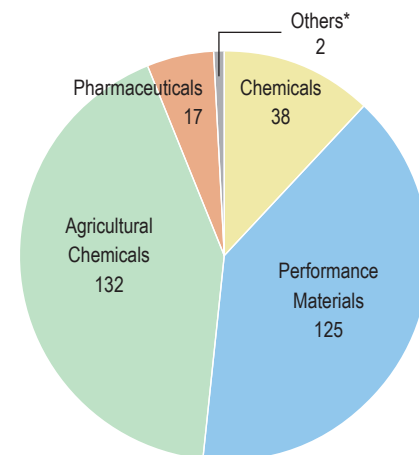
Sales according to region (100 million yen)



Sales according to segment (100 million yen)



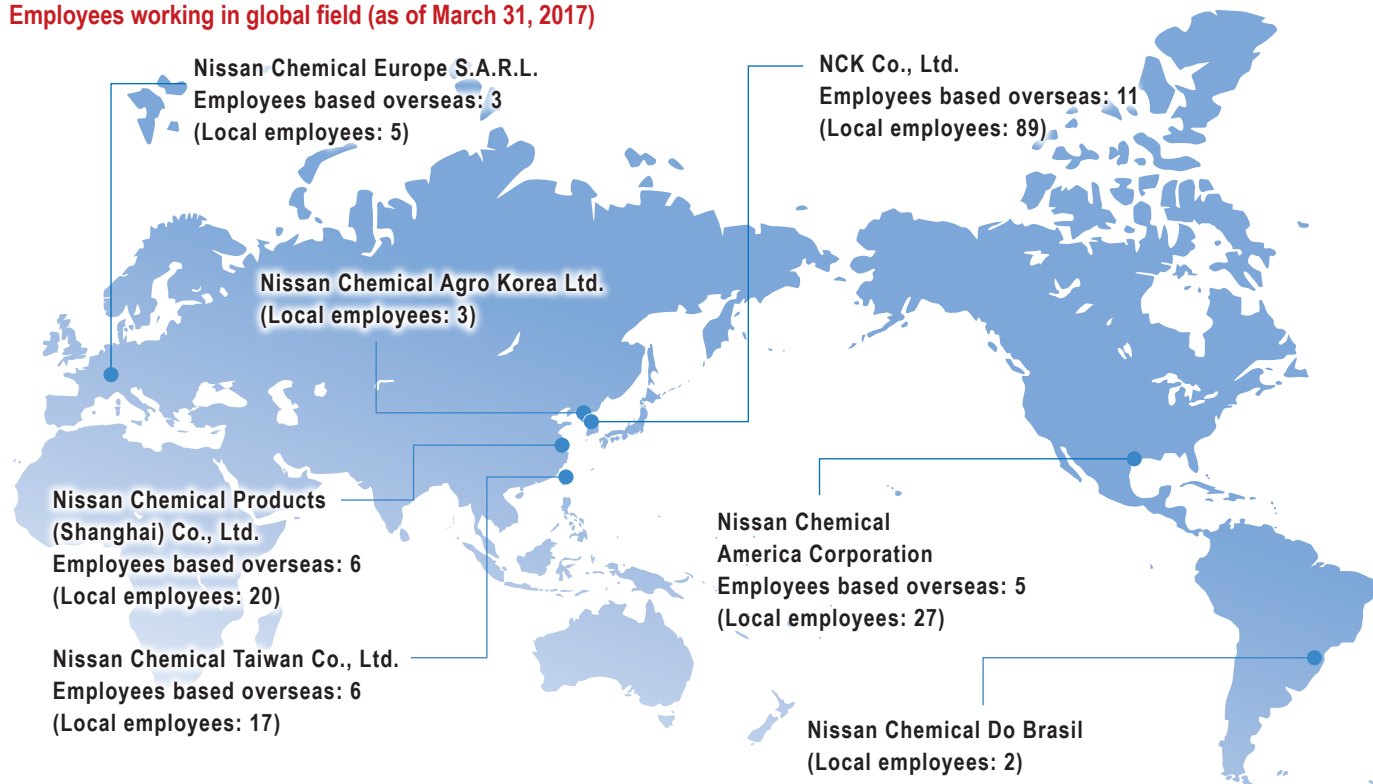
Operating income according to segment (100 million yen)



\* Others: trading, others and adjustment

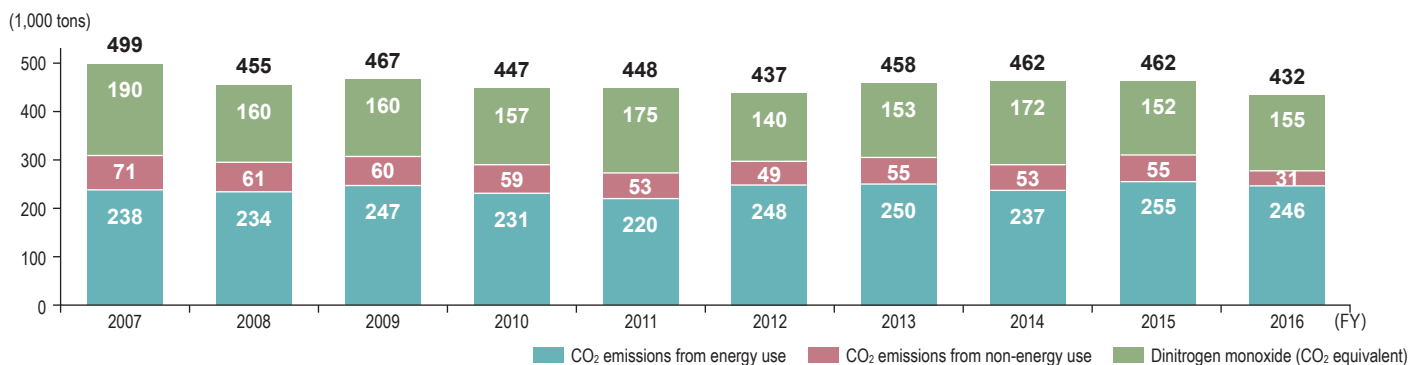
# Non-Financial Highlights

## Employees working in global field (as of March 31, 2017)

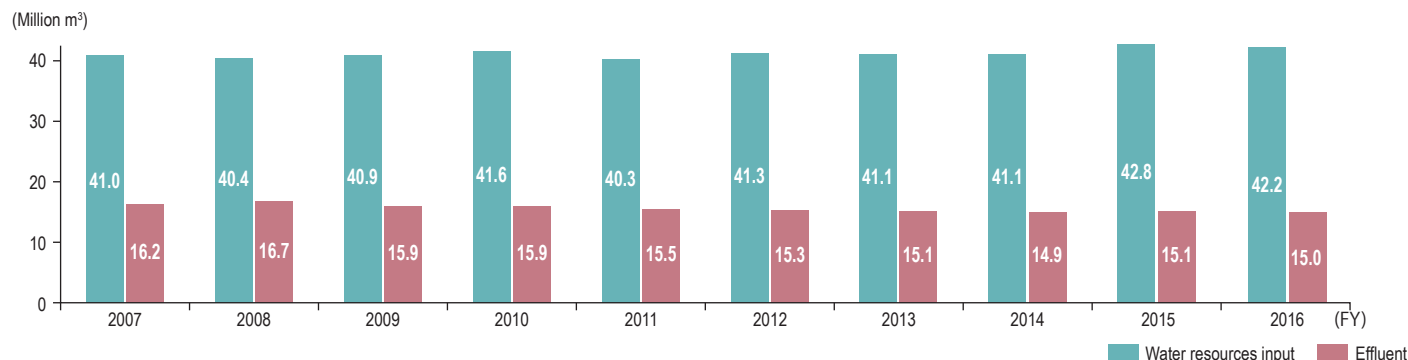


An additional one employee is assigned to a research laboratory (IMEC) and another to a university (University of Texas).

## Greenhouse gas emissions



## Water resources input\* / Effluent \* Tap water, groundwater and industrial water used for business activities



## Non-Financial Data (non-consolidated)

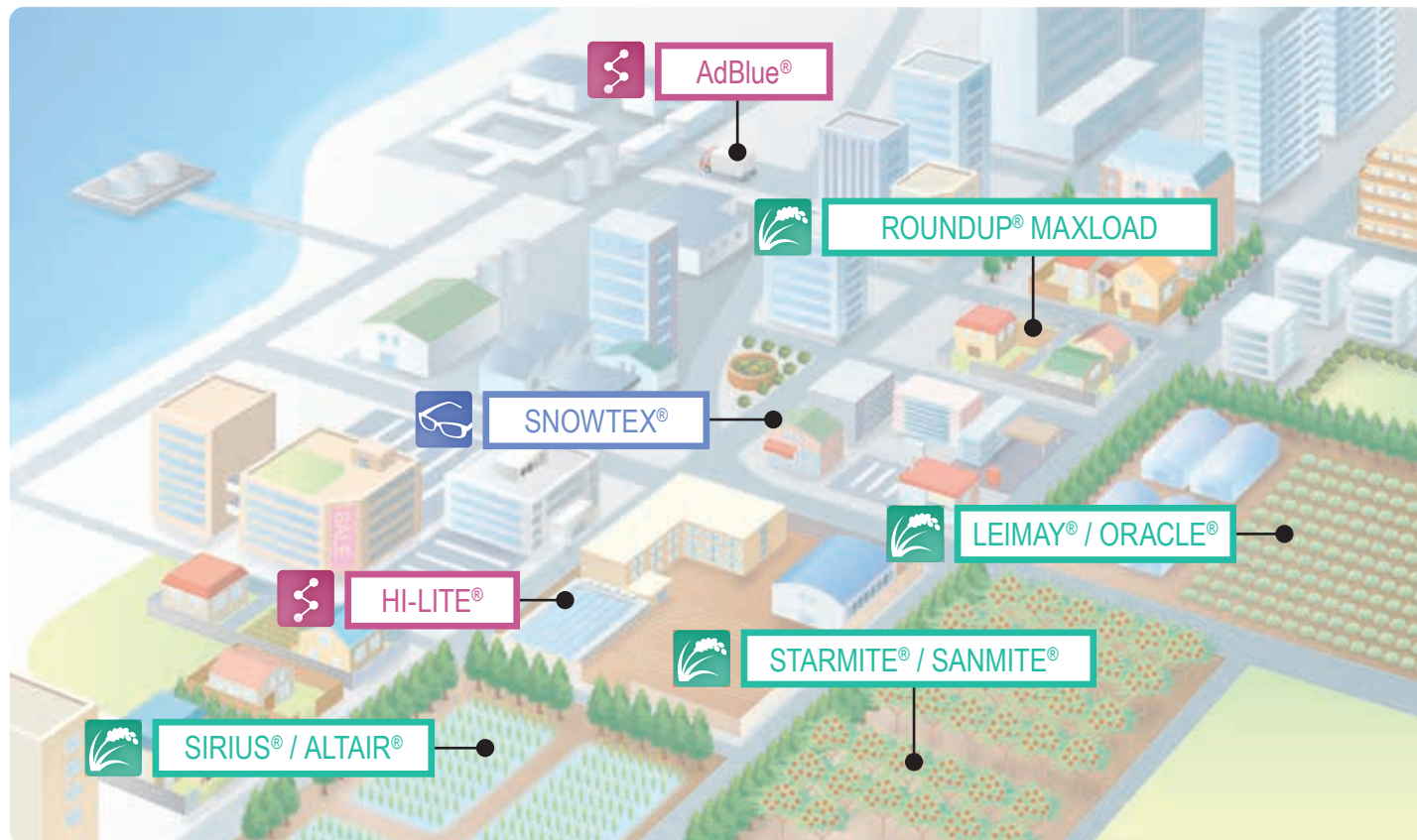
	Unit	FY2012	FY2013	FY2014	FY2015	FY2016	
Full-time employees	Male	People	1,550	1,543	1,553	1,567	1,597
	Female	People	162	164	168	172	173
Percentage of females among full-time employees		%	9.5	9.6	9.8	9.9	9.8
New employees (graduates)	Male	People	22	34	39	59	51
	Female	People	3	7	10	6	13
Percentage of females among new employees		%	12.0	17.1	20.4	9.2	20.3
Temporary employees	Male	People	31	26	18	20	19
	Female	People	75	81	91	96	100
Female managers		People	9	9	10	12	11
Percentage of females among managers		%	2.0	2.0	2.1	2.5	2.1
Re-employment of retired employees		People	59	66	60	64	85
Percentage of re-employment of retired employees		%	64	63	66	97	89
Percentage of employees with disabilities*1		%	2.12	2.22	2.35	2.15	2.23
Employees who started maternity leave		People	5	8	9	7	13
Employees who started childcare leave	Male	People	0	0	1	2	0
	Female	People	6	6	6	8	11
Percentage returning to work after taking maternity/childcare leave ("—": Not applicable)	Male	%	—	—	—	100	100
	Female	%	100	80	100	100	100
Retention rate after taking maternity/childcare leave ("—": Not applicable)	Male	%	—	—	—	100	100
	Female	%	100	100	100	85.7	100
Employees who started shorter working hours for childcare	Male	People	0	0	0	0	1
	Female	People	5	7	9	11	10
Average overtime per month		Hrs	16.8	18.0	18.8	19.0	20.0
Percentage of taking annual leave		%	77.6	76.9	73.4	77.4	77.2
Leaving job within 3 years of employment		People	4	1	1	3	2
Percentage of employees leaving job within 3 years of employment		%	7.5	3.1	3.8	12.0	4.9
Amount of energy consumed (crude oil equivalent) *2		1,000 kL	97	95	92	99	99
Waste generation		1,000 tons	26.8	26.3	33.0	33.4	33.7
Final disposal volume of waste		1,000 tons	2.5	1.5	2.3	2.2	1.1

\*1 Statutory rate: 2.0% \*2 Energy: Fuel, purchased electricity and purchased steam used for business activities

# Main Products

## Nissan Chemical Products that Play an Active Role in Society

Here we introduce our three business domains and products used in various parts of society.



### Performance Materials

#### Display Materials

- SUNEVER® (LCD alignment coating)
- NHC® (inorganic coating materials)

#### Semiconductor Materials

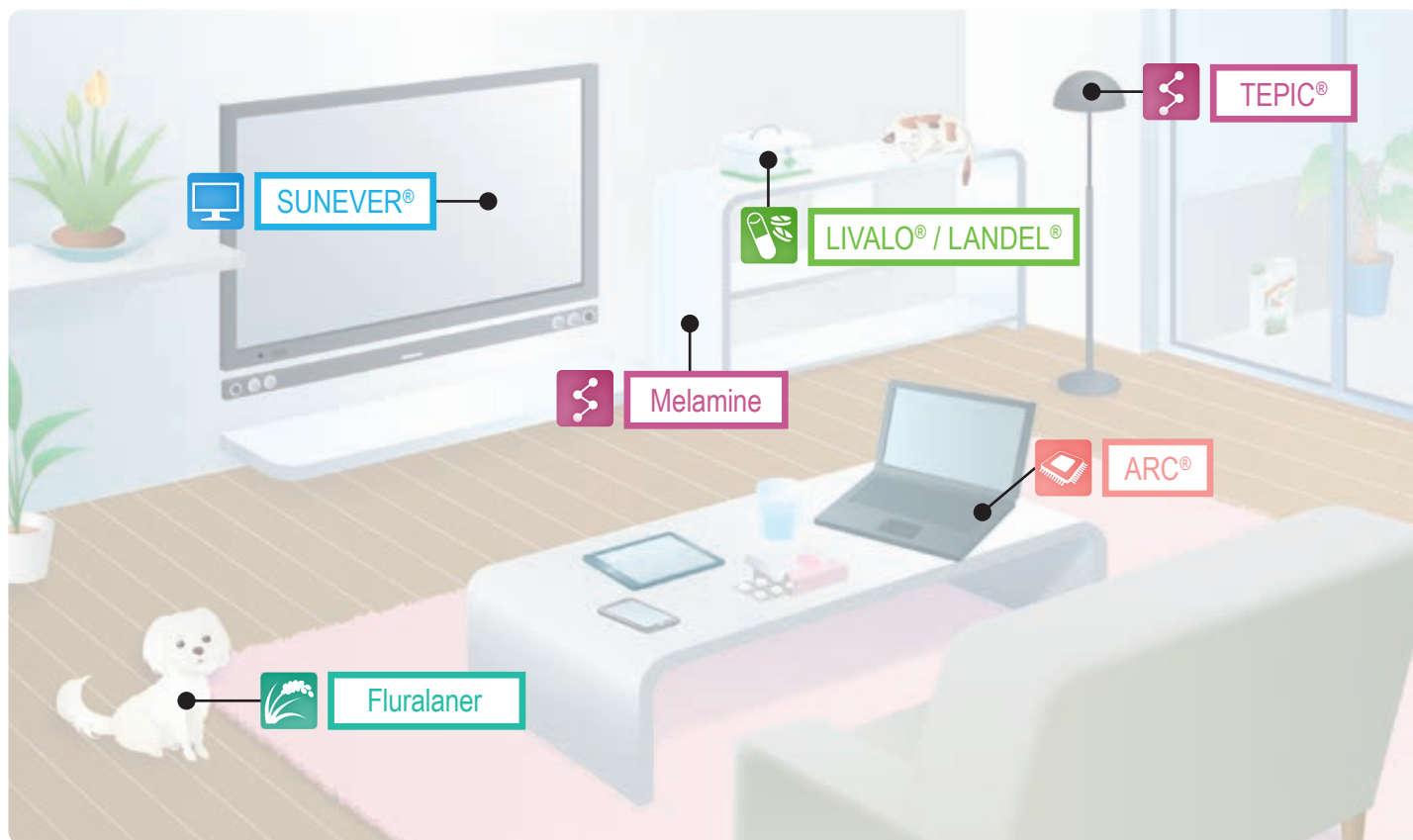
- ARC® (bottom anti-reflective coating)

#### Inorganic Materials

- SNOWTEX® (semiconductor polishing, hard coating, etc.)
- Organo silica sol (coating for anti-scratch, insulation, CTE reduction)







## Life Sciences

### Agricultural Chemicals

- | Herbicide          | Insecticide | Fungicide |
|--------------------|-------------|-----------|
| • SIRIUS®          | • STARMITE® | • LEIMAY® |
| • ALTAIR®          | • SANMITE®  | • ORACLE® |
| • ROUNDUP® MAXLOAD |             | • PULSOR® |
| • TARGA®           |             |           |
| • PERMIT®          |             |           |

### Active ingredients for veterinary pharmaceuticals

- Fluralaner

### Pharmaceuticals

- LIVALO® (anti-cholesterol agent)
- LANDEL® (anti-hypertension agent)

### Novel agent under development

- NIP-022 (thrombocytopenia treatment agent)
- NT-702 (asthma care, arteriosclerosis obliterans treatment agent)
- NTC-801 (anti-arrhythmic agent)

## Chemicals

### Chemicals

- Melamine (adhesive agent for particle board)
- High purity chemicals
- AdBlue® (High-grade urea solution)
- FINEOXOCOL®
- TEPIC® (epoxy compound for LED sealants, solder resist, painting)
- Melamine cyanurate (flame retardant)
- HI-LITE® (chlorinated isocyanuric acid for sterilizing)
- Nissan Reishi (health food)

## Environmentally Friendly Products

We define environmentally friendly products as products that reduce environmental impact across each of the processes below, from manufacture to distribution, use and disposal, or that play an important role in achieving that goal. We have set ourselves the goal of improving the percentage of our products that are environmentally friendly.



**Manufacture**

- i. Saving energy
- iv. Reducing waste and environmental pollutants



**Distribution**

- ii. Reducing CO<sub>2</sub>
- v. Purifying air and water



**Use**

- iii. Conserving resources (water, raw materials)
- vi. Renewable (new) energy



**Disposal**

## Performance Materials

### HYPERTECH®

#### Nucleating agents for electroless plating

Nucleating agents make it possible to reduce the amount of metal used for wiring in items such as flexible printed substrates or touch panels by more than 90%.

Metal wiring is made by forming a metal film across the entire surface of the substrate in a vacuum, and then removing unwanted parts with acid. HYPERTECH® makes it possible to draw wiring patterns, meaning that metal only adheres to drawn lines. This in turn minimizes the amount of metal plating required.



▲ Touch panel

#### Coating materials with ultra-high refractive index

OLED lighting already has a low environmental impact. By applying a film between the electrodes and substrates, or between the electrodes and light source, however, it is possible to improve light efficiency from the light source by up to 20%. HYPERTECH® is transparent, heat resistant and offers excellent adhesion to different substrate materials. Ease of application can also help to reduce manufacturing costs.



▲ OLED lighting

### Inorganic Materials

#### SNOWTEX®, Aluminasol, Organo silica sol, NanoUse®ZR

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.



▲ Purifying emissions (illustration purposes only)

## Agricultural Chemicals

### Compact agrochemical formulations

We supply lightweight, compact agrochemical formulations that contain a high concentration of active ingredients, including WG (Water dispersible) and Jumbo (floating granules, containing active ingredients, wrapped in a soluble film). This helps in ways such as reducing packaging materials, waste products, and CO<sub>2</sub> emissions from manufacturing and shipping.



▲ Comet WG



▲ Tenku Jumbo

## Chemicals

### 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. We supply AdBlue® in line with each customer’s needs, in tank trucks, 200L drums, 1m<sup>3</sup> containers, or BIB (bag-in-box, 20L, 10L).



▲ AdBlue®

### HI-LITE®

HI-LITE® is widely used to assist with environmental sanitation, for purposes such as disinfecting and sterilizing pools and septic tanks. Having obtained certification under NSF/ANSI-60 (the standard for chemicals intentionally added to drinking water), there is new scope to expand the range of applications for HI-LITE® for sterilizing drinking water. Such as applying in areas where standards of sanitation are insufficient, particularly in developing countries.



▲ Hygienic water supplies (illustration purposes only)

## Advanced Materials & Planning

### ECOPROMOTE® Series

ECOPROMOTE® is a crystal nucleating agent for polylactate. Combining the properties of a bioplastic, made from plant instead of oil, and a biodegradable plastic that is broken down into water and carbon dioxide by microorganisms, polylactate is the foremost carbon neutral synthetic resin in terms of practical application. Uses are nonetheless limited due to issues relating to moldability and heat resistance. ECOPROMOTE® stimulates the growth of polylactate crystals, and can be used for high speed injection molding or extrusion molding without affecting transparency. As a result, it is increasingly being used for durable purposes such as electronic devices, printers and filaments in 3D printers.



▲ 3D printer

## Performance Materials

We will continue to expand the business by actively developing display, semiconductor, and inorganic materials, as well as new materials for new fields.

### Display Materials

We continue to develop our display materials business, spearheaded by SUNEVER® polyimide-based LCD alignment coating materials and NHC® insulating hard coating materials, by catering to the growing needs of the display market, particularly in Asia.

### Semiconductor Materials

We provide ARC® (bottom anti-reflective coating materials) necessary for semiconductor manufacturing process. We also work to expand our business by developing multilayer process materials and temporary bonding materials.

### Inorganic Materials

We have continuously developed nano-colloids to a variety of industries for many years using “Ultrafine Particle Control technology”, one of our core technologies. We strive to supply our main product, SNOWTEX®, and other products.

### New Products

Our development focuses on next generation products that identify the future needs of customers.

## Features of Our Business

### Electronic Materials

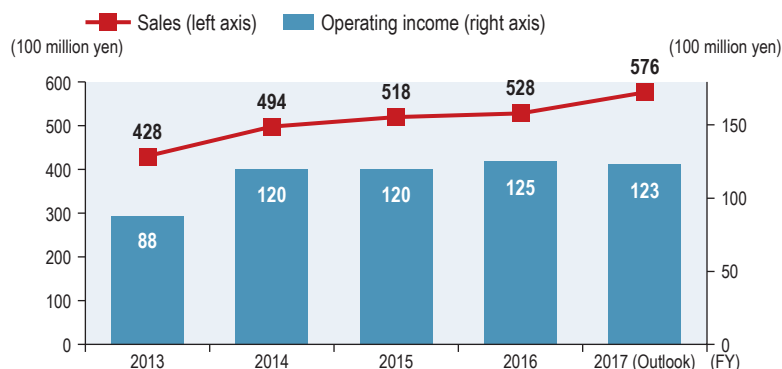
- Promoting R&D in an integrated manner with customers in Japan and overseas countries
- Bases established in Japan, Korea, Taiwan, and China that target the continuously growing field of electronic materials in the Asian market

### Inorganic Materials

- Development of a wide range of applications that take advantage of the features of high performance colloid products
- Prompt response to customers through collaboration between sales, manufacturing, and research teams



## Business Results and Outlook



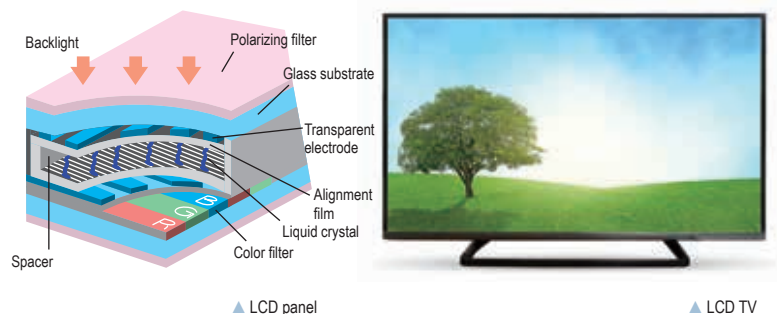
Comment

In Display Materials in FY2016, SUNEVER® sold well for small- and medium-sized devices such as smartphones. In terms of Semiconductor Materials, sales of multi layer process materials were affected by reduced operating rates from selected customers. In Inorganic Materials, we saw a decline in sales of SNOWTEX® for general purposes, and also in organo silica sol.

## Main Products

### SUNEVER®

SUNEVER® is a polyimide-based coating for LCD / flat panel displays. It is used to coat the surface of the outer glass panels, to align liquid crystal molecules in a certain direction. We offer various grades of this product for small- and medium-sized screens, such as LCD monitors, PCs, tablets and smartphones, in addition to those for the latest flat-panel LCD TVs.

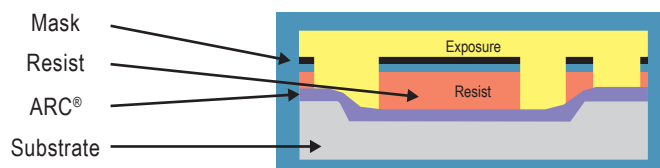
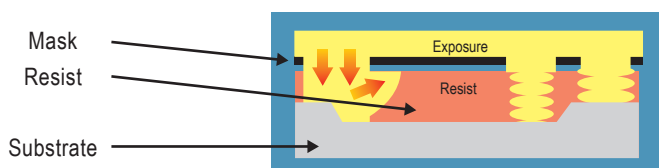


▲ LCD panel

▲ LCD TV

### ARC® (bottom anti-reflective coating)

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.



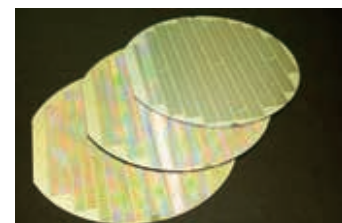
Effects of anti-reflective coatings

### SNOWTEX® / Organo silica sol

SNOWTEX® is a colloid solution with nano-sized silica particles dispersed stably in water. Organo silica sol is the same product but dispersed in an organic solvent. Making the most of their diverse capabilities, these products are used across a wide range of different fields, including coating agents for optical films and printers, and polishing agents for electronic substrate materials and electronic recording media.



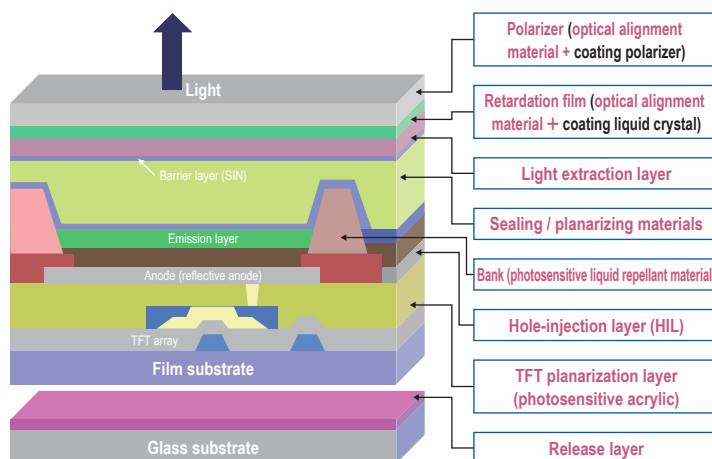
▲ Tablet device



▲ Silicon wafer

### OLED materials

We are focusing developing markets for OLED, which is expected to grow in the future as a next-generation display. In addition to coating hole-injection layer materials and TFT planarizing film materials, we are currently moving forward with the development of distinctive peripheral materials, including bank materials that help ensure the uniformity of pixels during inkjet application, and optical alignment materials used for anti-reflective retardation films.





## Agricultural Chemicals

Provide a stable supply of food to people around the world. Provide agrochemicals that are environmentally friendly. This is what we aim to do.

We seek out and develop new agents for mainstay crops around the world as well as those in Japan. We also develop agents in collaborative efforts, and actively acquire agents from other companies. We constantly work to expand our product lineup and sell our products in Japan and other countries.

### Agrochemicals

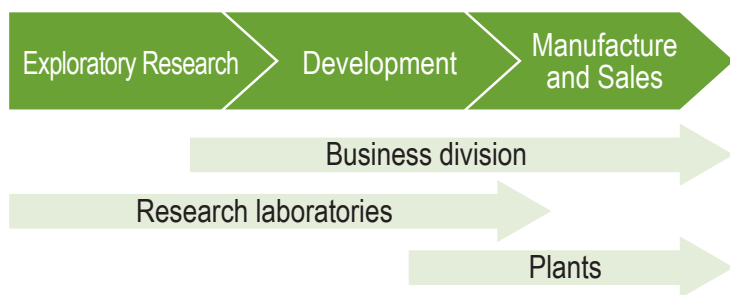
We develop, manufacture, and sell herbicides, insecticides, fungicides, and other products used for the management of agricultural land and green land.

### Veterinary Pharmaceuticals

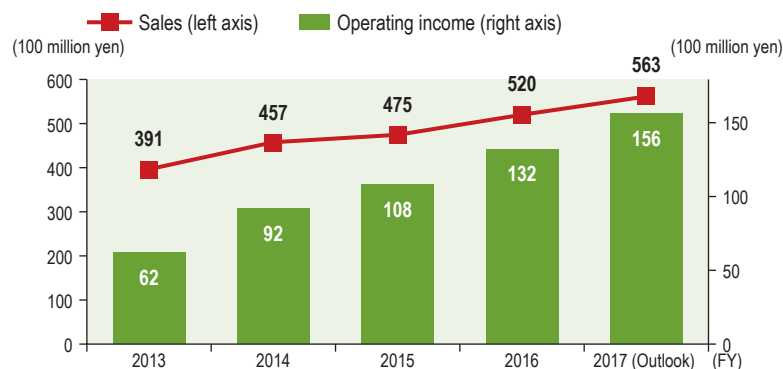
We develop and manufacture active pharmaceutical ingredients used in ectoparasiticides for companion animals.

## Features of Our Business

Integrated System from Exploratory Research, Development to Manufacture and Sales



## Business Results and Outlook



Comment

In FY2016, we recorded strong sales of ALTAIR® both domestically and overseas. Increased sales of ROUNDUP®, the launch of ROUNDUP® MAXLOAD AL II for the household market, and the release of agricultural herbicide TREFANOCIDE® also contributed to an increase in revenue. BRAVECTO® chewable tablets for dogs are now on sale in 80 different countries, and we have also started selling spot on products for dogs and cats, as we continue to steadily increase shipments of Fluralaner.

\* TREFANOCIDE® is a registered trademark of Gowan Crop Protection Limited.

## Main Products

### Herbicide

#### ALTAIR®

ALTAIR®, an active ingredient in herbicides for paddy rice, is a wide-spectrum herbicide with 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, Korea, and China.



▲ ALTAIR®

## ROUNDUP® MAXLOAD, ROUNDUP® MAXLOAD AL, ROUNDUP® MAXLOAD ALII

In 2002, we acquired the exclusive marketing rights to this product in Japan from Monsanto. While this herbicide kills most weeds, it has low toxicity to humans and animals and does not remain in the soil or in the environment. Because of these benefits, this herbicide is popular all over the world. From 2011, we added ROUNDUP® MAXLOAD AL to the product line-up. Created for general households, this product features a container with a shower head and can be used without needing to be diluted.

### SIRIUS®

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. We have been marketing these products in more than 20 countries for over 20 years.

### TARGA®

This herbicide controls gramineous weeds that affect broadleaf crops such as soy beans, rapeseed, beets, cotton, and sunflowers. It is used in more than 40 countries, including India and countries in the United States and Europe.

### PERMIT®

Taking advantage of the fact that it is extremely effective against cyperaceous weeds, we market this product 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. We also market it as PERMIT® in more than 20 overseas countries as an herbicide for paddy rice, corn fields, sugar cane fields, and lawns.

## ■ Insecticide

### STARMITE®

This acaricide prevents and eliminates spider mites from fruits, tea, and vegetables. It is extremely safe for the natural enemies of spider mites and useful insects such as honey bees. It is also popular in overseas countries. In Korea it is used for fruits and vegetables, and in South America it is used for flowers.

### SANMITE®

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.

## ■ Fungicide

### LEIMAY®, ORACLE®

These fungicides have specific activity for diseases caused by oomycetes and myxomycetes. We sell LEIMAY®, which is used as an atomizing agent for potatoes, grapes, and vegetables, and ORACLE®, which is used for preventing and eliminating the root-knot disease of cruciferous vegetables and soil-borne diseases of potatoes, rice, vegetables, and lawns. BEGREEN® meanwhile is designed to prevent diseases in lawns, and is sold in more than 20 countries, including South Korea, China and parts of Europe.

### GREATAM®, PULSOR®

These products contain a fungicide that we acquired from Dow AgroSciences in 2010. We market GREATAM® for the sheath blight disease that affects paddy rice and IKARUGA® for large patch disease of lawn. We export and sell this product in overseas markets including China, Korea, India, and Brazil under the trade name of PULSOR®.

## ■ Active Ingredients for Veterinary Pharmaceutical

### Fluralaner

A compound that we invented in-house, Fluralaner is one of the ingredients contained in BRAVECTO® (veterinary pharmaceuticals), developed by MSD Animal Health. We manufacture Fluralaner and then supply it to MSD Animal Health for use in as active ingredients for veterinary pharmaceuticals.



▲ ROUNDUP® MAXLOAD AL

▲ ROUNDUP® MAXLOAD ALII



▲ STARMITE®



▲ LEIMAY®



▲ BRAVECTO®

# Pharmaceuticals

We strive to develop better pharmaceuticals by making use of our accumulated technology. Our products help preserve precious lives and deliver smiles to people around the world.

## Drug Discovery

We first entered the pharmaceutical business in 1982. 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.

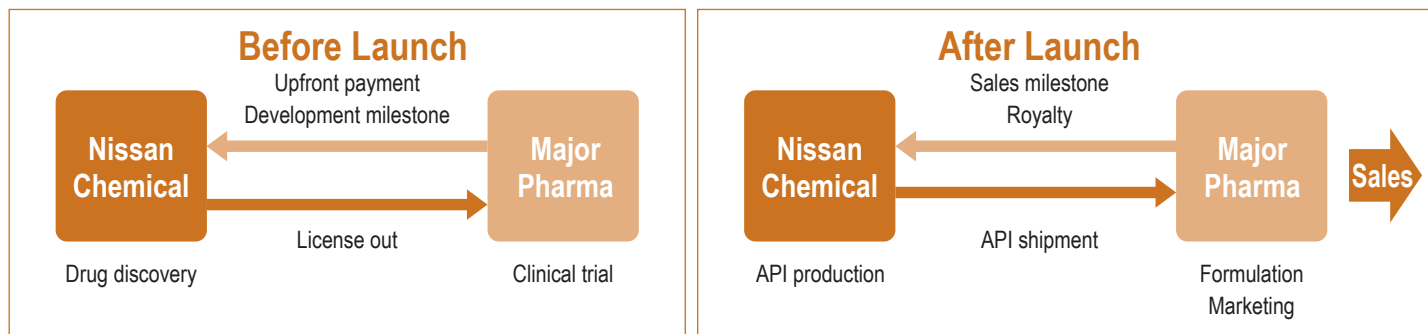
## Finetech®

This business provides total support to customers for their R&D of active pharmaceutical ingredients (API). Specifically, we engage in the contracted development of manufacturing process in each one of the stages from pre-clinical to commercial production, as well as the contracted manufacture of API and intermediates in compliance with GMP.

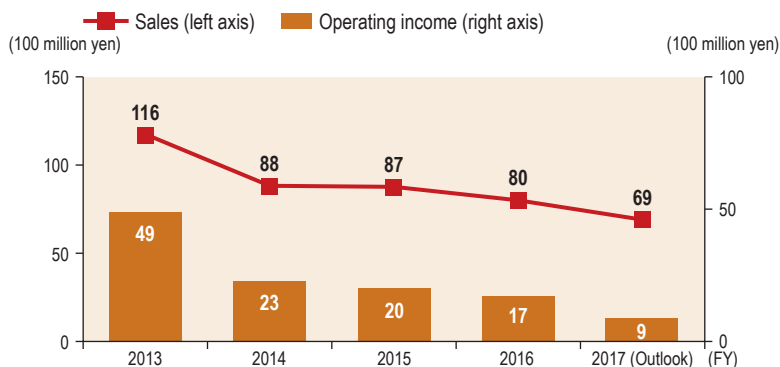
## Features of Our Business

A Unique Business Model That Specializes in New Drug Discovery and the Manufacture of API without a Sales Force

### Business Model



## Business Results and Outlook



Comment

While sales of LIVALO® continued to grow on the overseas market in FY2016, figures were down in the domestic market due to the increasing availability of generic products. Sales of Finetech® were strong. We also brought in revenue from a lump-sum payment resulting from a joint research agreement with Mitsubishi Tanabe Pharma Corporation, relating to the development of new drugs for autoimmune diseases.

## Main Products

### Pitavastatin calcium (LIVALO®)

This is a statin agent that greatly reduces LDL cholesterol and causes fewer drug-interactions, offering the advantage of safety. This agent is recognized as one of the "strong statins" in clinical practice, and it is distributed by Kowa Pharmaceutical Co. Ltd. in Japan. It has also been released in the United States, as well as Latin American, European, and Asian countries. There are plans to release it in other countries and territories in the future.

### Efonidipine hydrochloride (LANDEL®, FINTE®)

This is a dual type Ca antagonist that blocks not only L-type calcium channels, but also T-type channels. This agent has shown to have a positive effect on hypertension and angina pectoris. In addition, the agent is expected to provide a renal-protective and cardio-protective benefits. LANDEL® is distributed by Zeria Pharmaceutical Co., Ltd. and Shionogi & Co., Ltd. in Japan, and FINTE® is distributed by Green Cross Co. in South Korea.



▲ LIVALO®

## Novel Agent under Development

### NIP-022 (thrombocytopenia treatment agent)

This activates the thrombopoietin receptor, which is a hematopoietic factor. This is orally administrable drug and enables to accelerate platelet production. It has the potential to be a drug for treating every kind of thrombocytopenia.

### NT-702 (asthma care, arteriosclerosis obliterans treatment agent)

This orally administrable drug exhibits both a phosphodiesterase inhibitory effect and a thromboxane A2 synthetase inhibitory effect. It is expected to be used as a novel agent for asthma and intermittent claudication associated with peripheral arterial disease.

### NTC-801 (anti-arrhythmic agent)

This is a new orally administrable antiarrhythmic agent that inhibits the acetylcholine-activated potassium channel current (IKACH). NTC-801 is expected to be used as an atrial selective agent for the treatment of atrial fibrillation because IKACH channels are apparent in the atrium but not in the ventricle.



▲ Compound library at Biological Research Laboratories

## Finetech® Business

### Manufacturing API and intermediates (from pre-clinical to commercial production stages, including manufacturing in compliance with GMP)

We manufacture API and intermediates by establishing manufacturing methods that can be scaled up.

### Process research (route scouting, optimization and scale-up)

We establish production processes that can be scaled-up through quantitative reaction analysis and confirming the stability data of every process. We suggest cost-competitive synthesis routes by only disclosing the structural formula.

### Supplying API of generics

We develop and sell API capable of high levels of activity in small amounts, such as the prostaglandin (PG) class of ingredients and vitamin D<sub>3</sub> (VD<sub>3</sub>), by making use of our accumulated technologies for handling high active API and our column equipment capable of high levels of refinement.



▲ Finetech® development plant

# Chemicals

The development of products focused on high-level customer needs is another important mission.

## Basic Chemicals

We provide products to meet a wide range of demands, focusing on melamine, sulfuric acid, nitric acid, ammonia and other industrial chemicals. We also provide high purity chemicals for washing semiconductors.

## Fine Chemicals

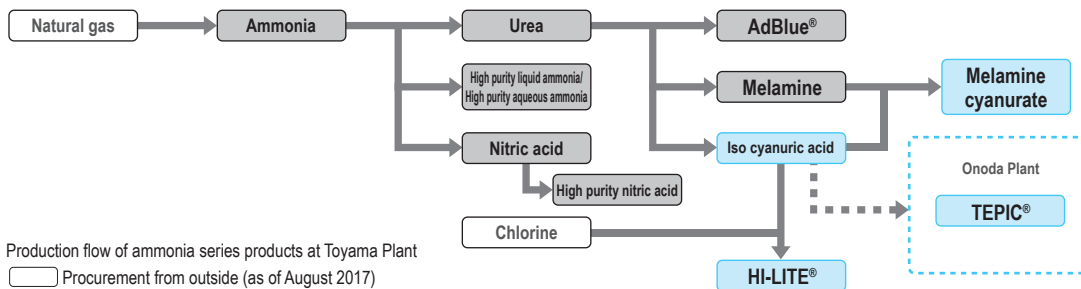
This business focuses on environmental chemicals such as TEPIC® (a special epoxy compound for sealants), melamine cyanurate and PHOSMEL® (non-halogen flame retardants), phenylphosphonic acid (a surface modifier), and HI-LITE® (sterilizing agent and disinfectant).

## New Products

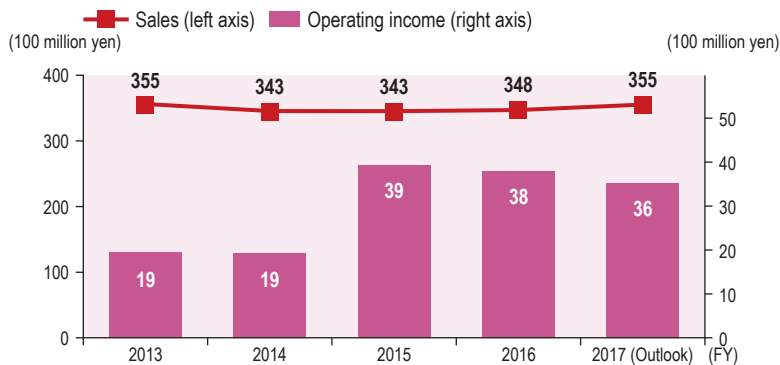
To better meet customer needs, we are working to fully enhance our product lineup, which focuses on new grade TEPIC®.

## Features of Our Business

### Supplying Derivatives that Use Ammonia as Main Raw Material



## Business Results and Outlook



**Comment**  
 Despite maintaining healthy export sales of melamine, fixed costs for basic chemicals increased in FY2016 due to capital expenditure on initiatives such as switching feedstocks for ammonia. In terms of fine chemicals meanwhile, we saw an increase in revenue from HI-LITE® and TEPIC®.



## Main Products

### Melamine

This is widely used as an adhesive agent for plywood, laminated sheets, molded products, resin finish for fabric, paper and paint. It is highly aesthetic and offers a substantial level of quality.

### High purity chemicals

Our products used for semiconductors / LED require an extremely high level of purity. We provide sulfuric acid, nitric acid, and ammonia to customers, who hold our products in high regard.

### AdBlue® (High-grade urea solution)

This is a solution of urea in demineralized water used as an operating fluid in diesel-powered freight trucks to purify emissions. We have established and expanded our original supply system addressing customer needs.

### FINEOXCOL®

This is our unique, highly branched, saturated fatty alcohols and acids product with a long chain alkyl group consisting of carbon 16 to 20. It has been used for various esters, lubricants, cosmetics, and ink modifiers.

### TEPIC®

This tris (2, 3-Epoxy propyl) isocyanurate is a special tri-functional epoxy compound consisting of a triazine ring and three glycidyl groups. The triazine ring provides excellent outdoor durability due to its low UV absorption, while the glycidyl groups provide outstanding heat resistance by densely cross-linking with resins.

### Melamine cyanurate (MC)

This is a compound of melamine and isocyanuric acid. We provide a high quality product by integrating production from raw materials. MC is highly nitrogen containing compound, which offers superb thermal stability up to 300°C. It is used as a flame retardant or an auxiliary flame retardant for various engineering plastics such as nylon resins. It also exhibits outstanding flame retardation when used with flame retardants such as phosphorus systems or metal hydroxide, and has been added to various plastics.

### HI-LITE®

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.

### Nissan Reishi

Nissan Reishi is a safe Japanese-made health food created through the domestic processing of Reishi mushrooms grown in Japan.



▲ Plywood



▲ LED



▲ AdBlue® trucks



▲ HI-LITE® in use



▲ Reishi

## Advanced Materials & Planning

Tackling challenges in new fields with an “undaunted spirit”

Our mission is to create new materials and businesses that will be our pillars for future growth of Performance Materials and Life Sciences business. We work on developing new materials that meet market needs by making full use of our core technologies, “Fine Organic Synthesis”, “Functional Polymer Design”, “Ultrafine Particle Control” and “Biological Evaluation”. We also promote collaboration between industry, government, and academia, such as alliances with distinguished companies and joint research with universities, to generate actual demand at an early stage.

## Main and New Products

### Life Sciences Materials

#### Cell culture material

We offer the FCeM<sup>®</sup> series and SphereMax<sup>®</sup> as base materials for three-dimensional cell cultures. Used to culture cells in a three-dimensional state, these products can adjust cells efficiently while mimicking the in vivo environment.

The FCeM<sup>®</sup> series has been adapted for the evaluation of anticancer drugs because it is capable of culturing large amounts of iPS / ES cells as well as cancer cells. Just like the FCeM<sup>®</sup> series, SphereMax<sup>®</sup> allows for the low adhesion culture of cancer cells. Evenly dispersed spheres sink to the bottom, making it easy to collect the cultured cells. This makes the SphereMax<sup>®</sup> useful for sphere formation assay and 3D imaging analysis.



▲ Cells suspended in culture media

#### NANOFIBER GEL<sup>®</sup>

This gelator comprises palmitic acid and dipeptide, and is friendly to people and the environment. It changes from a gel (solid) to sol (liquid) in response to stress. It can be prepared in different forms, such as a spray, cream, and stick. Adding active ingredients such as hyaluronic acid to the gel has the effect that ingredients penetrate into the skin more slowly. We are continuing to develop products for cosmetics, quasi-drugs and pharmaceuticals.



▲ Spray



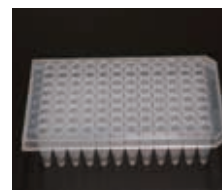
▲ Cream



▲ Stick

#### prevelx<sup>®</sup> (Material for Preventing the Adhesion of Biomolecules)

Applicable from experiments and research to regenerative medicine, it is an ultra-thin film material with nanometer-level thickness which allows the easy coating of objects of various shapes. It can be coated on PP, COP, PDMS and other base materials that had been difficult to coat. We are seeking new customers in the medical equipment field with characteristics such as prevention of the adhesion of DNA and other biomolecules as well as cell adhesion and protein adsorption.



▲ Consumables for pharmaceutical research

## Environmental Harmony Materials

### ECOPROMOTE® (crystal nucleating agent for polylactate)

It forms a stable crystal nucleus during the polylactate molding process to significantly increase the speed of crystallization. It produces fine, even crystals, helping to improve the molding cycle and enhance the heat resistance and transparency of molded products.



▲ Bioplastic products (illustration purposes only)

## Optical Materials

### SUNCONNECT®

Liquid organic-inorganic hybrid resin materials that exhibit high thermal stability and near-infrared transparency. 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.

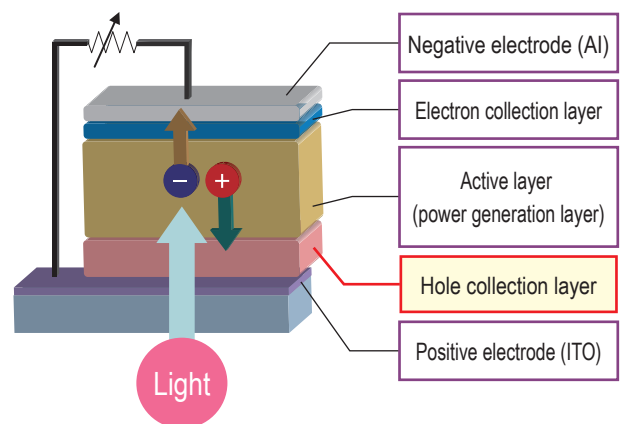


▲ Optical printed circuit board (illustration purposes only)

## Battery Materials

### Organic Thin-film Solar Cell Material

We are developing the hole collection layer of organic thin-film solar cells. The hole collection layer collects holes from excitons generated in the active layer, and then transports them to the cathode. At the same time, it blocks the inflow of electrons. It plays an important role in improving power generation efficiency. We will accelerate market development by taking advantage of the features of our materials, such as the capability of forming highly flat thin films, preparation at the HOMO level, and compatibility with various printing methods.



▲ Example for Organic Thin-film Solar Cell

### Secondary Battery Materials

We are working to develop undercoat materials for use in lithium ion batteries. Applying coating materials to current collectors improves the flow of electricity, which in turn makes it possible to develop low resistance, high output batteries. This is chiefly targeted at vehicle batteries, which require higher levels of output, capacity and safety.



▲ Electric vehicle

## Research and Development

We strive to further refine the core technology we have cultivated throughout our long history, and develop new products, technologies, and businesses.

### Chemical Research Laboratories

Chemical Research Laboratories is Nissan Chemical's core R&D site, and is responsible for our corporate research. It researches and develops agricultural chemicals and pharmaceuticals that utilize the fine organic synthesis technology we have cultivated over the years, research on company-wide processes, and material analysis research.

#### Major research contents

- Discovery of agrochemicals and pharmaceuticals, and the development of agrochemical formulations and active pharmaceutical ingredients
- Development of new organic materials and polymer materials
- Process development of new products and candidates
- Material analysis and computational science that support research



▲ Funabashi, Chiba

### Materials Research Laboratories

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

#### Major research contents

- Material development based on technologies for the design, synthesis, and evaluation of functional polymers and composite materials
- Development of new materials intended for new display technologies and semiconductor process technologies
- Manufacturing research and the application development of materials such as inorganic particulates



▲ Funabashi, Chiba



▲ Sodegaura, Chiba



▲ Toyama, Toyama

### Biological Research Laboratories

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

#### Major research contents

- Efficacy tests, safety tests, and residue tests of agrochemicals in greenhouses and on farmland
- Pharmacological tests, safety tests and pharmacokinetics tests of pharmaceuticals, ranging from those on the gene level to those based on pathological models
- Development of medical materials such as cell culture media, stem cell amplifiers, and coating materials for medical equipment



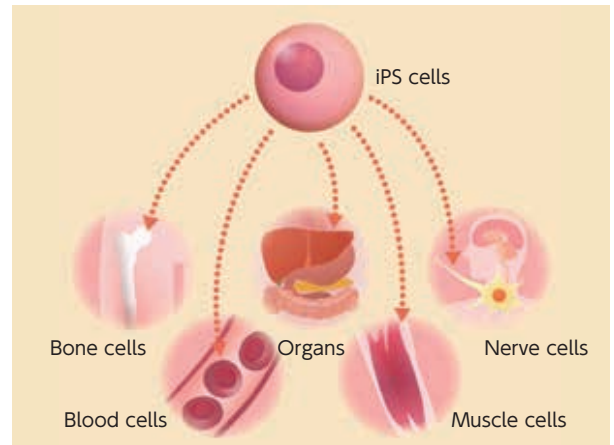
▲ Shiraoka, Saitama



## Promotion of Industry-Government-Academia Collaborations

While we deepen our proprietary technologies, we also promote the creation of new materials and introduction of new technologies through industry-government-academia collaborations. As part of these activities, we are participating in a project of the Japan Agency for Medical Research and Development (AMED), which was founded in April 2015, and are working on the development of a cell manufacturing and processing system for the industrialization of regenerative medicine. We are conducting joint development with Kyoto University, and have discovered a technology that leads to the low-cost manufacturing of iPS cells. We will continue contributing to the development of regenerative medicine while also proceeding with state-of-the-art research.

In the area of collaboration between industry and academia, we have been involved in research through comprehensive collaboration with Kyushu University since April 2006. This collaboration aims to create new materials through functionalization and application research, which is conducted by combining the seeds (materials) owned by us with advanced technologies owned by the university. In addition to the previously described efforts, we engage in R&D activities around the world. We collaborate with overseas universities and participate in an international consortium.



▲ Regenerative medicine (illustration purposes only)

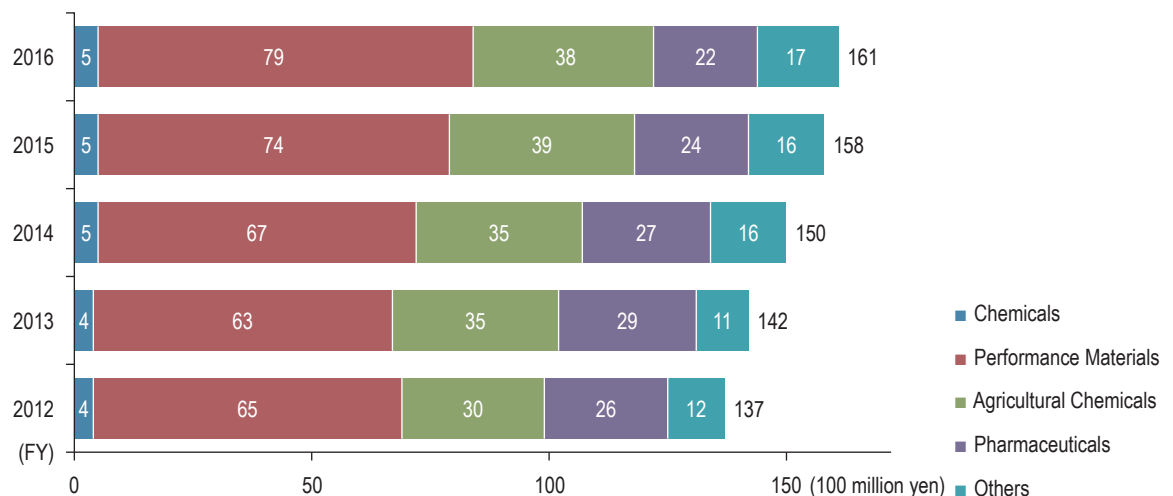


▲ Fukuoka Industry-Academia Symplicity

## 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 74.8 billion yen. The percentage of our expenses in Performance Materials and Life Sciences (Agricultural Chemicals and Pharmaceuticals) is accounting for 47% and 41% respectively.





## Promotion of CSR

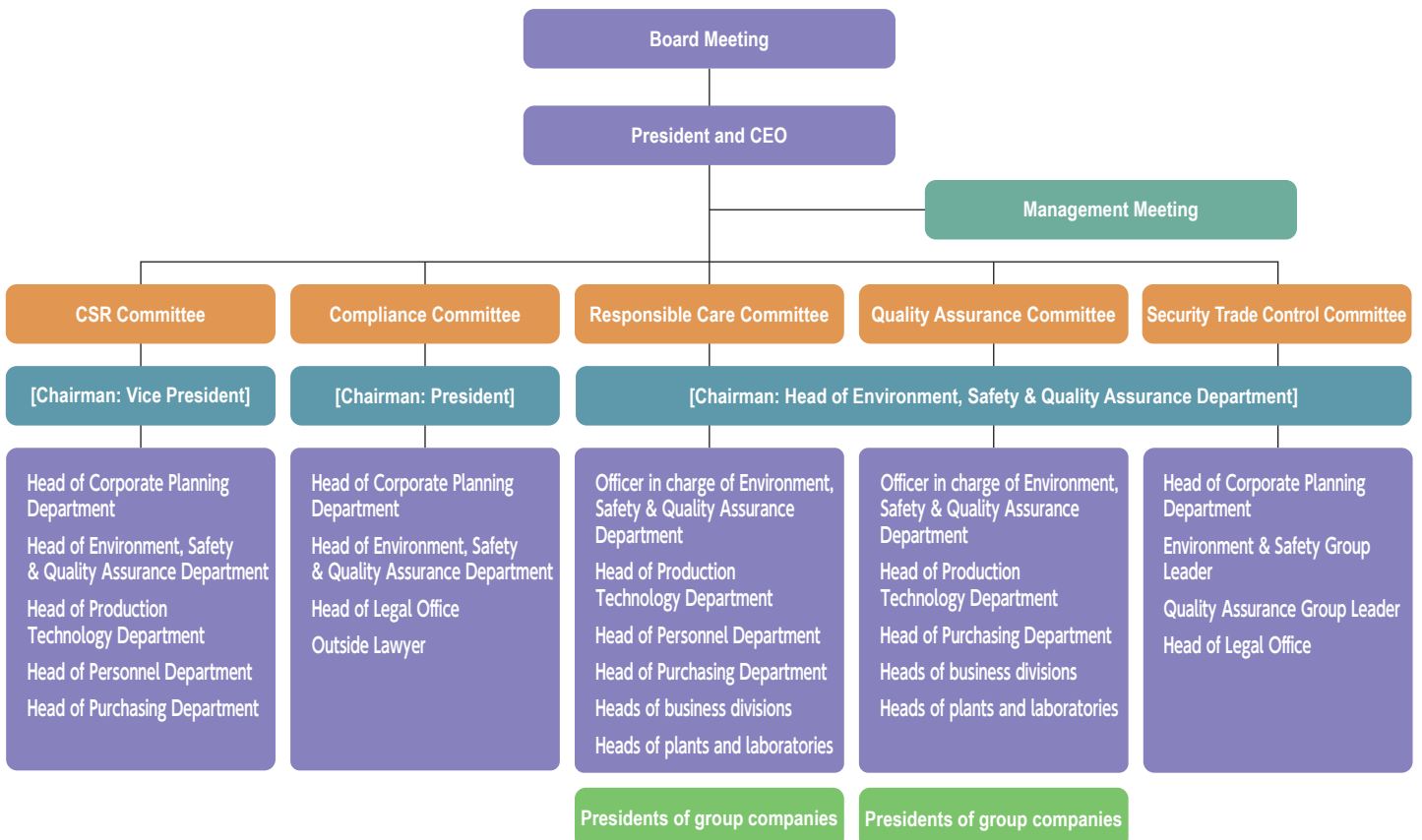
Our group considers that the corporate philosophy “We contribute to society in harmony with the environment, based on our excellent technologies, products and services” is the basis of our business activities. We reviewed our CSR promotion system and established the CSR Committee in April this year to enhance our CSR activities. The activities of this committee include the development of mid- and long-term plans and annual plans related to CSR, and the evaluation of the results of the activities. The committee reports its activities to board meetings twice a year.

At the same time, we established the “CSR & Public Relations Office” under the Corporate Planning Department. The missions of this new office are “to draw up CSR strategies in response to social trends, to raise awareness of CSR internally, and to send relevant information”. This office will provide internal and external stakeholders with information about the company, including the contents of our CSR activities, in an appropriate manner.

### 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.

## CSR Promotion System



# Corporate Governance

We think of corporate governance as a mechanism that ensures sound, efficient management to provide stakeholders with sustainable, 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 system, risk management system, and internal control system under our board meeting and board of corporate auditors, whose members include highly independent outside officers.

In addition, we have put into practice all of the principles stipulated in the Corporate Governance Code, which was established by the Financial Services Agency of Japan and Tokyo Stock Exchange, Inc.

## Our Corporate Governance System

### 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 Meeting

Our board meets once a month, 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 meetings to enhance the supervising function of the board meeting.

### Internal Audit

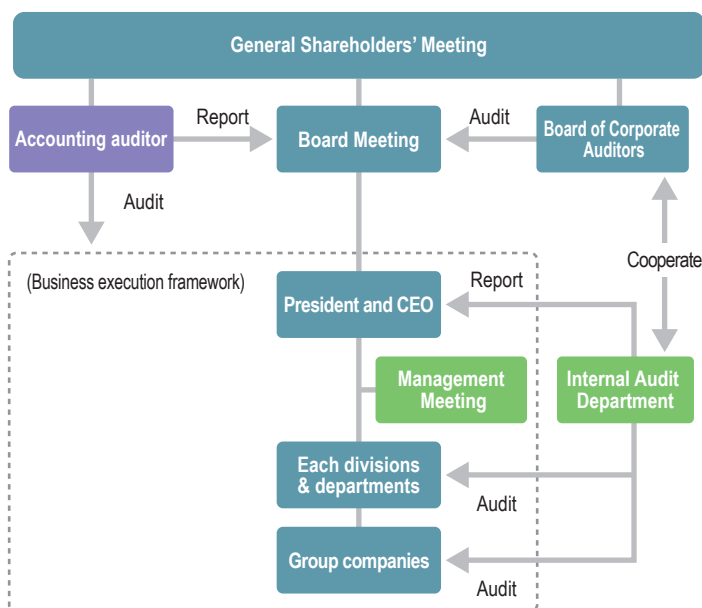
We have the Internal Audit Department, which conducts fair and independent internal audits in accordance with the Internal Auditing Regulations. Business activities are checked by the Finance & Accounting, Legal, Intellectual Property, and Environment, Safety & Quality Assurance Departments, with each applying its respective expertise.

### Audit by Corporate Auditors

Corporate auditors audit the execution of directors' operation by participating in the board meetings and other important meetings in accordance with auditing plans formulated by the board of auditors. They also ensure the appropriate level of cooperation with stakeholders.

### Accounting Audit

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



### 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 meeting, enabling them to give effective advice on management policies and management improvement measures and supervise the management. 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' meeting, and other meetings, help outside corporate auditors conduct audits, and collect and provide information to them.

## Number of Major Meetings and Attendances (FY2016)

Board Meeting	12 times	Board of Corporate Auditors' Meeting	12 times
Attendance of outside directors at board meetings	100%	Attendance of outside corporate auditors at board of auditors' meetings	100%
Attendance of outside corporate auditors at board meetings	100%		

## 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 shareholders' meeting. In addition, nominations of corporate auditor candidates are approved by the board of corporate auditors in advance.

	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. Accordingly, 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 above business activities and supervise the execution of operations in an appropriate and flexible manner.</p> <p>&lt;Internal 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	2(2)
Corporate Auditors	Human resources with experience and knowledge in a wide range of fields including finance & accounting 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(1)

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

## Policy on Determination of Officers' Remuneration

The fundamental principle in the determination of officers' remuneration is to maintain a system of remuneration 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 within the total amount determined by resolution of the general shareholders' meeting at the board meeting attended by outside directors as well. The remunerations of individual corporate auditors are determined through discussions by the corporate auditors.

## Analysis and Evaluation of the Effectiveness of the Overall Board of Directors (Effectiveness Evaluation)

Every year, we conduct a questionnaire survey of all of our directors to see whether the board of directors is fulfilling its roles and duties. Based on the responses to the questionnaire, we undertake an analysis and evaluation at an opinion exchange meeting (of all independent officers, the president, the vice president and head of the Corporate Planning Department). The contents of the analysis and evaluation are deliberated and confirmed at the board meeting.

As a result of the effectiveness evaluation in FY2016, it was judged that the overall operation of the board of directors of the company is mostly appropriate and its effectiveness is secured from the viewpoint of whether it is fulfilling its major roles and duties. However, it was determined that, to aim for further improvement in the following points, the level of achievement of each of them will be checked and improvement measures will be taken as necessary from the next fiscal year onward.

### Major improvements to be undertaken in the future

- Creating a system that will allow directors, including outside directors, to hold discussions and exchange opinions in an even more unrestricted manner
- Undertaking thorough deliberations regarding preparations for risks and negative aspects
- Recruitment of women and external human resources with extensive experience in business administration

The major roles and duties of the board of directors are described in our corporate governance report.  
[http://www.nissanchem.co.jp/eng/profile/corporate\\_governance.pdf](http://www.nissanchem.co.jp/eng/profile/corporate_governance.pdf)

# Compliance

Regarding compliance with legislation and social norms to be a prerequisite for our continued survival and development as a company, we have established a “Compliance Committee” as the organization for actively promoting, maintaining and improving compliance throughout the entire group. The committee is chaired by the president and consists of members that include outside specialists.

The Compliance Committee specifies the matters to be observed by the Group’s employees, revises guidelines and creates manuals. It also receives reports from each division / department chief, plant / laboratory chief, related committees and presidents of subsidiaries. In addition, it periodically audits the state of compliance and provides recommendations for improvements when necessary. The committee also holds explanatory sessions on various laws and regulations and compliance, with the secretariat playing the leading role, in its efforts to ensure compliance with laws and regulations.

## Matters to be Observed Stipulated in the Compliance Manual

We have specified the matters to be observed from various points of view, including the prevention of corruption.

### Restrictions on acts of endowment and political donations

- (1) Political donations and donations to various organizations must be made by observing the relevant laws and regulations, such as the Public Offices Election Act and the Political Funds Control Act, and by following the proper methods.
- (2) Prior approval must be obtained by following internal rules before donating money or making any other donation.
- (3) Sound, transparent relationships with politicians and the government must be created by refraining strictly from actions that may lead to the misunderstanding that we have cozy relationships with them, not to mention bribery, payoffs, and illegal political donations.

### Prohibition of excessive entertainment and gift-giving

- (1) Entertainment and gift-giving for public officials or quasi-public officials that contravene the regulations under the National Public Service Ethics Act, etc. are prohibited.
- (2) Entertainment and gifts to business partners must be given within the bounds of common sense of the general public.
- (3) Response to entertainment or a gift offered by our client or business partner, etc. must not be made before consulting our superiors when the entertainment or the gift is suspected to be beyond the bounds of common sense of the general public.

### Prohibition of bribery of foreign public officials

It is prohibited to provide foreign public officials, etc. with money or any other favors to gain illegal profits in the course of business or in return for favors provided by them in business, either directly or via a third party such as a consultant. It is also prohibited to promise or offer to provide such favors.

Matters to be observed that are stipulated in the compliance manual are described at <http://www.nissanchem.co.jp/eng/profile/compliance.html>

## Measures for Promoting Compliance (FY2016)

Internal training (explanatory sessions): Act against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors, Insider Trading Regulations, General Data Protection Regulations

Response to Guidelines for the Prevention of Bribery of Foreign Public Officials: Internal notification of the law, revision to the compliance manual

Response to the revised Act on the Protection of Personal Information: Revision to the Regulations for Information Management

### Consultation Hotline

We have a system that permits direct whistleblowing to the Compliance Committee.

When an employee discovers a compliance violation or potential compliance violation, they shall address the problem in normal operations, in principle, through measures that include reporting the matter to their superior. However, if they think it is difficult to address the problem promptly and effectively, they can use the hotline to prevent compliance

violations or resolve the problem early on. Whistleblowers can remain anonymous and if they state their name, we make sure that they are not disadvantaged by the use of the hotline.

In FY2016, there were no cases of whistleblowing. We inform employees of the system via our in-house newsletter.

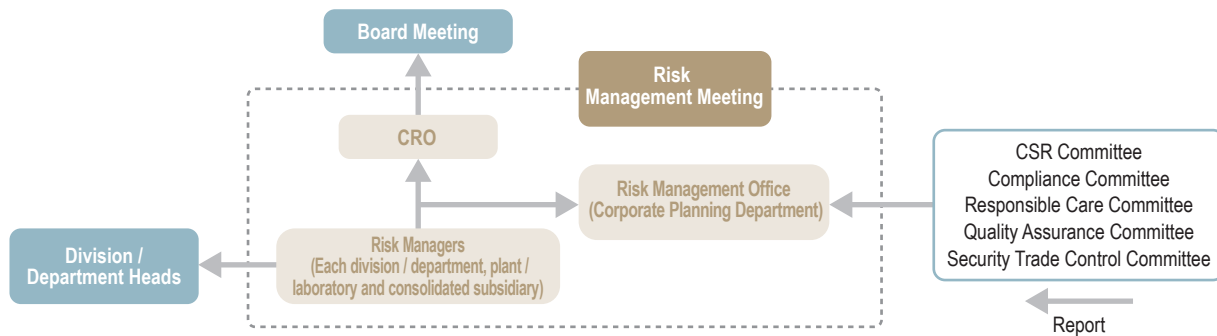
Consultation Hotline Reports (Number)	FY2012	FY2013	FY2014	FY2015	FY2016
	0	2	1	1	0

# Risk Management

We have established risk management guidelines with basic rules on risk management to prevent the emergence of various risks to the Group that could affect the achievement of the following items, and minimize the damage and impact of these risks should they arise.

1. Ensuring the safety of human resources	3. Sound maintenance of assets	5. Optimizing business opportunities and opportunities to make achievements and avoiding the loss of these opportunities
2. Surviving as a company	4. Maintaining trust of stakeholders	6. Ensuring compliance and pursuing efficiency, accuracy and effectiveness in the execution of operations

## Risk Management Framework



We appoint risk managers to divisions, departments, plants, laboratories and group companies under the overall control of the Chief Risk Management Officer (CRO) appointed by the board of directors. We run the Risk Management Meeting with the Corporate Planning Department serving as the Risk Management Office.

At the Risk Management Meeting, we cooperate with specialized committees in identifying and assessing risks in individual organizations, examining the status of the implementation of countermeasures, strengthening systems for handling crises and emergencies, and formulating a business continuity plan (BCP). In addition, we share the risk management information of the entire group through the annual plan, the annual review of risk management activities and reports from all organizations. The status of risk management is reported regularly to the board meeting via CRO.

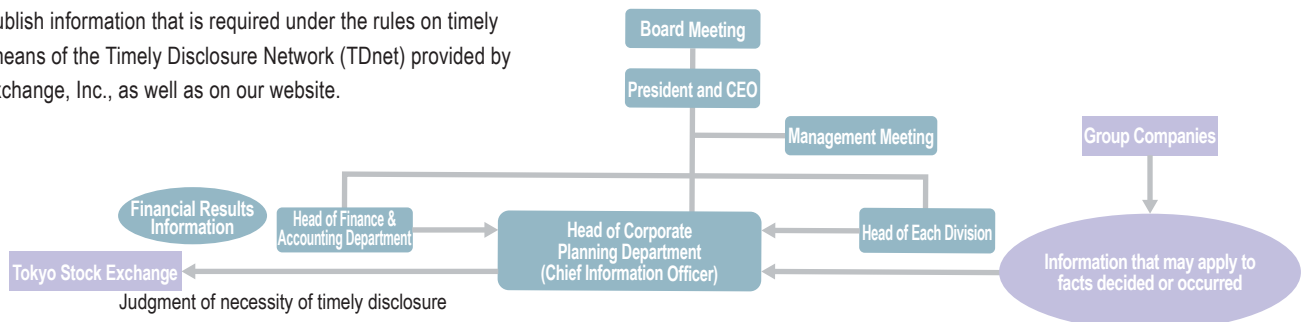
### Major Initiatives in FY2016

- Checking the status of BCPs of important businesses and reviewing them
- Strengthening overseas risk management
- Provision of training on initial response by the emergency headquarters of the head office, and training on safety confirmation

# Information Disclosure

## Timely Disclosure System

We promptly publish information that is required under the rules on timely disclosure by means of the Timely Disclosure Network (TDnet) provided by Tokyo Stock Exchange, Inc., as well as on our website.



## Environmental Reporting Platform Development Pilot Project

As a measure for disclosing environmental, social and governance (ESG) information, which has been increasingly demanded by institutional investors in recent years, we disclose information by participating in the "Environmental Reporting Platform Development Pilot Project", which is led by the Ministry of the Environment of Japan.



# Value Chain

## Supply Chain Management

We have established a policy on the procurement of raw materials and materials. We work on priority topics of CSR together with our business partners in our efforts to fulfill our corporate social responsibility.

Before outsourcing an operation such as the manufacture of important raw materials, intermediates and products, we ask the potential contractor to answer a questionnaire on CSR. We give priority to companies which fulfill our standards when selecting business partners. We also conduct on-site audits of suppliers in Japan and overseas to check their initiatives for CSR activities in detail, with a particular focus on their activities related to the environment, health and safety (EHS) in our efforts to promote supply chain management. In addition, we have made it our policy not to use conflict minerals and raw materials containing such minerals related to inhumane armed groups in the Democratic Republic of the Congo and surrounding countries.

### Purchase Policy

We procure and purchase raw materials and materials in accordance with our Basic CSR Policy.

#### 1. Compliance with laws, regulations, and social norms

We promote sound procurement and purchase activities by observing all relevant laws, regulations, social norms, and internal regulations, as well as corporate ethics.

#### 2. Fair, equitable, transparent trades

We continue to create opportunities for business with new suppliers, without adhering to past purchases or the corporate group, thereby ensuring fair, equitable, transparent trades.

#### 3. Procurement and purchase based on economic rationality

We undertake procurement and purchase that are optimal for us based on a comprehensive evaluation of quality, price, stable supply, technology development capabilities, stable management and other factors.

#### 4. Consideration for the global environment

To achieve a sustainable society, we strive to remain conscious of the protection of the global environment in our procurement and purchase activities.

#### 5. Establishment of partnership

Based on our fundamental recognition that all of our business partners are essential for executing businesses, we establish relationships of mutual trust with them in our efforts to achieve further development. We will also work on the following themes with our business partners in our efforts to fulfill our corporate social responsibility.

- 1) Compliance with laws, regulations, social norms and corporate ethics
- 2) Ensure safety and protecting the environment
- 3) Respect human rights and giving consideration to the work environment

## Disclosure of Product SDS

To ensure our chemical products are used safely, we provide customers with Safety Data Sheets (SDSs) of all products. Customers and users can download the SDSs for all agrochemicals from our website. Our employees can obtain product information, including information about their risks and hazards, laws and regulations, transportation, storage and methods of disposal, from our internal SDS database.

## Disclosure of GPS Safety Summaries

We participate in the Global Product Strategy (GPS) / Japan Initiative of Product Stewardship (JIPS) activities that are promoted by the International Council of Chemical Associations (ICCA) and the Japan Chemical Industry Association (JCIA). We assess the risk of chemical products, manage them properly, compile their safety information in the GPS Safety Summary and make it available to the public. The disclosure of this information helps to minimize the risks of chemical substances throughout the entire value chain.

## Responsible Care Management

Responsible Care (RC) activities aim to secure environment, health and safety (EHS) performance on a voluntary basis throughout the entire process, from the development of chemical substances to manufacture, distribution, use, final consumption and disposal / recycling. These activities also serve as a form of communication with society through the announcement of their results. Chemical companies in more than 60 countries and regions are working on RC activities. In Japan, the Japan Responsible Care Council (JRCC) was established by the Japan Chemical Industry Association (JCIA) in 1995. We are one of the original members of JRCC. We have also signed the Responsible Care Global Charter, which was revised in 2014, and we are enhancing our efforts in RC activities.

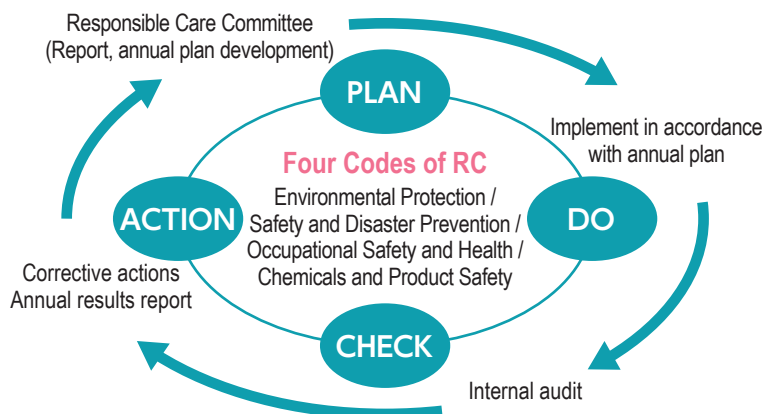
### Nissan Chemical RC Management System

To achieve our RC mid-term plan, we have established RC management system based on ISO14001\*, and we carry out target management and continuous improvements based on PDCA.

We have established the RC Committee, which is chaired by the head of the Environment, Safety & Quality Assurance Department, as the organization in charge of promoting these activities. The committee holds annual meetings, at which its members discuss the results of activities at each laboratory / plant in each fiscal year, review all the activities of the company, and discuss the RC targets for the next fiscal year.

The results of the discussions are reported and approved at board meeting and the management meeting before the RC targets for the next fiscal year are determined.

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



▲ RC Committee: Officer in charge of the Environment, Safety & Quality Assurance Department and the heads of the Production Technology Department, Personnel Department, Purchasing Department, business divisions, and all plants and laboratories. Meetings are held annually. (Chairman: Head of Environment, Safety & Quality Assurance Department)

## Responsible Care Basic Policies

We have set priority matters related to the EHS in all stages of our business activities as our basic policies on RC. We have fully shared these basic policies with all group companies.

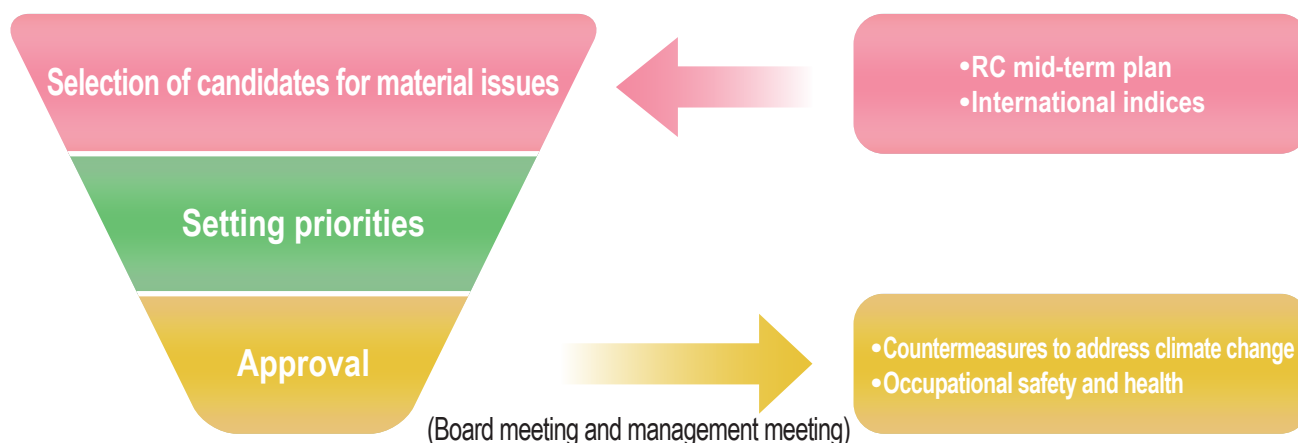
- (1) Strive to ensure the continuous improvement of the EHS throughout the entire product lifecycle, from development all the way to the final disposal.
- (2) Manage business activities and prevent them from affecting people and the environment, giving consideration to the EHS when transporting, storing and disposing products.
- (3) Strive to develop products and technologies with a smaller environmental impact by considering the EHS aspects from R&D phase.
- (4) Promote greater resource conservation and energy conservation to reduce the amount of waste and effectively use of the waste.
- (5) Take note of the interest of administrative authorities and public interest concerning the impact of our products and operations on EHS, and strive to communicate with them to ensure their correct and full understanding by disclosing sufficient information.
- (6) Further enhance risk assessment and risk management based on scientific knowledge and strengthen proper management of chemical substances.
- (7) Observe laws and standards and promote voluntary initiatives to further improve the EHS performance.
- (8) Fulfill accountability to further meet the expectations of stakeholders in Japan and overseas concerning our activities related to EHS.

## Selection of Material Issues in RC

To enhance our EHS initiatives, we have selected “countermeasures to address climate change” and “occupational safety and health” as material issues that we should work on intensively in our RC activities.

We have selected material issues in light of our RC mid-term plan and international indices such as ISO 26000, the Ten Principles of the UN Global Compact, SDGs, and the Global Risks Report 2017. We set their priorities based on the priorities of our stakeholders and their materiality for us, thereby narrowing down to the above two issues, and obtained approval at the board meeting and the management meeting.

Moving forward, we will carry out target management and evaluation based on PDCA and review the material issues in response to our business activities or social change or when otherwise necessary.



## Promotion of the RC Mid-Term Plan (FY2016 – 2021)

Responsible Care Code	Mid-term plan (FY2016 - 2021)	FY2016 plan
Environmental protection and countermeasures to address climate change	<ul style="list-style-type: none"> <li>Reducing the energy consumption rate*<sup>1</sup> (achieving a 20% reduction from the year 2011 level by 2021)</li> <li>Reducing GHG emissions and improving the GHG emission rate*<sup>2</sup> Reducing the total amount of emissions during the period of the mid-term plan (2016 to 2021) by 100,000 tons compared to the period of the previous mid-term plan (2010 to 2015) Improving the emission rate by 20% from the FY2011 level by FY2021</li> </ul> <small>*1 Amount of energy consumption / sales *2 Emissions / sales</small>	<ul style="list-style-type: none"> <li>Energy saving through the renewal of aging facilities</li> <li>Promoting the conversion of waste solvents into forms of fuel</li> <li>Switching from naphtha to liquefied natural gas as the feedstock for ammonia (Reducing GHG emissions by 10,000 tons)</li> </ul>
	<ul style="list-style-type: none"> <li>Reducing industrial waste</li> </ul>	<ul style="list-style-type: none"> <li>Promoting the reuse and recycling of waste</li> </ul>
	<ul style="list-style-type: none"> <li>Establishing a CSR supply chain management (green procurement) system</li> </ul>	<ul style="list-style-type: none"> <li>Conducting EHS audits of important business partners</li> </ul>
	<ul style="list-style-type: none"> <li>Strengthening measures for protecting biodiversity</li> </ul>	<ul style="list-style-type: none"> <li>Continuing activities based on biodiversity action guidelines</li> </ul>
	<ul style="list-style-type: none"> <li>Promoting the development and sales of environmentally friendly products</li> </ul>	<ul style="list-style-type: none"> <li>Promoting the sale of environmentally friendly products</li> </ul>
Safety and disaster prevention	<ul style="list-style-type: none"> <li>Creating a safety culture and improving the safety capabilities</li> <li>Improving the effectiveness of the prior assessment systems for manufacturing, construction work and improving the effectiveness of research</li> </ul>	<ul style="list-style-type: none"> <li>Optimizing the method for evaluating the safety culture</li> <li>Enhancing the risk assessment performed in prior assessment</li> </ul>
Occupational safety and health	<ul style="list-style-type: none"> <li>Establishing an occupational safety and health management system based on ISO45001</li> <li>Achieving zero accidents that require staff time off from work</li> </ul>	<ul style="list-style-type: none"> <li>Improving occupational safety through equipment improvement</li> <li>Publishing an occupational safety newspaper</li> <li>Strengthening inspections for occupational safety and health in RC audits</li> </ul>
Chemicals and product safety	<ul style="list-style-type: none"> <li>Promoting risk-based management throughout the lifecycle of chemical substances</li> <li>Contributing to advanced research that examines the impact of chemical substances on human health and the environment</li> </ul>	<ul style="list-style-type: none"> <li>Creating internal standards for the risk assessment of chemical substances and safety measures based on safety data</li> <li>Promoting the disclosure of safety summaries of chemical substances</li> <li>Participating in LRI*<sup>3</sup> activities organized by the Japan Chemical Industry Association</li> </ul>

\*3 Long-range Research Initiative: an international initiative to provide long-term support for research on the impact of chemicals on human health and the environment

## RC Audits

RC audits are activities for checking RC activities at each plant, laboratory, and affiliate. They are carried out by the Environment, Safety & Quality Assurance Department in accordance with the RC audit guidelines. In these audits, it is checked whether RC activities, as well as internal audits and patrols, are carried out appropriately at each location and the PDCA cycle is implemented without fail. In the RC audits, the Environment, Safety & Quality Assurance Department clarifies visible or potential problems related to the EHS and promotes improvements in response after clarifying the problems, if any. In FY2016, a total of 43 audits were conducted.

## TOPICS

## Safety Audits

In safety audits, the Environment, Safety & Quality Assurance Department identifies unsafe places and unsafe behaviors in a preventive manner by monitoring works on site. These audits were conducted at five selected locations, including those with frequent accidents and where a serious accident has occurred. We will continue to conduct audits that are aimed exclusively at checking worker safety.

Achievement assessment ☆☆☆ = 100 - 70%, ☆☆☆ = 70 - 30%, ☆ = 30% or below		FY2017 plan
	<ul style="list-style-type: none"> <li>• Energy consumption (crude oil equivalent) increased slightly (up 600 kiloliters year on year to 99,400 kiloliters). The energy consumption rate was reduced by 16.9% from the year 2011 level.</li> <li>• The conversion of waste solvents into forms of fuel has progressed as planned.</li> <li>• GHG emissions were reduced by 30,000 tons (equivalent to around 6% of the total emissions) due to the switching of the feedstock for ammonia.</li> <li>• The Eco Track System, a system for managing environmental data, was introduced (and began to be operated in FY2017).</li> </ul>	<ul style="list-style-type: none"> <li>• Energy saving through the improvement of equipment capacity and the renewal of aging facilities, etc.</li> <li>• Reducing GHG emissions further through fuel conversion for melamine, etc.</li> <li>• Reducing N<sub>2</sub>O generated from nitric acid plants</li> </ul>
	<ul style="list-style-type: none"> <li>• Data on the amount of industrial emissions and valuables of all plants were checked. The recycling rate was defined and preparations for its improvement were made.</li> </ul>	<ul style="list-style-type: none"> <li>• Setting a recycling rate target</li> </ul>
☆☆☆	<ul style="list-style-type: none"> <li>• EHS audits of important raw material suppliers were conducted.</li> <li>• The purchase policy was revised in line with CSR promotion.</li> </ul>	<ul style="list-style-type: none"> <li>• Continuously conducting EHS audits</li> <li>• Checking CSR measures taken in the supply chain</li> </ul>
	<ul style="list-style-type: none"> <li>• Support for a NPO named "Kurohama-numa Shuhen no Shizen wo Taisetsu ni Suru Kai (Society for Cherishing the Natural Environment around Kurohamanuma Pond)", and information sharing with it (Biological Research Laboratories)</li> <li>• Participation in cleanup activities for the Fujimae-Higata tidal flat (Nagoya Plant)</li> <li>• Management of Bio-park (Toyama Plant)</li> <li>• Support for the conservation of Pinus pentaphylla (Sodegaura Plant), etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Continuous activities based on biodiversity action guidelines</li> </ul>
	<ul style="list-style-type: none"> <li>• Increased production bases of AdBlue® for processing exhaust gas from diesel vehicles</li> <li>• Update of JIS mark certification</li> </ul>	<ul style="list-style-type: none"> <li>• Promoting the sale of environmentally friendly products</li> </ul>
☆☆☆	<ul style="list-style-type: none"> <li>• Safety culture evaluation was expanded to affiliates. Departments with problems and identified problems were set as improvement themes through evaluative analysis.</li> <li>• Risk assessment of chemicals was carried out.</li> </ul>	<ul style="list-style-type: none"> <li>• Review of prior assessment guideline and its revision</li> </ul>
☆☆	<ul style="list-style-type: none"> <li>• Fall accidents decreased due to the renewal of facilities and other measures.</li> <li>• Occupational safety newspaper was published.</li> <li>• There was one case of an accident requiring staff time off from work. There were two cases of accidents involving employees of subcontractors including temporary staff.</li> </ul>	<ul style="list-style-type: none"> <li>• Capital investment for safety (350 million yen for three years)</li> <li>• Checking the status of occupational safety at affiliates and giving them directions on occupational safety</li> </ul>
☆☆☆	<ul style="list-style-type: none"> <li>• Internal standards for the risk assessment and safety measures were created.</li> <li>• Safety summary of urea was disclosed.</li> <li>• We participated in activities with non-animal methods, etc. We participated in the International Council of Chemical Associations' Long-Range Research Initiative (ICCA-LRI) Workshop.</li> </ul>	<ul style="list-style-type: none"> <li>• Confirming risk assessment management</li> <li>• Continuing the disclosure of safety summaries of chemical substances</li> </ul>





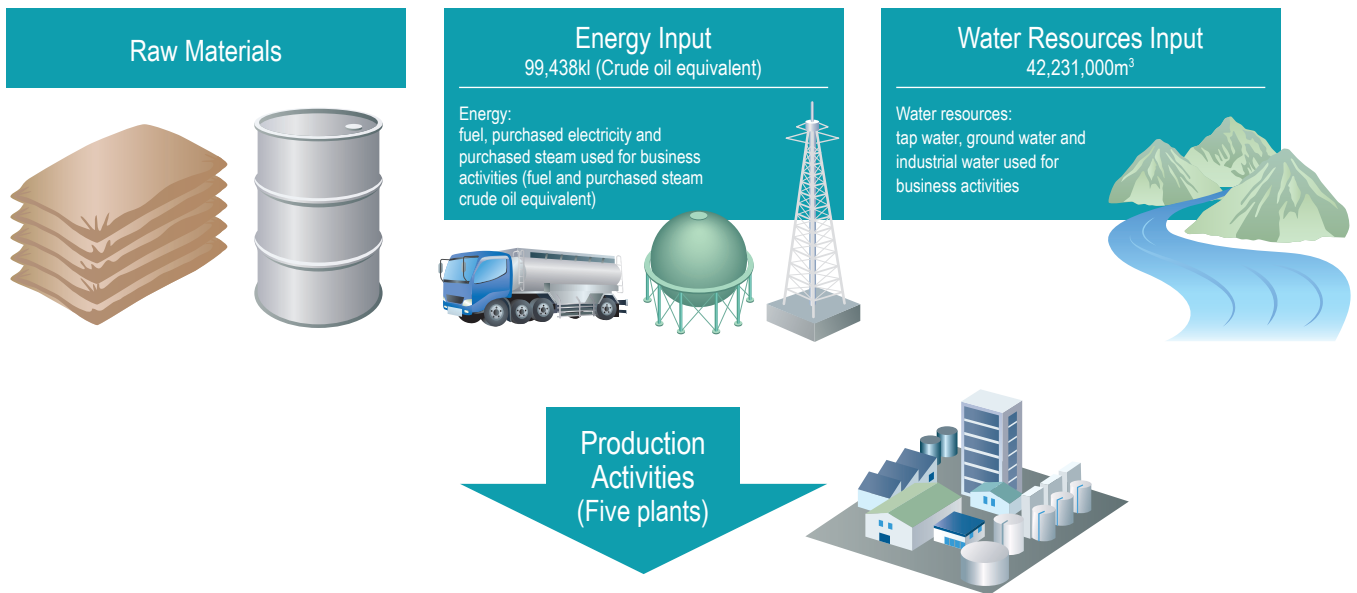
# Environment Safety and Climate Change Strategy

## Environmental Impact from Production Activities

The figure below shows the inputs of raw materials, energy and water for production and emissions to the atmosphere, waters, soil and waste. This is the summary of environmental impact yielded by the company.

### FY2016 Environmental Impact Results

#### INPUT



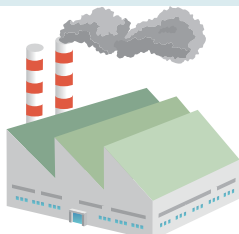
#### OUTPUT

##### Emissions to the Atmosphere

CO <sub>2</sub>	246,000 tons-CO <sub>2</sub>
GHG other than CO <sub>2</sub>	187,000 tons-CO <sub>2</sub>
NO <sub>x</sub>	148 tons
SO <sub>x</sub>	382 tons
Dust	25 tons
PRTR substances	1.47 tons

##### Emissions to the Atmosphere

CO<sub>2</sub>: the amount of CO<sub>2</sub> emitted from business activities  
 GHG other than CO<sub>2</sub>: the amount of CH<sub>4</sub>, N<sub>2</sub>O, HFC and SF<sub>6</sub>  
 NO<sub>x</sub>, SO<sub>x</sub>, dust: the amount of NO<sub>x</sub>, SO<sub>x</sub> and dust included in emissions from each burning facility



##### Emissions into waters

Effluent	14,990,000 m <sup>3</sup>
COD	294 tons
Total nitrogen	3,356 tons
Total phosphorus	18 tons
PRTR substances	0.38 tons

##### Emissions into waters

COD, Total nitrogen, Total phosphorus: volume that was calculated by multiplying effluent to the public waters by the concentration of nitrogen, phosphorus and COD



##### Emissions to the soil

PRTR substances	N/A
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##### Waste

Total volume	33,689 tons
Recycled volume	3,819 tons
External disposal volume	1,113 tons

##### Waste

Recycled volume: the amount of waste recycled  
 External disposal volume: the final amount of landfill disposal by contractor

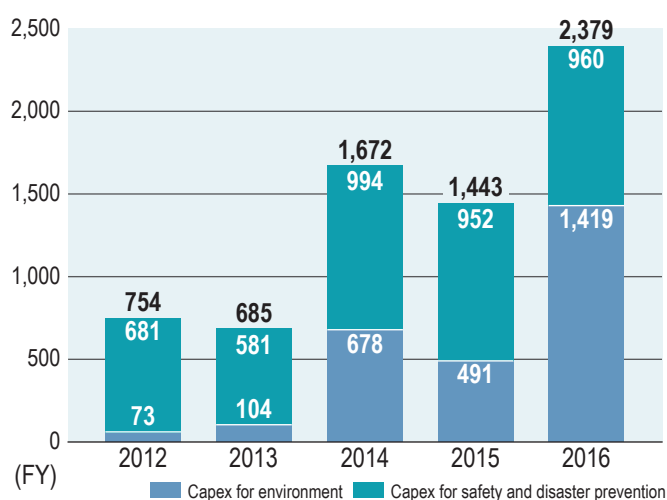


## Capital Investment for the Environment and Safety and its Economic Effects

### Investment:

We have made active capital investments such as changing the feedstock for manufacturing ammonia at the Toyama Plant in our efforts to save energy and reduce GHG emissions. We also renovate aging facilities and implement constructions for labor safety and work environment improvement measures in a well-planned manner to ensure safety and disaster prevention and maintain safe operations.

Capex for environment and safety [million yen]



### Economic effects:

Fuel conversion from naphtha to natural gas, conversion of industrial waste into valuables, and changes to treatment methods produced the following economic effects in FY2016.

Type of cost reduction	Amount [million yen]	
	FY2015	FY2016
Energy saving	173	40
Resource saving	49	92
Reuse and recycling	32	41

## TOPICS

### Toyama Plant: Expanded Use of Natural Gas

In August 2016, the Toyama Plant switched from naphtha to natural gas as the fuel and feedstock used for ammonia. Efforts for CO<sub>2</sub> emission reduction at its production facilities have produced significant results. In August 2017, we switched from heavy oil to natural gas as the fuel for melamine furnaces. Moving forward, we will consider expanding the use of natural gas as fuel for other boilers. Natural gas does not generate any sulfur oxide or soot dust when it is burned. The amount of NO<sub>x</sub> (nitrogen oxide) emitted by natural gas is 30% to 40% less than that of petroleum, thereby helping to protect the global environment and prevent climate change.



▲ Melamine furnaces

## Amount of Energy Consumption and Energy Consumption Rate

### Production and research:

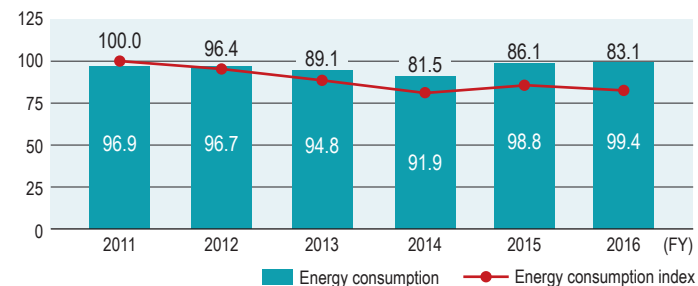
In accordance with "the Act on the Rational Use of Energy", we collect data on the amount of energy consumed at all of our business establishments and submit this data to the national government, along with data on our energy consumption rate. Our energy consumption in FY2016 was almost equal to the previous fiscal year's level in crude oil equivalent. We have a product matrix that covers a wide range of products, from commodity chemicals to agrochemicals, pharmaceuticals and functional products for electronic materials. This makes it difficult to evaluate the energy consumption rate based on the simple quantity of production, which is why we calculate it based on sales. Our energy consumption rate improved from the previous year by 3%. This is attributed mainly to the increased sales of high value added products.

### Logistics:

As a cargo owner, we work together with Nissan Butsuryu Co., Ltd., a group company which handles our logistics operations, to promote the rational use of energy for transportation. In FY2016, the amount of energy consumption in crude oil equivalent increased slightly from the previous fiscal year. However, the energy consumption rate was improved from the previous fiscal year. We will continue striving to improve our energy consumption rate through measures such as promoting modal shifts, replacing vehicles with energy-saving and practicing eco-driving.

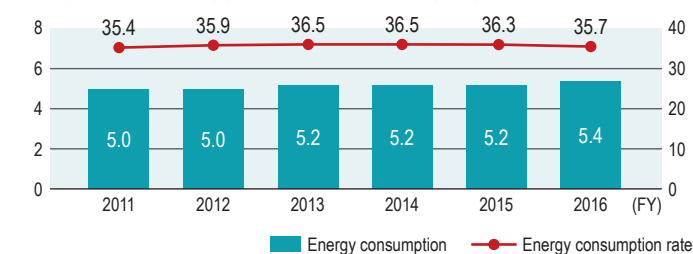
Energy consumption (crude oil equivalent 1,000kl)

and energy consumption index (FY2011 as a base of 100) in production and research



Energy consumption (left axis: crude oil equivalent 1,000kl)

and energy consumption rate (right axis: kl / one million ton kilo) in logistics



## TOPICS

### Centralized Management of Environmental Data

We have introduced the "FUJITSU Sustainability Solution Eco Track" as a support tool for the visualization of environmental action plans and the results of the actions for their application to sustainability activities, global information disclosure, and third-party verification, in addition to the response to environmental laws and regulations and the reduction of the environmental impact. We have named the system the Nissan Eco Track System (NEco) and commenced the centralized management of environmental data from plants, laboratories and affiliates. We use the system for presenting environmental data in this report, responding to the CDP climate change and water questionnaire, and other purposes.

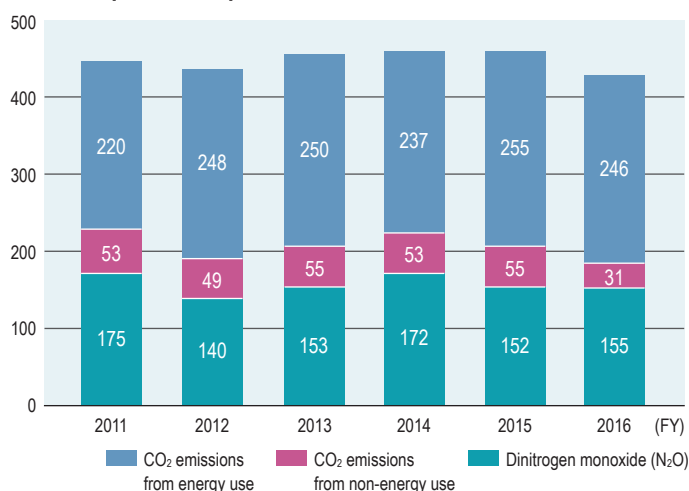


▲ NEco

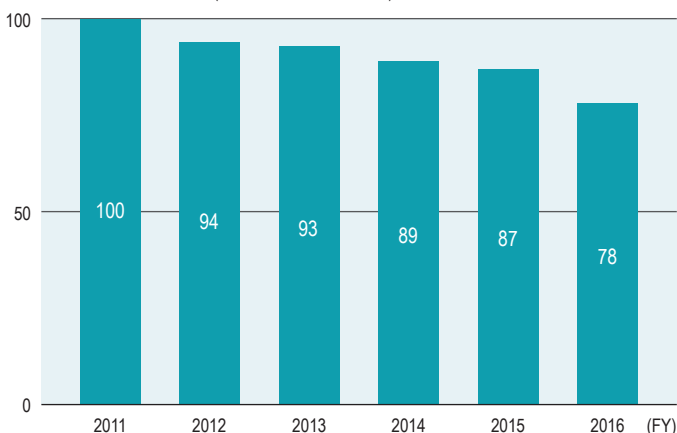
## Reduction of Greenhouse Gas Emissions

In accordance with “the Act on Promotion of Global Warming Countermeasures”, we collect data on the emissions of carbon dioxide (CO<sub>2</sub>) and other greenhouse gases from all of our business establishments, including our plants, laboratories, and head office and report this data to the national government. In FY2016, we were able to reduce GHG emissions from energy use and non-energy use because we changed fuel and feedstock for manufacturing ammonia from naphtha to natural gas with fewer GHG emissions. The GHG emission rate, which is calculated as the ratio between emissions and sales (emission / sales), fell steadily over the course of six years from FY2011 to FY2016. In FY2016, the GHG emission rate was reduced to 78% compared to the FY2011 level.

GHG emissions [1,000 tons - CO<sub>2</sub>]



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

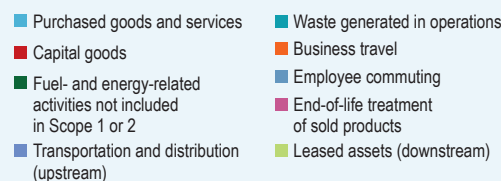
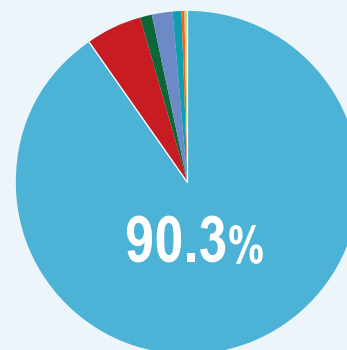


### Calculation of Scope 3 Emissions: Indirect Emissions of Greenhouse Gas (GHG) via the Supply Chain

To discover our GHG emissions throughout the supply chain, from the purchase of raw materials to use and disposal by customers, we calculated our indirect GHG emissions via the supply chain (Scope 3 emissions) in addition to our direct GHG emissions (Scope 1) and indirect emissions derived from energy (Scope 2). As a result of the calculations of our Scope 3 emissions based on the Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver. 2.2) and Database of Emissions Unit Values for Accounting of Greenhouse Gas Emissions, etc., by Organizations Throughout the Supply Chain (Ver. 2.4) provided by the Ministry of Economy, Trade and Industry and the Ministry of the Environment of Japan, we found that emissions from purchased goods and services accounted for 90% of all the items that were included in the calculation.

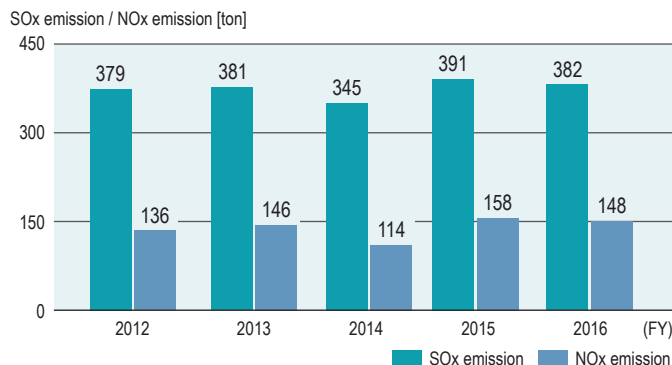
#### Scope-3

No.	Item	Calculated value (tCO <sub>2</sub> e)
1	Purchased goods and services	670,794
2	Capital goods	40,752
3	Fuel- and energy-related activities not included in Scope 1 or 2	7,870
4	Transportation and distribution (upstream)	13,848
5	Waste generated in operations	7,076
6	Business travel	1,443
7	Employee commuting	370
8	Leased assets (upstream)	Included in Scope 1 or 2
9	Transportation and distribution (downstream)	Being studied
10	Processing of sold products	Being studied
11	Use of sold products	Not applicable
12	End-of-life treatment of sold products	255
13	Leased assets (downstream)	203
14	Franchises	Not applicable
15	Investments	Not applicable



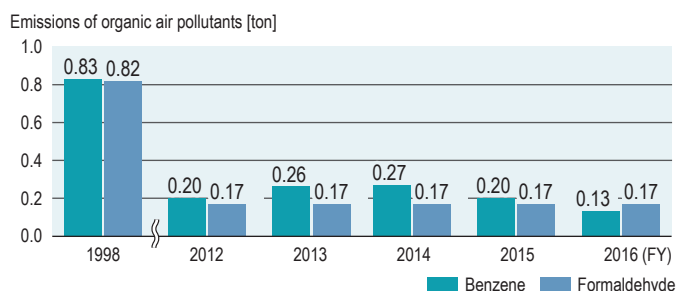
## Control of Exhaust Gas

We control exhaust gas by observing the discharge standards stipulated in “the Air Pollution Control Act” and regulatory values based on agreements with local communities. We maintain the proper conditions in our desulfurization facilities and denitrification facilities in an effort to control the emissions of air pollutants such as sulfur oxide (SOx) and nitrogen oxide (NOx).



## Reduction of Emissions of VOCs

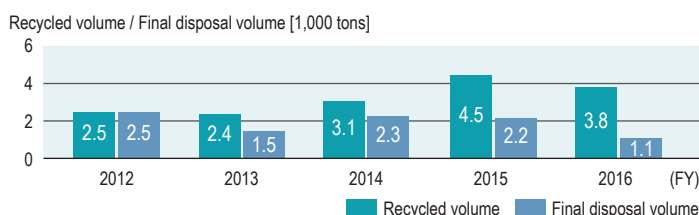
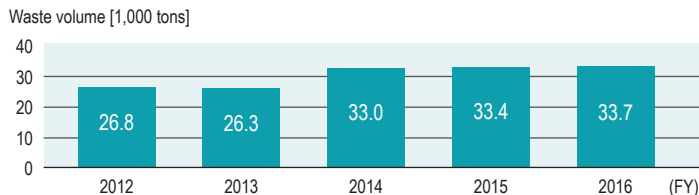
We regularly take initiatives to reduce emissions of volatile organic compounds (VOCs), which cause the formation of photochemical oxidants. We have not emitted any 1,2-dichloroethane into the atmosphere since 2006 due to the introduction of VOC eliminators and other initiatives. Our emissions of other VOCs (benzene and formaldehyde) have also remained at around 25% of the level of 2006 and earlier. In FY2016, our emissions of benzene were reduced further because we changed the fuel and feedstock for manufacturing ammonia from naphtha to natural gas.



## Reduction of Waste

We thoroughly implement control measures to ensure the proper disposal of waste, while also striving to reduce industrial waste. We introduced the PBasis from Panasonic ET Solutions Co., Ltd. as the legal compliance system for waste. We also applied electronic manifests.

Waste water discharged in the manufacturing process accounts for the majority of our industrial waste. We treat this waste internally by means of combustion. The amount of waste generated began to rise in FY2014 due to an increase in the production volume of organic fine chemicals and flame retardants attributed to their new uses. As for solid waste, we reuse sludge as feedstock for the base course material of roads and cement. In addition, at the Toyama Plant, we promote the recycling of waste plastics and the conversion of such plastics to valuables, and we have changed the method of their intermediate processing. As a result, the final disposal volume was reduced by half from FY2015. We have set a goal of reducing the final disposal volume to 800 tons by FY2020.



## Reduction of Emissions of PRTR Substances

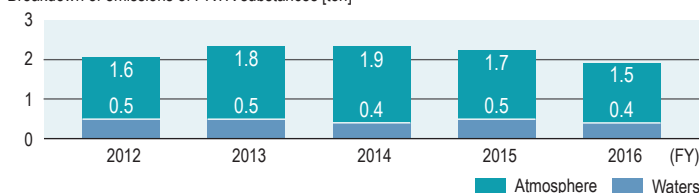
In FY2016, we emitted 60 chemical substances whose emissions must be registered in accordance with “the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (PRTR law)”. The main substances emitted were formaldehyde and n-hexane. Formaldehyde is used as a reaction solvent, while n-hexane is found in naphtha, which is used as a fuel or feedstock. Emissions of n-hexane also decreased in FY2016 because we changed the feedstock for manufacturing ammonia.

We emitted a total of 1.9 tons of these substances, including 1.5 tons into the atmosphere and 0.4 tons into waters. Emissions into the atmosphere decreased from the previous fiscal year. We will continue to take steps to control the emissions. We did not emit these substances into the soil.

Emissions of PRTR substances [ton]

Substance	FY2012	FY2013	FY2014	FY2015	FY2016
Formaldehyde	0.5	0.5	0.4	0.5	0.3
n-Hexane	1.2	1.4	1.4	1.3	1.1
Others	0.3	0.4	0.5	0.4	0.4
Total	2.0	2.3	2.3	2.2	1.8

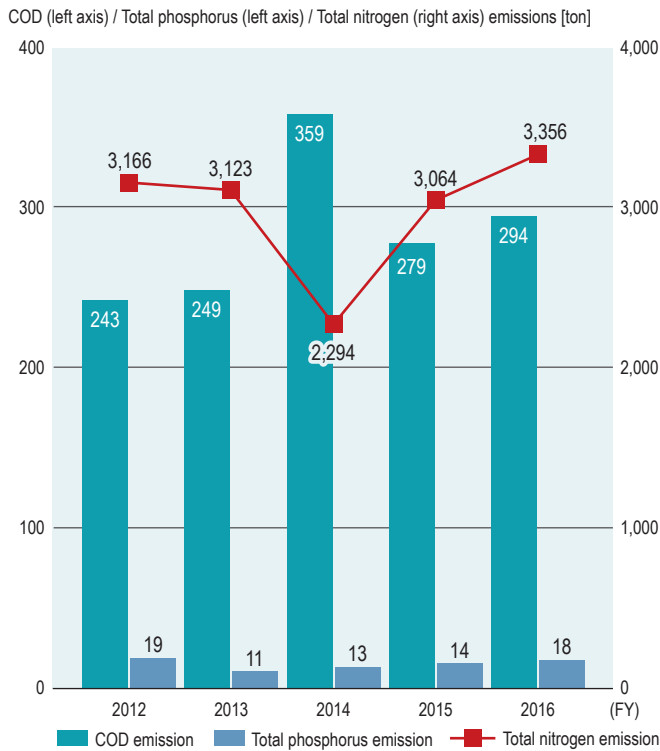
Breakdown of emissions of PRTR substances [ton]





## Control of Waste Water

Our plants observe the discharge standards stipulated in “the Water Pollution Control Act” and regulatory values based on agreements with local communities. We monitor the chemical oxygen demand (COD), the total nitrogen and total phosphorous concentration in waste water. In FY2016, the emissions of all of them increased due to the increase in production volume.

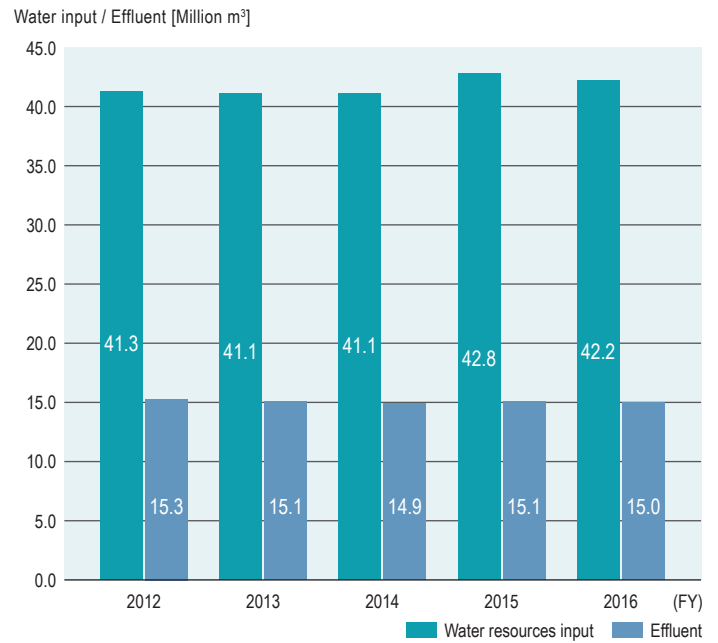


▲ Shomyo Falls and Hannoki Falls, into which meltwater from the Tateyama Mountain Range flows

## Efficient Use of Water Resources

At each plant, we carry out exhaustive water-saving activities by observing environmental laws and regulations and cooperating with local organizations. These activities ensure that our operations do not place an impact on natural water circulation. We also clean waste water before returning it to nature to prevent it from negatively impacting the environment.

At the Toyama Plant, we have been promoting the rational use of groundwater as a member of the groundwater use council in the Toyama area, a local council that works to protect the local natural environment and promote the sound development of local communities. At the Onoda Plant, we have been taking measures to maintain the quality of waste water discharged from the plant in line with “the Act on Special Measures concerning Conservation of the Environment of the Seto Inland Sea.”

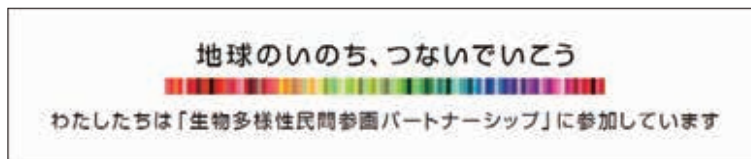


▲ Toyama Plant and Tateyama Mountain Range seen from the Ida River

## Biodiversity Conservation

At Nissan Chemical, we are fully aware of the fact that biodiversity serves as an important foundation for sustainable society in the future. As a member of international society, we intend to promote activities that contribute to biodiversity conservation by sharing roles and responsibilities with all the people and working together with them. For this purpose, we have established the “Nissan Chemical Biodiversity Action Guidelines”.

In addition, in October 2015 we participated in the Japan Business and Biodiversity Partnership to promote our initiatives for biodiversity.



## Nissan Chemical Biodiversity Action Guidelines

Our corporate philosophy is “We contribute to society in harmony with the environment, based on our excellent technologies, products, and services.” We at the Nissan Chemical Group engage in business activities that take into account biodiversity and help protect the global environment.

- 1) We will understand, analyze, and evaluate the impact of our products on biodiversity throughout their lifecycle and strive to reduce the impact. We will work to preserve biodiversity and ensure the sustainable use of biological resources.
- 2) We will strive to raise each employee’s awareness of biodiversity through responsible care activities.
- 3) We will continue to carry out social contribution activities that help preserve biodiversity and earn us the high esteem and trust of society.
- 4) We will disclose the results of these initiatives to deepen the level of communication with society.

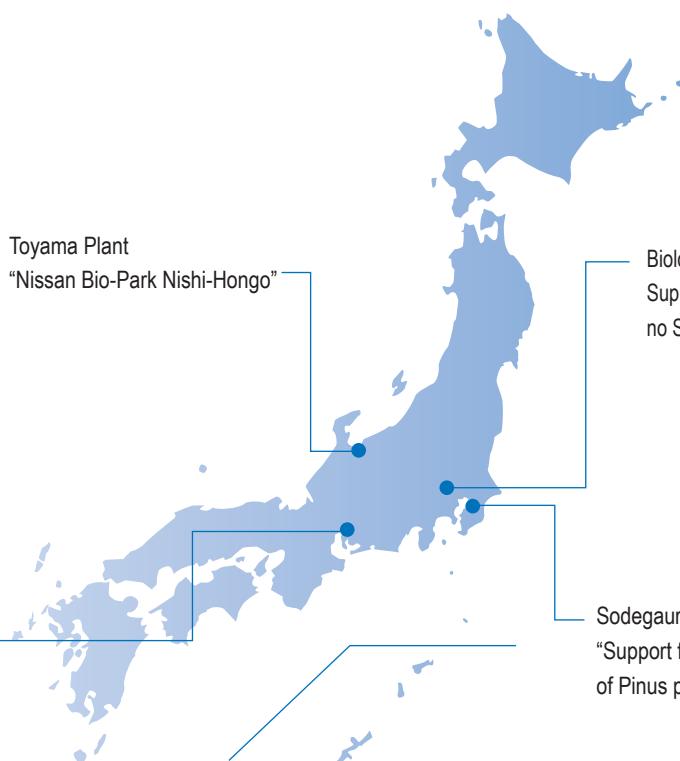
## Our Biodiversity Initiatives



Toyama Plant  
“Nissan Bio-Park Nishi-Hongo”



Nagoya Plant  
“Fujimae-Higata Clean-up Activities”



Biological Research Laboratories  
Support for “Kurohama-numa Shuhen  
no Shizen wo Taisetsu ni Suru Kai” (TOPICS)

Sodegaura Plant  
“Support for the conservation  
of Pinus pentaphylla”



## TOPICS

### Support for “Kurohama-numa Shuhen no Shizen wo Taisetsu ni Suru Kai” and dialogues with it

In FY2016, we began to support “Kurohama-numa Shuhen no Shizen wo Taisetsu ni Suru Kai (Society for Cherishing the Natural Environment around Kurohamanuma Pond)”, an NPO in Hasuda City, Saitama. For many years, this organization has been engaged in activities for conserving the biodiversity of the area around Kurohamanuma Pond, which is designated as the No.11 Land for Conservation by Trust (Trust Hozen 11-gou chi) by the Saitama Greenery Trust Association of Saitama Prefecture. Its activities have resulted in numerous achievements, including success in growing *Carex capricornis* and other endangered species. On the other hand, it faces multiple urgent issues such as the drying up of the pond and the reduction of rare species of plants and animals attributed to the propagation of alien species such as willow and red-eared sliders. The NPO also contributes to the environmental learning of local elementary and junior high school students. We are favorable with these continuous, locally based activities for protecting biodiversity and decided to give a donation to this NPO every year.

Representatives from our CSR & Public Relations Office, Environment, Safety & Quality Assurance Department and Biological Research Laboratories visited the environmental learning center (Kankyo Gakushu-kan) in Hasuda City, which is managed by the NPO, observed its activities in the area around Kurohamanuma Pond, and then exchanged opinions with the NPO concerning activities of the NPO and the company, issues on biodiversity conservation, expectations for business enterprises and other aspects.



▲ Landscape of the area around Kurohamanuma Pond



▲ *Carex capricornis*, an endangered species that the NPO has been growing successfully



▲ A session for exchanging opinions about biodiversity conservation activities

## TOPICS

### Participation in the Membership Program of Armand Bayou Nature Center

Nissan Chemical America Corporation participated a corporate membership of Armand Bayou Nature Center (ABNC).

ABNC is one of the largest urban wilderness preserve in the U.S. ABNC contains 2500 acres of the natural wetlands forest, prairie and marsh habitats once abundant in the Houston/Galveston area. ABNC is home to over 370 species of birds, mammals, reptiles and amphibians. The Center's stewardship programs ensure that future generations have the opportunity to experience a wilderness close to home. ABNC's educational programs promote the value of preservation and conservation of natural resources. These programs also encourage everyone to incorporate ecological concepts into their daily lives.



▲ Armand Bayou Nature Center



# Safety and Disaster Prevention, Occupational Safety and Health

## Safety and Disaster Prevention

We carry out prior assessment for manufacture, process risk predictions, and facility risk predictions with the aim of ensuring safety, achieving stable operations, and improving our process safety capability. As a result, in FY2016 there were no explosion or leakage accidents, but there was a fire that is believed to have been caused by static electricity at Onoda Plant. The fire affected only a small area and did not develop into a serious accident, allowing recovery to be completed in around two months. To prevent a recurrence, we carried out complete inspections of similar tasks at all our plants.

To maintain zero serious accident level, we began to consider the idea of assessing the safety culture of plants in FY2014. We expanded the evaluations to all plants of Nissan Chemical in FY2015 and to laboratories and our affiliates' plants in FY2016. As a result, issues such as the communication gap between the management team, managers, and workers were identified and improvements are in progress at each location.

Our plants, laboratories and affiliates carry out various drills and training every year, such as comprehensive disaster drills, earthquake drills, initial fire-fighting drills, communication and reporting training. These drills and training sessions all take into account the characteristics of the location and region, and are designed to make us ready to respond to emergencies or accidents in a reliable manner.

### TOPICS

#### Central Awards for No-Accident

We have introduced a system under which we grant an award to plants of Nissan Chemical and our affiliates involved in manufacturing that have achieved zero accidents for five consecutive years.

In FY2016, the award was granted to Nagoya Plant and Nissan Engineering, Ltd. for their achievement of zero accidents during the five years from FY2011 to FY2015. At the award presentation ceremony, a lecture was given by each winner about their countermeasures against accidents.



▲ Nagoya Plant



▲ Nissan Engineering, Ltd.

### TOPICS

#### Group Safety Activities of the Laboratories

Our young laboratory staff (who are in their first, second or third year at the company) engage in activities in groups for preventing work accidents, including safety-related research, discussions and presentations that are aimed at sharing knowledge and raising safety awareness. Under the instruction of their seniors, these laboratory staff members discuss the causes of accidents, countermeasures against them, and other issues based on past work accidents and books, external information, and other materials about HHK\* and safety. In FY2016, a total of 53 staff members in ten groups from the Chemical Research Laboratories, Materials Research Laboratories and Biological Research Laboratories engaged in the activities and held a reporting session in October. At the reporting session, an award of excellence was granted to the group that carried out the most excellent activities.

\* HHK stands for Hiyari-Hatto (near-miss incident) and Kigakari (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.

Group	Summary of their reported activities
Chemical Research Laboratories	Activation of HHK through sharing of information Research on chemical accidents, optimization of experiment environment Investigation into causes of HHK→Implementation of countermeasures Investigation into HHK→Promotion of risk prediction before experiment task
Materials Research Laboratories (Funabashi)	Investigation into HHK→Identification of causes / implementation of countermeasures Safety patrol→Identification of risks and implementation of countermeasures Investigation into protective gear and SDS→Risk prevention
(Toyama)	Investigation into protective gear→Suggestion of improvements
(Sodegaura)	Studying earthquake countermeasures and emergency response
Biological Research Laboratories	Risk assessment of chemicals



## Occupational Safety and Health

We make continuous improvements with regard to occupational safety and health as well, by implementing a PDCA cycle in our RC management system. We thereby prevent work 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 FY2017, we selected occupational safety and health as one of the RC material issues.

At locations where work accidents have occurred, we investigate the causes and implement provisional or permanent measures. We also expand the measures across the entire group in our efforts to prevent similar accidents.

In addition, we became a member of the *Anzen Project* (safety project) of the Ministry of Health, Labour and Welfare in FY2016. We have applied for the *Visible Safety Activity Competition* and engage in safety activities.

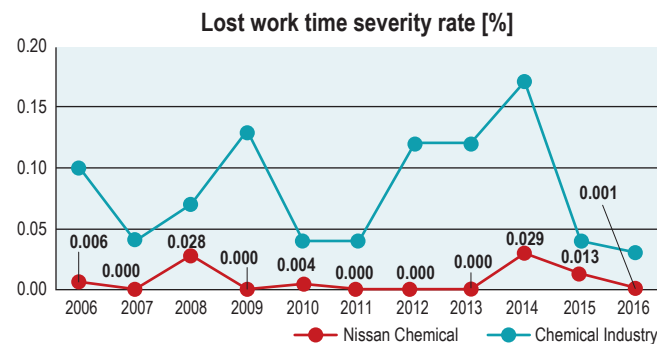
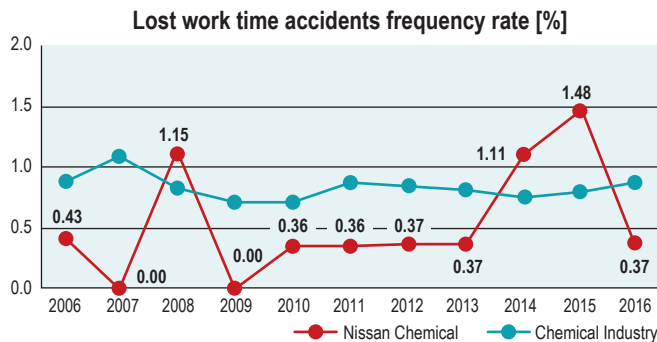
Moving forward, we will strive to protect work accidents at our subcontractors as well.



## Safety Results

In FY2016, we had one case of an accident requiring staff time off from work and three cases of accidents not requiring staff time off from work. The number of cases of accidents requiring staff time off from work decreased (by two), resulting in an improvement in the frequency rate.

We believe that the improvement is attributed to measures taken at each business location by reflecting our assessment of the risks of potential hazards of tasks in which accidents occurred. We are carrying out a plan to invest a total of 350 million yen in measures for the safety of facilities during the three years from FY2016. We made capital investments to prevent fall accidents and falls. The prevention of these accidents enabled by the investments is believed to be a factor that contributed to the above improvement.



### TOPICS

#### Occupational Safety Newspaper

We have begun publishing an occupational safety newspaper as a measure for providing information about occupational safety, which is aimed at eliminating work accidents. The first issue of the newspaper included a message from the president regarding eliminating work accidents and data on work accidents that have occurred. It was distributed and posted at all our business locations. In the following issues, we introduced the safety initiatives taken at each plant, laboratory, and affiliate along with a message from the head of each in the form of a relay. We also provide information about heat stroke, falls, protective gear, GHS labeling, and other topics on a monthly basis in our efforts to raise safety awareness.



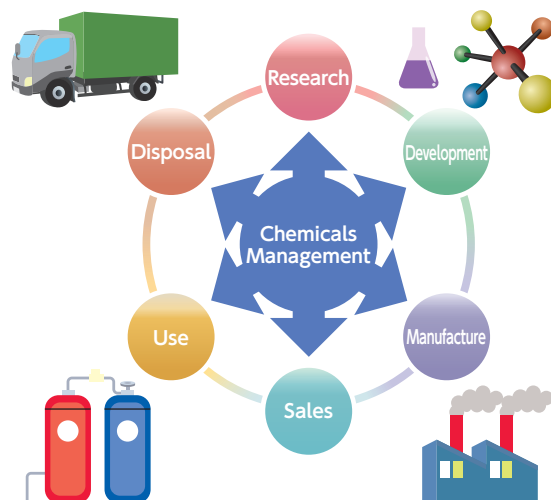


# Chemicals and Product Safety

## Chemicals Management

To achieve the “2020 targets”<sup>\*1</sup> on which agreement was reached at the “World Summit on Sustainable Development (WSSD)” in 2002, the “Strategic Approach to International Chemicals Management (SAICM)” for promoting risk reduction based on scientific risk assessment, collection and provision of information, and other measures were adopted at the “International Conference on Chemicals Management (ICCM)” in 2006. At Nissan Chemical, we strive to minimize the negative impact of chemical products on people’s health and the environment during their lifecycle in line with the domestic SAICM implementation plan.

\*1 “... aiming to achieve, by 2020, that chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment ...”



## Risk Assessment in Product 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 (SDS).

For our GPS / JIPS activities, which are promoted by ICCA and JCIA, we conduct risk assessments of our chemical products and provide an overview of appropriate management based on the risks and safety information in the GPS Safety Summary. This information is disclosed and made available to the public. We also participate in LRI, an international initiative promoted by 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.

Main Categories for Risk Assessment	
1 Compliance with laws, regulations, and agreements	6 Logistics safety and stability
2 Chemical material safety, impact on human health and the environment	7 Reduction of disposal amount
3 Occupational safety and health for workers	8 Quality assurance
4 Safety of facilities and for operations	9 Environmental and safety aspects for commissioning, purchasing, and sales
5 Product safety and environmental impact	

Prior risk assessment results (Number of cases)

Stage	Department responsible for assessment	FY2014	FY2015	FY2016
Research and development	Laboratories	31	18	19
Industrialization test	Plants (technical)	2	12	19
Manufacture	Plants (manufacture)	96	116	110
Total		129	146	148



## Considerations for Animal Testing

Assessments made using laboratory animals are essential for the research and development of agrochemicals, pharmaceuticals, medical materials and chemical materials that are beneficial for society. Biological Research Laboratories has established Animal Testing Guideline of Nissan Chemical in accordance with the Three Rs principles of animal welfare (Replacement with alternative methods, Reduction in the use of laboratory animals and Refinement of methods for reducing pain) and laws and regulations such as the “Act on Welfare and Management of Animals”. In accordance with these guidelines, the Institutional Animal Care and Use Committee examines whether to conduct animal testing, both ethically and scientifically, and checks how the tests are performed to ensure that animal testing is conducted appropriately and that proper consideration is given to animal welfare.

Due to these initiatives, the Biological Research Laboratories has obtained third-party certification of its laboratory animal facilities from Japan Health Sciences Foundation.

### TOPICS

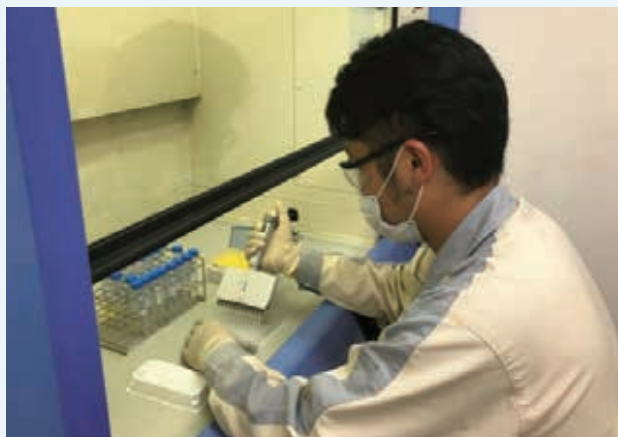
#### Third-Party Certification of Laboratory Animal Facilities

Biological Research Laboratories takes specific measures in the consideration of animal welfare. It judges whether to conduct animal testing based on preliminary surveys conducted by multiple judges and in consideration of the level of pain inflicted on laboratory animals. It also takes measures for reducing pain reflecting consideration of the humane endpoints of the animals being tested. It also checks how the tests are performed in its efforts to ensure the morality of animal testing and improve the reliability of its scientific knowledge. As a result of these initiatives, in December 2016 the Biological Research Laboratories obtained certification stating that it conducts animal testing appropriately in accordance with the guidelines of the Ministry of Health, Labour and Welfare. The certification was obtained from the Japan Health Sciences Foundation, which conducts third-party validation of voluntary management systems of animal testing.



#### Introduction of a New Alternative to Skin Sensitization Tests

Recent years have been seen growing concern about animal protection, and the development of alternative test methods that do not use laboratory animals has been actively promoted. The amino acid derivative reactivity assay (ADRA) is a new alternative to skin sensitization tests that was developed by Fujifilm Corporation. Validation tests of this method are being conducted to have it included in the OECD Test Guidelines, with the support of LRI of JCIA. We participate in this test to support the research. We have also completed the introduction of technologies for this test method, ahead of other companies, to the Safety Research Department of the Biological Research Laboratories.



## Our Commitment to and Communication with Stakeholders



### Customers

We identify customer needs through sales activities, and work to improve our products and services.

### Shareholders / Investors

At the general shareholders' meeting, the president, who acts as the chairperson, provides explanations of the business report and business plan. We also hold an IR briefing meeting for institutional investors, analysts, and the media every half year to explain the overall conditions of our business.

### Employees

Every year, the president visits offices, plants, and laboratories in Japan and overseas to deepen mutual understanding with employees.

### Business Partners

We promote supply chain management and check our partners' CSR initiatives as necessary. (See page 40.)

### Communities / Society

We interact with local communities through measures such as plant tours and visits to local elementary schools to give special classes.

## Relationships with Customers

### Quality Policy and Quality Targets

Our quality policy is "Providing products and services that satisfy customers." Under this policy, we set mid-term quality targets and implement yearly schedules along with the PDCA cycle in an ongoing effort to improve our management system and operations every year.

Moving forward, we will continue to improve our capability of meeting market needs that are becoming more diverse and complex. We will thereby develop ourselves further as a company that contributes to society.

#### Quality Policy

"Providing products and services that satisfy customers"

#### Quality Targets (for Achieving the Quality Policy)

- Quality assurance in all processes, from design and development to production, shipment, distribution, and delivery
- Taking corrective and preventive measures to address quality abnormalities and problems
- Strengthening supply chain management linked to business strategies

#### PDCA in Quality Assurance



#### TOPICS

### Awarded by MSD as the Best Overall External Site

We provide Merck Animal Health with Fluralaner, an active ingredient of BRAVECTO®, which is a global veterinary pharmaceutical. In 2016, we won the "Best Overall External Site 2016", an award granted by the parent company of MSD to companies that ensure a stable supply of high-quality products including pharmaceuticals, and which have contributed to an increase in the profits of MSD.



## Quality Assurance Management System

Our quality assurance management system is based on ISO9001 (QMS)\*. Our plants have obtained ISO9001 certification. They each maintain and update their certification through the certifying body. They are also proceeding with revisions to the year 2015 version.

We have established a Quality Assurance Committee that promotes quality assurance activities. It is chaired by the head of the Environment, Safety & Quality Assurance Department. It consists of the officer in charge of the Environment, Safety & Quality Assurance Department and the heads of the Production Technology Department, Purchasing Department, all the business divisions, all the plants and all the laboratories. The committee meets regularly once a year.

The matters reported during the committee meetings are the results of activities, audits, improvements made in response to audit results, information about complaints, and improvements made in response to the complaints at Nissan Chemical and affiliates in the fiscal year under review. The members also discuss action policies related to quality assurance and other items for the following fiscal year. The results of the discussions are reported and approved at board meeting and the management meeting before the quality targets for the following fiscal year are determined.

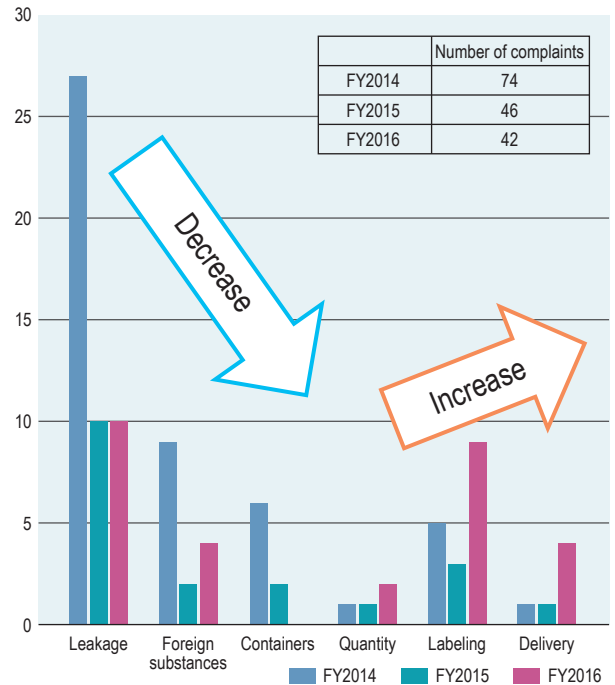
\* An international standard on quality management systems

### Reporting of Improvements and Survey Results at the Committee Meeting

We have a corporate network that requires us to promptly collect customer opinions concerning products (including complaints and product liability accident information), evaluate them, and take corrective action if necessary.

We have reduced by half the number of complaints about leakage, foreign substances and containers, which were the highest in number in the last three years. We have also checked the effectiveness of the measures that we implemented. Complaints in fields related to distribution – that is, quantity, labeling, and delivery – have been on an upward trend, so we have decided to conduct auditing and provide intensive guidance about these processes.

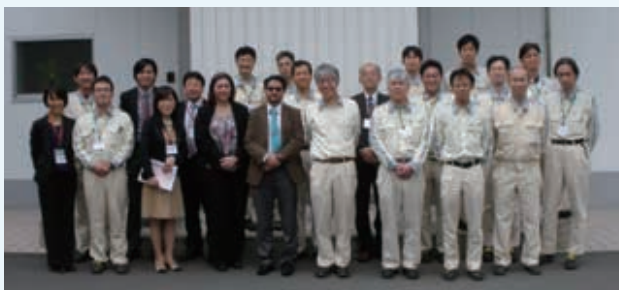
Number of complaints by cause



## TOPICS

### We have passed rigorous inspections and obtained / renewed certifications!

•Onoda Plant underwent an inspection by the Food and Drug Administration of the United States, which judged that the quality system for Fluralaner, an active ingredient for veterinary pharmaceuticals, is functioning appropriately.



•Nagoya Plant and Toyama Plant received the first JIS certification renewal examination of AdBlue®, a high-grade urea solution manufactured at the plants, and passed the examination.

•At Toyama Plant, HI-LITE® that is manufactured there underwent inspections under the U.S. standards NSF / ANSI-50 (standards for equipment for swimming pools) and NSF / ANSI-60 (standard for drinking water treatment chemicals) and renewed the certifications.



Moving forward, we will promote continuous improvements together with the plants to provide customers with safer, higher-quality products.



## Relationships with Investors

We have formulated a Disclosure Policy and disclose information in accordance with the rules on timely disclosure established by the Tokyo Stock Exchange, Inc., on which our shares are listed.

### Disclosure Policy (Excerpt)

#### 1) Information Disclosure Standards

The Company will disclose its information in accordance with the Financial Instruments and Exchange Act and other laws and ordinances, and with the Securities Listing Regulations, and other rules concerned with timely disclosure established by Tokyo Stock Exchange, Inc. where the Company's shares are listed (hereinafter "the Timely Disclosure Rules").

In the case where there arises any matter with significant impact on securities investment decisions such as facts concerning decisions or occurrences, financial results and information on any subsidiary, where Tokyo Stock Exchange, Inc. makes an inquiry and requests disclosure of the fact concerned with the inquiry, or where any material content regarding the Company's information already disclosed is changed, suspended or the like, the Company will disclose information in compliance with the Timely Disclosure Rules.

In addition, the Company endeavors to disclose company information other than that is required under the Timely Disclosure Rules (hereinafter "information subject to timely disclosure"), including materials presented in company briefing sessions, as positively and impartially as possible to meet investors' requests.

#### 2) Information Disclosure Methods

The Company will swiftly publish information that falls under the information subject to timely disclosure by means of the Timely Disclosure Network (TDnet) provided by Tokyo Stock Exchange, Inc., as well as on its own website. At the time of disclosing any information that is not subject to timely disclosure, the Company shall give consideration to transmission of the information to general investors in an appropriate, accurate and impartial manner in view of the objective of the Timely Disclosure Rules.

## Institutional Investors, Analysts, and the Media

We hold an IR briefing meeting for institutional investors, analysts, and the media every half year to explain the overall conditions of our business. This meeting is attended by the officer in charge of IR and the managers responsible from individual divisions. We also hold tours of our facilities for institutional investors and analysts as needed so that they can see our work sites in person and better understand our production and research. In addition, we participate every year in conferences in Japan and other countries hosted by securities companies.

## Overseas Investors

Our officer in charge of IR participates every year in conferences hosted by securities companies or other entities that are held in the United States, Europe, Asia and other regions. At these conferences, the officer provides explanations directly to overseas investors and exchanges opinions with them.

We publish news releases, business plans, presentation materials for full-year and first-half financial results briefing sessions in both Japanese and English at the same time, in principle, with the aim of disclosing information more promptly and fairly to investors in Japan and overseas.

## Private Investors

Once a year, we hold a briefing session for private investors, at which the officer in charge of IR provides explanations. We also hold a convivial party for shareholders after the end of each general shareholders' meeting to promote constructive dialogues with the shareholders who participated in the meeting.



▲ Financial results briefing session



## Relationships with Society

We recognize that creating a sustainable society is essential for the growth and development of companies. As a corporate citizen, we engage in a range of social contribution activities in addition to providing products and services with new values that help enrich people's lives.

### Support for the Next Generation

In FY2015, we became involved with the "Tobitate! (Leap for Tomorrow) Young Ambassador Program", a joint government-industry project for supporting students who wish to study overseas. This program is aimed at fostering globally competitive individuals who will demonstrate their capabilities on the world stage in the future. Japanese companies make donations and regularly cooperate with student selection and other processes as judges to send high school and university students, who are the potential future leaders of Japan, to various parts of the world.

In addition, Chemical Research Laboratories and Materials Research Laboratories send their staff members to local elementary schools to give special classes. In FY2016, they visited three schools and conducted two chemical experiments by picking up familiar themes. Biological Research Laboratories provides local junior high school students with opportunities for work experience. In FY2016, it provided four students from two junior high schools with opportunities to experience a range of operations. It also accepts interns and dispatches part-time lecturers.



#### TOPICS

#### Summer Riko-Challe 2017

The "Summer Riko-Challe" is an event aimed at arousing interest in and promoting understanding of careers in the field of science and technology among female students. It is co-hosted by the Cabinet Office, the Ministry of Education, Culture, Sports, Science and Technology and Keidanren (the Japan Business Federation). In 2017, we registered to participate in the event for the first time. In July of the same year, Biological Research Laboratories invited 13 female junior high school students from Saitama and other prefectures for work experience and interactions with female laboratory staff, thereby deepening their interest in science and technology.



### Interaction with Local Residents

We hold plant tours and explanatory meetings on a regular basis for local residents and schools. During these meetings we explain our initiatives for disaster prevention and environmental protection in an effort to show them that the plants are safe and secure. We also participate in local beautification activities such as cleaning of public roads and nearby stations around the plants, and activities for planting flowers together with local residents. In addition, Onoda Plant co-hosted an event for experiencing "eco-friendly craft in the summer holidays" with the regional councils on global warming countermeasures of Sanyo-Onoda City. Participants in the event enjoyed creating wind turbines from plastic bottles.

### Welfare Fund

We have been engaged in welfare fund activities since 1997 as a part of our activities for contributing to local communities. These activities are carried out individually at the head office and individual offices, plants, laboratories, and group companies. They are also conducted as joint projects. In these activities, there are cases where staff members visit welfare facilities and ask them what items they need before considering what to donate. Overall, the activities are carried out in a community-based manner.

### Industry Awards

To support the development of synthetic organic chemistry, we established the "Nissan Chemical Industries Award for Novel Reaction & Method" in FY2009 as an award presented by the Society of Synthetic Organic Chemistry, Japan. This award is granted to researchers who have made creative, excellent achievements in research related to novel reactions and methods. The research undertaken by Professor Takayoshi Arai of Chiba University, who was the FY2016 recipient of the award, promotes catalyst searches, the elucidation of complex catalysts' structures and functions, and the development of novel reactions made by using them, which is enabled by creating unique asymmetric catalysts. This research is highly acclaimed in Japan and overseas.

# Relationships with Employees

## Approach

In the mid-term business plan "Vista2021", "transforming into an organization where excellent challengers are fostered and utilizing the ideas of a diverse range of individuals" is described as the way our group should be. To bring these situations about, we intend to tackle a range of initiatives including the exchange of personnel between departments and the promotion of diversity. We also instituted health promotion initiatives, including mental health measures, to create a pleasant work environment. As a result, we were recognized under the "2017 Certified Health and Productivity Management Organization Recognition Program (White 500)\*" in February 2017. We will continue to create organizations and work environments that will allow employees to demonstrate their capabilities to the fullest.

\* A program for recognizing "health and productivity management" initiatives with which employee health management is considered from the viewpoint of business administration and put into practice strategically.

## Personnel System

Our personnel system is a structure that, through the interactive communication (dialogue) with their superiors, staff as "an independent individual" can work vibrantly with high motivation, utilizing their creativity while feeling their own growth toward the ideal picture of who they want to be. We strive to improve the transparency and persuasiveness of our personnel evaluation to make it fair, and ensure that it better reflects the achievements and contributions of employees.

In "Progress2030", our long-term business plan, we set "a group of innovators who embody dreams" as the vision of what we should aim for as an enterprise. To make this vision a reality with initiatives in the personnel system, we promote the following measures.

- Building a policy on human resource development: "What the leaders of Nissan Chemical should be like"
- Introducing career support programs that encourage individuals to take on "challenges"
- Developing management human resources and globally competitive human resources and enhancing measures for beginning to foster them at an early stage

## Respect for Diversity, Personal Characteristics and Ways of Thinking of Individuals

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 age, gender and nationality.

We will continue to promote respect for diversity in accordance with our action plans and similar. One thing that we are proud of is our high employee retention rate. We believe that our workplace environment allows each individual employee to play an active part.

### Action Plan for Promoting Active Participation of Women in the Workplace (Excerpt)

- Period of the plan Five years from April 1, 2016 to March 31, 2021
- Issue The proportion of women among employees in the main career track is especially low.
- Target Increase the proportion of women among employees in the main career track to 10% or higher
- Actions to take
  1. Increase the proportion of women among new graduates in the main career track to 30% or higher
  2. Assign women proactively to departments with low rates of female employees in the main career track

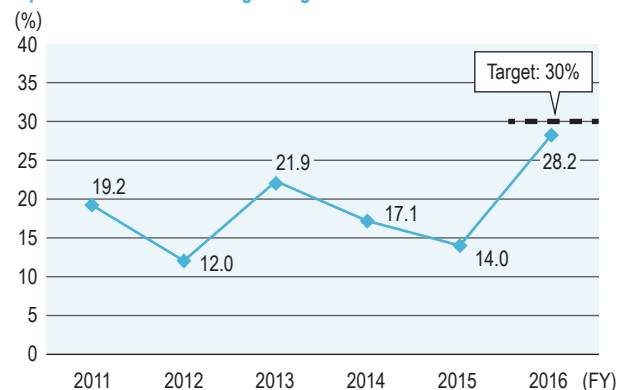
### Activities for Recruiting Foreign Students

We recruit foreign students as a measure for developing globally competitive human resources. For this purpose, we are focusing mainly on enhancing public relations activities, such as posting information on job hunting websites, in addition to participating in company information sessions for foreign students. Moving forward, we will continue to promote the diversity of our human resources by employing foreign students continually and create an organization that will allow diverse human resources to demonstrate their capabilities.

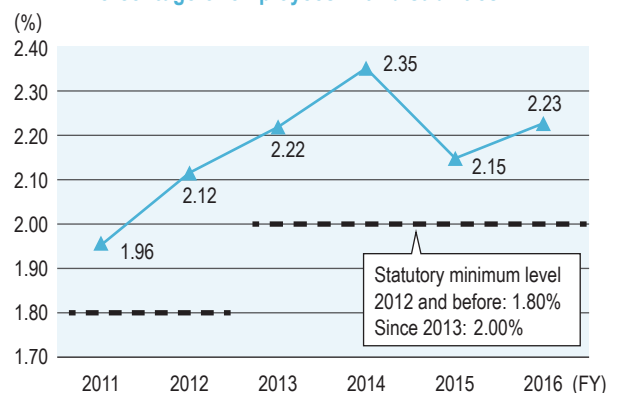
### Employment of People with Disabilities

For more than ten years, we have kept the percentage of employees with disabilities at a level above the statutory minimum rate. We will continue to observe the legal requirements and remain proactive in providing workplaces that enable the active participation of people with disabilities.

Proportion of women among new graduates in the main career track



Percentage of employees with disabilities



## Training and Capability Development

We believe it is essential for human resource development that “each employee should continue to educate themselves voluntarily in their efforts to develop themselves”. We have therefore introduced various human resource development programs for our employees who aspire to learn new things and develop themselves.

### Educational Training System

	Developing leadership			Improving research and development capabilities and production technology capabilities	Developing a cosmopolitan way of thinking	Support for career development	Cultural education										
	Managerial position / C class	A class	Common	Managerial position / C class	Managerial position / C class	Common	Common										
Managerial positions			Evaluator Training	Internal research exchange meeting	Dispatch to external research institutions	R&D strategic planning training	Theme proposal system	Production technology presentation	Strategic OJT	Domestic and overseas study programs	Cross-cultural communication training (Overseas language program, English conversation training, etc.)	Correspondence course	Dispatch to external classes for acquiring specialized knowledge	Acquisition of qualifications	Compliance training	Training on health management / promotion	CSR training
Non-managerial positions	Training before promotion to managerial position	Training for improving on-site capabilities															
	Training before promotion to C3 class	Training before promotion to A3 class															
	Third year self-start training	Business improvement training															
	Second year self-start training																
	New staff self-start training	New employee training															

### List of training programs (implemented in FY2016)

Name	Content	Number of trainees	Period
New staff self-start training	Improvement of communication skills / Career training	43	28 days
Second year self-start training	Presentation of assigned research papers	36	2 days
Third year self-start training	Presentation of assigned research papers / Development of junior leadership	33	4 days
Training before promotion to C3 Class / managerial position	Developing the capability of setting essential challenges and the capability of formulating strategies	66	6 days
Training before promotion to A3 class	Developing leadership	22	4 days
Evaluator training	Improving evaluation skills	55	1 day
Domestic and overseas study programs	Fostering next-generation leaders	5	
Overseas language study program	Dispatch to overseas language schools	6	90 days
E-mail writing training	Improving skills in writing e-mails in English	96	1 day
Strategic OJT	Improving the capability of developing human resources	22	
Correspondence course	Improving the business execution capability	851	



▲ People who completed the overseas language study program (fourth class)



▲ Training before promotion to C3 class



▲ Training before promotion to managerial position

## Relationships with Employees

### Awards Program

Every year we grant awards to employees who have made beneficial inventions, devised improvement measures, or made remarkable achievements and contributions. Regarding intellectual properties, we also reward excellent inventions selected from among patent-pending inventions at an early stage in an effort to create greater incentive for R&D, discover excellent inventions and improve upon their quality and creativity.

Name	Presenter	Content	Number of awards	Number of rewarded
Central Awards	President and CEO	Commend employees who have made beneficial inventions, devised improvement measures, or made remarkable achievements and contributions.	2	9
Division Awards	Head of each division		3	18
Office Awards	Head of each office		11	69
Rewards for Excellent Inventions	Officer in charge of Intellectual Property Department	Reward excellent inventions at an early stage to promote the improvement of R&D capabilities. Rank S rewards are granted to more excellent inventions.	21 (Rank S: 3 inventions)	69

(FY2016)



▲ Central Awards presentation ceremony

### Creation of a Comfortable Workplace

We have introduced a wide variety of programs and measures that enable employees to work in a highly productive manner and achieve a good work-life balance. In recent years, we have maintained a high rate of paid leave use of more than 70%. In addition, we have implemented No Overtime Day and other measures to raise employee awareness toward work efficiency and help create a comfortable workplace.

#### Systems for Promoting a Good Work-Life Balance

Name	Content
Flextime	This system has been introduced at the head office and laboratories.
Childcare Leave	If certain requirements are fulfilled, an employee may take childcare leave until their child is two years old or until the coming April 20 after the child's first birthday.
Paternity Leave	A male employee whose spouse gave birth to a child may take up to seven days of paternity leave (paid leave) within eight weeks of the child's birth.
Nursing Care Leave	An employee may use up to 20 days per year of annual leave which has been saved up for childcare or spousal care and which is no longer valid.
Family Care Leave	If certain requirements are fulfilled, an employee may take up to 365 days of family care leave in total per family member needing care. Family care leave may be taken in up to three installments.
Shorter Working Hours	Specified working hours may be shortened by units of 30 minutes and by up to 120 minutes for looking after children in third grade (elementary school) or younger.
Half-day Leave	An employee may take annual leave by units of half days, with an upper limit of 30 times per year.
Planned Leave	We recommend that 2 days of company-wide planned leave and 3 days of individually planned leave are taken every year.
Annual Leave Accumulation	An employee may save up a maximum of 40 days of annual leave that are invalid and use them as medical leave, leave for their own sickness, leave to conduct a complete medical checkup, leave to look after elderly or sick family members, or for other similar purposes.
Refreshment Leave	An employee may take ten consecutive days of leave (paid leave) within one year after becoming 50 years old. Financial aid is also granted.
Re-employment Refreshment Leave	An employee may take three consecutive days of leave (paid leave) within one month before or after their mandatory retirement.

#### Promotion of Appropriate Work Hours

- Encouraging employees to take annual paid leave: As a result of labor-management consultations, we recommend that two days of company-wide planned leave and three days of individually planned leave are taken every year. An annual paid leave calendar is created at each workplace. In addition, for employees who have taken very few days of paid leave, the Personnel Department contacts the superiors of such employees and encourages them to take paid leave.
- 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.

### Countermeasures against Harassment

The revised Act on Securing, Etc. of Equal Opportunity and Treatment between Men and Women in Employment and the revised Act on Childcare Leave, Caregiver Leave and Other Measures for the Welfare of Workers Caring for Children or Other Family Members came into full effect on January 1, 2017. These laws make it mandatory for employers to take measures for preventing harassment by superiors or co-workers related to pregnancy, childbirth, childcare leave, family care leave and similar events.

#### Countermeasures against Power Harassment

- In 2013, we introduced training for obtaining basic knowledge on power harassment as part of the training before promotion to A3 class (positions equivalent to team leaders at plants). More than 100 employees have undergone this training so far.
- Consultation services and explanatory materials are provided on our intranet (internal network) to raise awareness of power harassment.

#### Measures against Harassment Related to Pregnancy, Childbirth, Childcare Leave, Family Care Leave, etc.

- We have added consultation services and explanatory materials on harassment related to pregnancy, childbirth, childcare leave, family care leave, etc. to the existing ones on sexual harassment.
- We have revised our rules of employment in our efforts to prevent harassment.



## Health

We support the promotion of good physical and mental health proactively by working together with the Nissan Chemical Health Insurance Association so that all our employees can enjoy working.

### 2017 Certified Health and Productivity Management Organization Recognition Program (White 500)

- In February 2017, we were recognized under the "2017 Certified Health and Productivity Management Organization Recognition Program (White 500)".

### Mental Health Measures

- We carry out a stress check, analyze its results and give feedback, and provide Line-Care\*1 and Self-Care\*2 Training as necessary.
  - Stress check (September 2016): Undergone by 99.4% of all employees
  - Organizational analysis of stress check and reporting session: A total of twelve reporting sessions were held for executives at the head office, laboratories, and plants. The analysis and holding of reporting sessions were outsourced to an external specialty company.
  - Training: Self-Care Training was provided twice to new employees and those who had never undergone the training.
- \*1 Care provided by manager / supervisor. It includes understanding and improving the work environment daily and providing consultations to subordinates.  
\*2 Care that can be provided to oneself. It includes being aware of one's own stress and preventing or coping with stress.

### Health Promotion Committee

- The members of this committee are selected from the company, the Nissan Chemical Health Insurance Association, and the Nissan Chemical Labor Union, two from each, and meet regularly to discuss health promotion measures. The committee met four times in FY2016.

### Regular Health Checkups

- We encourage employees to undergo regular health checkups by targeting a rate of 100%. We achieved the target rate of 100% in FY2016 (Note).

Note: Employees on temporary retirement, etc. are excluded.



▲ Certificate granted under the 2017 Certified Health and Productivity Management Organization Recognition Program

## Labor-Management Relationship Based on Open Dialogue and Mutual Understanding

Nissan Chemical and the Nissan Chemical Labor Union have built a good relationship based on mutual understanding and trust. They strive to improve labor conditions and develop systems through discussions as good partners to the management by taking a range of measures, including holding periodic meetings for reporting business results and initiatives for better work-life balance.

All non-managerial employees, excluding those who have concluded a special agreement with the company, belong to the Nissan Chemical Labor Union. The number of its members is 1,417 (including those from some affiliates). (as of March 31, 2017)

Name of the meeting	Content	Number of meetings held in FY2016	Number of participants per meeting
Central Management Advisory Council	The policies and financial results of the company are explained by the management to the labor union members.	2	Company: 6 Labor union: 7
Business Location Management Advisory Council	1) Explanation of the contents of the Central Management Advisory Council 2) Discussions about problems that are specific to each business location	Differs among business locations	Executives of the business location Executives of the labor union branch
Dialogue activities	Opportunities for the management and general union members to have open dialogues. Union members can discuss issues and problems of their own workplaces directly with the management.	3	Company: 3 Labor union: Slightly more than 10
Labor-Management Committee	The Personnel Department and executive members of the labor union regularly exchange opinions about a wide range of problems and hold discussions to solve issues.	8	Company: 3 Labor union: 7
Health Promotion Committee	Two each are selected from the company, the health insurance association, and the labor union as its members, who discuss measures for promoting good health among employees and other issues.	4	Company: 2 Health insurance union: 2 Labor union: 2
Workstyle Committee	This committee was launched in 2017 as a forum for labor-management discussions for reviewing the workstyle.	—	—



▲ Central Management Advisory Council



# Financial Section

## Financial Review

Financial Review of the Year Ended March 31, 2017

### Overview

During the year ended March 31, 2017 (from April 1, 2016 to March 31, 2017), the domestic economy has been slowly recovering due to the improvement of income environment and employment situation though the individual consumption seems weak. By contrast, the world economy has increased a sense of uncertain and foreign currency exchange and fuel prices have fluctuated.

In this situation, in our group business, the sales of Chemicals Segment strongly increased in both Basic Chemicals and Fine Chemicals. In the Performance Materials Segment, the Display Materials had healthy sales. In the Agricultural Chemicals Segment, the sales of Fluralaner (an active ingredient of veterinary pharmaceutical) increased. In the Pharmaceutical Segment, the domestic sales of "LIVALO®" (anti-cholesterol drug) decreased due to expansion of generic products.

### Operating Results

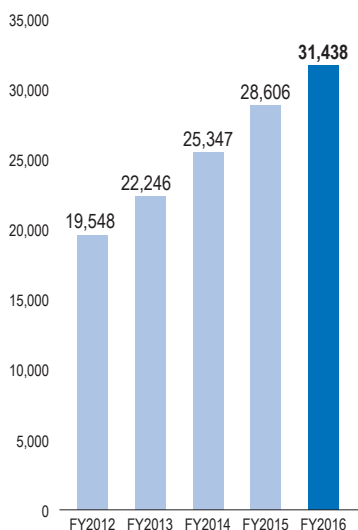
As a result of previously mentioned factors, the sales for this period were 180,289 million yen (an increase of 3,394 million yen from the same period of the previous year). Operating income was 31,438 million yen (an increase of 2,832 million yen). Ordinary income was 31,713 million yen (an increase of 2,181 million yen). Net income attributable to owners of parent was 24,026 million yen (an increase of 1,676 million yen).

We have achieved the highest operating income and ordinary income for three consecutive years and regarding net income attributable to owners of parent, we have achieved it for four consecutive years.

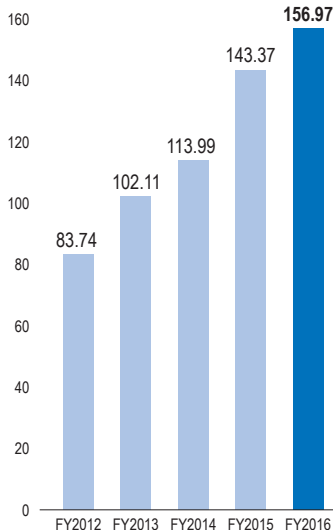
### Financial Position

Total assets as of March 31, 2017 were 231,748 million yen (an

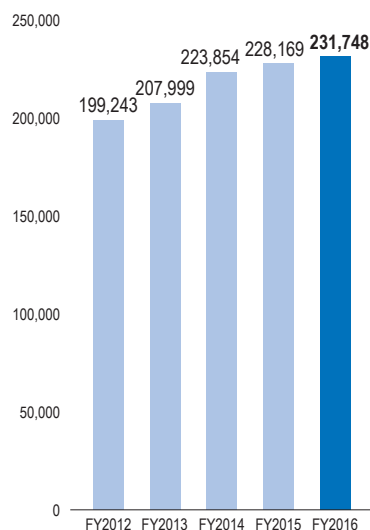
Operating Income (Millions of Yen)



Net Income per Share (Yen)



Total Assets (Millions of Yen)



increase of 3,579 million yen from March 31, 2016). It is mainly due to the increase of notes and accounts receivable - trade.

Also, total liabilities as of March 31, 2017 were 68,041 million yen (a decrease of 3,203 million yen). It is mainly due to the decrease of long-term loans payable.

Net assets as of March 31, 2017 were 163,707 million yen (an increase of 6,782 million yen).

As a result of these factors, equity ratio was 69.9% (an increase of 1.8 point from March 31, 2016).

### Position of Cash Flow

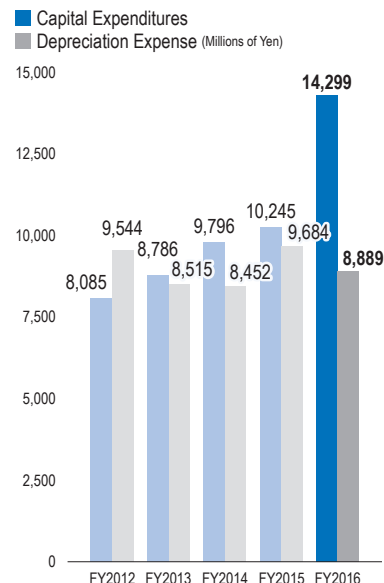
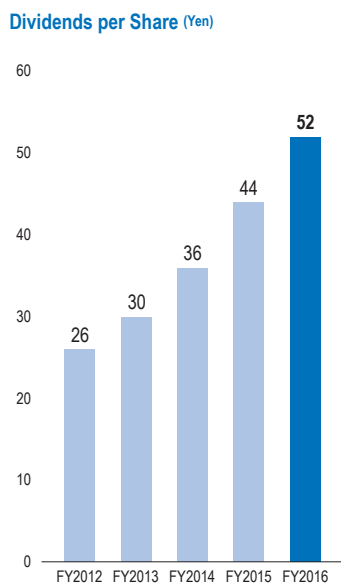
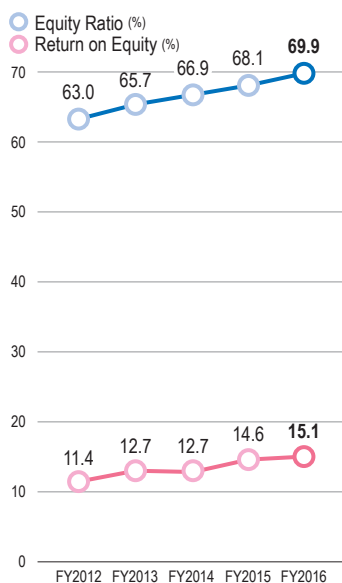
Deducting income taxes paid from income before income taxes and non-controlling interests, depreciation and gain and loss on working capital, net cash provided by operating activities for the year ended March 31, 2017 were 32,491 million yen (29,989 million yen for the

same period of the previous year).

Due to the proceeds from sales of investment securities and the investment on plant and equipment, net cash used in investing activities for the year ended March 31, 2017 were 13,152 million yen (8,416 million yen).

Due to the share repurchase, payment for dividends and payments of long-term loans payable, net cash used in financing activities for the year ended March 31, 2017 were 19,042 million yen (17,317 million yen).

As a result of these factors, cash and cash equivalents at end of this period were 35,701 million yen (35,335 million yen), reflecting 94 million yen effect of exchange rate changes and 25 million yen decrease in cash and cash equivalents resulting from exclusion of subsidiaries from consolidation. It increased by 365 million yen from March 31, 2016.



# Consolidated Balance Sheets

For FY2016 and FY2015

Assets	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2016	FY2015	FY2016
<b>Current assets</b>			
Cash and deposits	¥ 35,701	¥ 35,335	\$ 318,191
Notes and accounts receivable - trade	60,075	57,606	535,428
Merchandise and finished goods	28,602	30,198	254,920
Work in process	64	43	570
Raw materials and supplies	7,778	8,266	69,323
Accounts receivable - other	2,379	4,726	21,203
Short-term loans receivable	1,065	1,039	9,492
Deferred tax assets	2,708	2,968	24,135
Other	2,221	2,030	19,795
Allowance for doubtful accounts	(33)	(34)	(294)
Total current assets	140,564	142,181	1,252,799
<b>Non-current assets</b>			
Property, plant and equipment			
Buildings and structures	62,253	59,662	554,840
Accumulated depreciation and impairment loss	(38,428)	(37,027)	(342,496)
Buildings and structures, net	23,824	22,635	212,335
Machinery, equipment and vehicles	120,540	116,267	1,074,332
Accumulated depreciation and impairment loss	(109,038)	(107,181)	(971,818)
Machinery, equipment and vehicles, net	11,502	9,086	102,513
Tools, furniture and fixtures	35,717	33,828	318,333
Accumulated depreciation and impairment loss	(30,880)	(28,819)	(275,223)
Tools, furniture and fixtures, net	4,837	5,008	43,111
Land	9,198	9,195	81,979
Leased assets	103	116	918
Accumulated depreciation	(90)	(87)	(802)
Leased assets, net	12	28	107
Construction in progress	2,594	1,506	23,119
Total property, plant and equipment	51,969	47,461	463,182
<b>Intangible assets</b>			
Software	610	476	5,437
Other	966	426	8,610
Total intangible assets	1,577	903	14,055
<b>Investments and other assets</b>			
Investment securities	32,465	33,251	289,349
Deferred tax assets	125	99	1,114
Net defined benefit asset	1,987	2,086	17,709
Other	3,156	2,354	28,128
Allowance for doubtful accounts	(98)	(167)	(873)
Total investments and other assets	37,636	37,623	335,437
Total non-current assets	91,183	85,988	812,683
<b>Total assets</b>	¥ 231,748	¥ 228,169	\$ 2,065,490

Liabilities	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2016	FY2015	FY2016
<b>Current liabilities</b>			
Notes and accounts payable - trade	¥ 14,943	¥ 15,350	\$ 133,182
Short-term loans payable	23,155	22,938	206,373
Current portion of long-term loans payable	3,070	3,060	27,362
Income taxes payable	3,288	4,576	29,305
Provision for bonuses	1,920	1,874	17,112
Provision for directors' bonuses	28	21	250
Provision for environmental measures	—	350	—
Other	11,259	9,765	100,348
Total current liabilities	57,665	57,937	513,948
<b>Non-current liabilities</b>			
Long-term loans payable	4,580	7,100	40,820
Deferred tax liabilities	2,649	3,095	23,610
Provision for business structure improvement	594	680	5,294
Provision for loss on business of subsidiaries and affiliates	309	309	2,754
Net defined benefit liability	101	102	900
Other	2,141	2,020	19,082
Total non-current liabilities	10,376	13,307	92,478
<b>Total liabilities</b>	<b>68,041</b>	<b>71,244</b>	<b>606,426</b>
<b>Net assets</b>			
<b>Shareholders' equity</b>			
Capital stock	18,942	18,942	168,824
Capital surplus	13,611	13,611	121,310
Retained earnings	126,370	115,878	1,126,292
Treasury shares	(7,587)	(4,281)	(67,620)
Total Shareholders' equity	151,337	144,151	1,348,815
<b>Accumulated other comprehensive income</b>			
Valuation difference on available-for-sale securities	10,079	10,515	89,831
Foreign currency translation adjustment	243	171	2,166
Remeasurements of defined benefit plans	380	554	3,387
Total Accumulated other comprehensive income	10,703	11,241	95,392
<b>Non-controlling interests</b>	<b>1,666</b>	<b>1,531</b>	<b>14,848</b>
Total net assets	163,707	156,924	1,459,064
<b>Total liabilities and net assets</b>	<b>¥ 231,748</b>	<b>¥ 228,169</b>	<b>\$ 2,065,490</b>

# Consolidated Statements of Income / Consolidated Statements of Comprehensive Income

For FY2016 and FY2015

## Consolidated Statements of Income

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2016	FY2015	FY2016
<b>Net sales</b>	¥ 180,289	¥ 176,894	\$ 1,606,854
<b>Cost of sales</b>	105,916	106,146	943,993
<b>Gross profit</b>	74,372	70,748	662,852
<b>Selling, general and administrative expenses</b>	42,934	42,142	382,656
<b>Operating income</b>	31,438	28,606	280,196
<b>Non-operating income</b>			
Interest income	20	16	178
Dividend income	726	580	6,471
Equity in earnings of affiliates	701	858	6,248
Other	805	1,022	7,175
Total non-operating income	2,253	2,478	20,080
<b>Non-operating expenses</b>			
Interest expenses	156	194	1,390
Loss on disposal of non-current assets	601	319	5,357
Plant stop losses	274	327	2,442
Product compensation expenses	—	211	—
Impairment loss	220	—	1,961
Foreign exchange losses	314	165	2,799
Other	411	334	3,663
Total non-operating expenses	1,978	1,552	17,629
<b>Ordinary income</b>	31,713	29,531	282,647
<b>Extraordinary income</b>			
Gain on sales of investment securities	—	3,081	—
Total extraordinary income	—	3,081	—
<b>Extraordinary losses</b>			
Impairment loss	—	3,941	—
Loss on business of subsidiaries and affiliates	—	311	—
Total extraordinary losses	—	4,253	—
<b>Income before income taxes and non-controlling interests</b>	31,713	28,360	282,647
Income taxes - current	7,439	7,955	66,301
Income taxes - deferred	81	(2,151)	722
Total income taxes	7,520	5,804	67,023
<b>Net income</b>	24,192	22,556	215,615
Net income attributable to non-controlling interests	166	206	1,480
<b>Net income attributable to owners of parent</b>	¥ 24,026	¥ 22,350	\$ 214,135

## Consolidated Statements of Comprehensive Income

	(Millions of Yen)		(Thousands of U.S. Dollars)
	FY2016	FY2015	FY2016
<b>Net income</b>	¥ 24,192	¥ 22,556	\$ 215,615
<b>Other comprehensive income</b>			
Valuation difference on available-for-sale securities	(436)	(159)	(3,886)
Foreign currency translation adjustment	188	(800)	1,676
Remeasurements of defined benefit plans, net of tax	(174)	(84)	(1,551)
Share of other comprehensive income of affiliates accounted for using equity method	1	(1)	9
Total other comprehensive income	(420)	(1,047)	(3,743)
<b>Comprehensive income</b>	23,771	21,508	211,863
(Comprehensive income attribute to)			
Owners of parent	23,584	21,380	210,196
Non-controlling interests	¥ 186	¥ 127	\$ 1,658



# Consolidated Statements of Changes in Net Assets

For FY2016

	(Millions of Yen)				
	Total shareholders' equity				
	Capital stock	Capital surplus	Retained earnings	Treasury shares	Total shareholders' equity
<b>Balance at beginning of current period</b>	¥ 18,942	¥13,611	¥ 115,878	¥ (4,281)	¥ 144,151
<b>Changes of items during period</b>					
Dividends of surplus			(7,680)		(7,680)
Net income attributable to owners of parent			24,026		24,026
Change in scope of consolidation			(157)		(157)
Share repurchase				(9,002)	(9,002)
Disposal of treasury shares		0		0	0
Cancellation of treasury shares		(0)	(5,695)	5,695	—
Net changes of items other than shareholders' equity					
<b>Total changes of items during period</b>	—	—	10,492	(3,305)	7,186
<b>Balance at end of current period</b>	¥ 18,942	¥ 13,611	¥ 126,370	¥ (7,587)	¥ 151,337

	Accumulated other comprehensive income					
	Valuation difference on available-for-sale securities	Foreign currency translation adjustment	Remeasurements of defined benefit plans	Total accumulated other comprehensive income	Non-controlling interests	Total net assets
	<b>Balance at beginning of current period</b>	¥ 10,515	¥ 171	¥ 554	¥ 11,241	¥ 1,531
<b>Changes of items during period</b>						
Dividends of surplus						(7,680)
Net income attributable to owners of parent						24,026
Change in scope of consolidation						(157)
Share repurchase						(9,002)
Disposal of treasury shares						0
Cancellation of treasury shares						—
Net changes of items other than shareholders' equity	(435)	72	(174)	(537)	134	(403)
<b>Total changes of items during period</b>	(435)	72	(174)	(537)	134	6,782
<b>Balance at end of current period</b>	¥ 10,079	¥ 243	¥ 380	¥ 10,703	¥ 1,666	¥ 163,707

# Consolidated Statements of Changes in Net Assets

For FY2015

	(Millions of Yen)				
	Total shareholders' equity				
	Capital stock	Capital surplus	Retained earnings	Treasury shares	Total shareholders' equity
<b>Balance at beginning of current period</b>	¥ 18,942	¥ 13,611	¥ 105,602	¥ (584)	¥ 137,572
<b>Changes of items during period</b>					
Dividends of surplus			(6,269)		(6,269)
Net income attributable to owners of parent			22,350		22,350
Change in scope of consolidation			(500)		(500)
Share repurchase				(9,001)	(9,001)
Disposal of treasury shares			0	0	0
Cancellation of treasury shares			(0)	(5,304)	5,304
Net changes of items other than shareholders' equity					
<b>Total changes of items during period</b>	—	—	10,276	(3,696)	6,579
<b>Balance at end of current period</b>	¥ 18,942	¥ 13,611	¥ 115,878	¥ (4,281)	¥ 144,151

	Accumulated other comprehensive income					
	Valuation difference on available-for-sale securities	Foreign currency translation adjustment	Remeasurements of defined benefit plans	Total accumulated other comprehensive income	Non-controlling interests	Total net assets
	<b>Balance at beginning of current period</b>	¥ 10,676	¥ 894	¥ 639	¥ 12,210	¥ 1,481
<b>Changes of items during period</b>						
Dividends of surplus						(6,269)
Net income attributable to owners of parent						22,350
Change in scope of consolidation						(500)
Share repurchase						(9,001)
Disposal of treasury shares						0
Cancellation of treasury shares						—
Net changes of items other than shareholders' equity	(161)	(722)	(84)	(969)	50	(918)
<b>Total changes of items during period</b>	(161)	(722)	(84)	(969)	50	5,660
<b>Balance at end of current period</b>	¥ 10,515	¥ 171	¥ 554	¥ 11,241	¥ 1,531	¥ 156,924

## For FY2016

	(Thousands of U.S. dollars)				
	Total shareholders' equity				
	Capital stock	Capital surplus	Retained earnings	Treasury shares	Total shareholders' equity
<b>Balance at beginning of current period</b>	\$ 168,824	\$ 121,310	\$ 1,032,781	\$ (38,155)	\$ 1,284,768
<b>Changes of items during period</b>					—
Dividends of surplus			(68,449)		(68,449)
Net income attributable to owners of parent			214,135		214,135
Change in scope of consolidation			(1,399)		(1,399)
Share repurchase				(80,232)	(80,232)
Disposal of treasury shares		0		0	0
Cancellation of treasury shares		(0)	(50,758)	50,758	—
Net changes of items other than shareholders' equity					
<b>Total changes of items during period</b>	—	—	93,512	(29,456)	64,046
<b>Balance at end of current period</b>	\$ 168,824	\$ 121,310	\$ 1,126,292	\$ (67,620)	\$ 1,348,815

	Accumulated other comprehensive income					
	Valuation difference on available-for-sale securities	Foreign currency translation adjustment	Remeasurements of defined benefit plans	Total accumulated other comprehensive income	Non-controlling interests	Total net assets
	<b>Balance at beginning of current period</b>	\$ 93,717	\$ 1,524	\$ 4,938	\$ 100,187	\$ 13,645
<b>Changes of items during period</b>						
Dividends of surplus						(68,449)
Net income attributable to owners of parent						214,135
Change in scope of consolidation						(1,399)
Share repurchase						(80,232)
Disposal of treasury shares						0
Cancellation of treasury shares						—
Net changes of items other than shareholders' equity	(3,877)	642	(1,551)	(4,786)	1,194	(3,592)
<b>Total changes of items during period</b>	(3,877)	642	(1,551)	(4,786)	1,194	60,446
<b>Balance at end of current period</b>	\$ 89,831	\$ 2,166	\$ 3,387	\$ 95,392	\$ 14,848	\$ 1,459,064

# Consolidated Statements of Cash Flows

For FY2016 and FY2015

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2016	FY2015	FY2016
<b>Cash flows from operating activities</b>			
Income before income taxes and non-controlling interests	¥ 31,713	¥ 28,360	\$ 282,647
Depreciation	8,889	9,684	79,225
Impairment loss	220	3,941	1,961
Interest and dividend income	(746)	(597)	(6,649)
Interest expenses	156	194	1,390
Increase (decrease) in provision for business structure improvement	(86)	(23)	(766)
Increase (decrease) in provision for loss on business of subsidiaries and affiliates	—	309	—
Loss (gain) on sales of investment securities	—	(3,081)	—
Loss (gain) on disposal of non-current assets	601	319	5,357
Decrease (increase) in notes and accounts receivable-trade	(2,573)	143	(22,932)
Decrease (increase) in inventories	2,054	(2,716)	18,307
Increase (decrease) in notes and accounts payable-trade	(334)	352	(2,977)
Other	(474)	(514)	(4,225)
Subtotal	39,419	36,372	351,328
Interest and dividend income received	2,175	1,177	19,385
Interest expenses paid	(156)	(194)	(1,390)
Income taxes paid	(8,947)	(7,366)	(79,742)
Net cash provided by (used in) operating activities	32,491	29,989	289,581
<b>Cash flows from investing activities</b>			
Purchase of investment securities	(787)	(331)	(7,014)
Proceeds from sales of investment securities	2,988	2,206	26,631
Purchase of property, plant and equipment	(12,394)	(9,071)	(110,463)
Payments for retirement of property, plant and equipment	(477)	(262)	(4,251)
Purchase of intangible assets	(1,091)	(383)	(9,724)
Net decrease (increase) in short-term loans receivable	(12)	(216)	(107)
Purchase of long-term prepaid expenses	(834)	(844)	(7,433)
Other	(542)	485	(4,831)
Net cash provided by (used in) investing activities	(13,152)	(8,416)	(117,219)
<b>Cash flows from financing activities</b>			
Net increase (decrease) in short-term loans payable	220	54	1,961
Proceeds from long-term loans payable	550	1,100	4,902
Repayments of long-term loans payable	(3,060)	(3,090)	(27,273)
Cash dividends paid	(7,680)	(6,269)	(68,449)
Dividends paid to non-controlling interests	(52)	(70)	(463)
Share repurchase	(9,002)	(9,001)	(80,232)
Other	(17)	(40)	(152)
Net cash provided by (used in) financing activities	(19,042)	(17,317)	(169,715)
<b>Effect of exchange rate change on cash and cash equivalents</b>	94	(324)	838
<b>Net increase (decrease) in cash and cash equivalents</b>	390	3,931	3,476
<b>Cash and cash equivalents at beginning of period</b>	35,335	31,343	314,929
<b>Increase in cash and cash equivalents from newly consolidated subsidiary</b>	—	61	—
<b>Decrease in cash and cash equivalents resulting from exclusion of subsidiaries from consolidation</b>	(25)	—	(223)
<b>Cash and cash equivalents at end of period</b>	¥ 35,701	¥ 35,335	\$ 318,191

# 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, 2017 include the account of Nissan Chemical Industries, Ltd. (the “Company”) and its eight main (ten in FY2015) 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 FY2015) 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

The allowance for doubtful accounts is the Company’s best estimate for the amount of probable credit losses in the Company’s existing trade receivables.

An additional reserve for individual receivable is recorded when the Company becomes 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 Company provides accrued bonuses for employees based on the estimated amounts to be paid for the fiscal year.

### i. Provision for Director’s Bonuses

The Company provides 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, to 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, 2017 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 ¥112.20 to US \$1, which is the approximate closing exchange rate reported by the Tokyo Foreign Exchange Market on March 31, 2017. 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. Change in Accounting Policy**

Effective from the beginning of the current consolidated fiscal year, the Company adopted the "Practical Solution on a change in depreciation method due to Tax Reform 2016" (Practical Issue Task Force (PITF) No.32, issued on June 17, 2016) in accordance with the revision of the Corporation Tax Law of Japan.

Accordingly, the Company changed the depreciation method for facilities attached to buildings and structures acquired on and after April 1, 2016 from the declining-balance method to the straight-line method.

The impact of this change on operating income, ordinary income, and income before income taxes and non-controlling interests for the current consolidated fiscal year was immaterial.

### **5. Reclassifications**

Effective from the beginning of the current consolidated fiscal year, "Gain on sales of non-current assets", which were displayed separately in "Non-operating income" in the previous fiscal year, are now included in "Other" since the amount was lower than 10% of "Non-operating income".

In order to reflect the change, the Company has reclassified the consolidated financial statement for the previous fiscal year.

As a result, 274 million yen of "Gain on sales of non-current assets" and 748 million yen of "Other", which were shown in "Non-operating income" in the previous consolidated statements of income, are reclassified as 1,022 million yen of "Other".

Effective from the beginning of the current consolidated fiscal year, "Purchase of intangible assets" and "Purchase of long-term prepaid expenses", which were included in "Other" of "Cash flows from investing activities" in the previous fiscal year, are displayed separately to improve the level of clarity.

In order to reflect the change, the Company has reclassified the consolidated financial statement for the previous fiscal year.

As a result, (742) million yen of "Other" in the previous consolidated statements of cash flows are reclassified as (383) million yen of "Purchase of intangible assets", (844) million yen of "Purchase of long-term prepaid expenses" and 485 million yen of "Other".

## 6. Collateral Assets and Liabilities

Collateral assets and liabilities as of FY2016 and FY2015 were as follows:

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2016	FY2015	FY2016
Investment securities	¥ 97	¥ 180	\$ 865
Accounts payable	¥ 253	¥ 270	\$ 2,255
Accrued expenses	¥ 0	¥ —	\$ 0

## 7. Research and Development Expenses

Research and development expenses included in selling, general and administrative expenses for FY2016 and FY2015 were as follows:

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2016	FY2015	FY2016
	¥ 16,078	¥ 15,778	\$ 143,298

## 8. Impairment Losses

The Company recognized impairment losses on the following asset group for FY2015.

(Millions of Yen)			
Location	Use	Type	Amount
Germany	Three-dimensional packaging material market	Goodwill and Patent	¥ 3,941

In general, the Companies define division as the basis of grouping. In the case of consolidated subsidiaries, the Company is also defined as the basis of grouping in terms of its scale. In regards to intangible assets, we deem each asset to be one group. The book value of goodwill and patent of Thin Materials GmbH (consolidate subsidiary for FY2015) is reduced to a recoverable amount, and is recognized as an impairment loss on an extraordinary loss. The Companies measure the recoverable amount of this asset group by value in use. It is calculated by discounting the future cash flow at 11%.

## 9. Comprehensive Income

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2016	FY2015	FY2016
<b>Valuation difference on available-for-sale securities:</b>			
Gains (losses) arising during the year	¥ (582)	¥ 2,426	\$ (5,187)
Reclassification adjustment	(47)	(3,048)	(419)
Amount before tax effect	(629)	(621)	(5,606)
Tax effect	192	461	1,711
Valuation difference on available-for-sale securities, net of tax	(436)	(159)	(3,886)

### Foreign currency translation adjustment

Gains (losses) arising during the year	188	(758)	1,676
Reclassification adjustment	—	—	—
Amount before tax effect	188	(758)	1,676
Tax effect	—	(42)	—
Foreign currency translation adjustment, net of tax	188	(800)	1,676

### Remeasurements of defined benefit plans:

Gains (losses) arising during the year	(144)	2	(1,283)
Reclassification adjustment	(107)	(148)	(954)
Amount before tax effect	(252)	(146)	(2,246)
Tax effect	77	61	686
Remeasurements of defined benefit plans, net of tax	(174)	(84)	(1,551)

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

Gains (losses) arising during the year	1	(1)	9
Total other comprehensive income	¥ (420)	¥ (1,047)	\$ (3,743)

## 10. Common Shares

### (1) Dividends

Cash dividends charged to retained earnings for the years ended March 31, 2017 and 2016 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 28 yen per share with an aggregate 4,249 million yen for the year ended March 31, 2017.

### (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.

## 11. Investment Securities

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2016	FY2015	FY2016
Equity securities	¥ 24,031	¥ 24,559	\$ 214,180
Unlisted securities of affiliates	6,636	7,244	59,144
Unlisted securities	1,797	1,447	16,016
	¥ 32,465	¥ 33,251	\$ 289,349

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

Short-term debt consisting of an unsecured bank overdraft as of March 31, 2017 was 23,155 million yen.

The weighted average interest rate on short-term debt outstanding as of March 31, 2017 was 0.5%.

The weighted average interest rate on long-term debt outstanding as of March 31, 2017 was 0.85%.

The weighted average interest rate on the current portion of long-term debt outstanding as of March 31, 2017 was 0.92%.

Long-term debt as of FY2016 and FY2015 were as follows:

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2016	FY2015	FY2016
Long-term debt	¥ 7,650	¥ 10,160	\$ 68,182
Less current portion	(3,070)	(3,060)	(27,362)
	¥ 4,580	¥ 7,100	\$ 40,820

Long-term debt payments due after FY2016 were as follows:

Year ending March 31	(Millions of Yen)	(Thousands of U.S. dollars)
FY2017	¥ 2,470	\$ 22,014
FY2018	1,670	14,884
FY2019	330	2,941
FY2020 and thereafter	110	980
	¥ 4,580	\$ 40,820

## 13. Retirement Benefits

(1) The liability for retirement benefits as of FY2016 and FY2015 were as follows:

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2016	FY2015	FY2016
Retirement benefit obligation	¥ 12,031	¥ 11,998	\$ 107,228
Plan asset	(14,018)	(14,055)	(124,938)
	(1,987)	(2,056)	(17,709)
Unfunded retirement benefit obligation	101	72	900
Net retirement benefit obligation	(1,885)	(1,983)	(16,800)
Net defined benefit liability	101	102	900
Net defined benefit asset	(1,987)	(2,086)	(17,709)
Net retirement benefit obligation	¥ (1,885)	¥ (1,983)	\$ (16,800)

(2) Actuarial assumptions

The principal actuarial assumptions as of FY2016 and FY2015 were as follows:

	FY2016	FY2015
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.

## 14. Income Taxes

The Company is subject to a number of taxes based on income. The statutory income tax rates were approximately 30.86% for the year ended March 31, 2017 and 33.06% for the year ended March 31, 2016.

The tax effects of significant temporary differences which resulted in deferred tax assets and liabilities as of FY2016 and FY2015 were as follows:

	(Millions of Yen)		(Thousands of U.S. dollars)
	FY2016	FY2015	FY2016
Deferred tax assets:			
The tax effect of investment on subsidiary to be liquidated	¥ 1,124	¥ 1,124	\$ 10,018
Inventory	746	754	6,649
Provision for bonus	589	575	5,250
Unrealized profit of non-current assets	458	394	4,082
Loss on valuation of securities	400	356	3,565
Other	2,337	2,554	20,829
Gross deferred tax assets	5,656	5,759	50,410
Less: Valuation allowance	(49)	(41)	(437)
Total deferred tax assets	5,606	5,717	49,964
Deferred tax liabilities:			
Unrealized gain on securities	(4,477)	(4,751)	(39,902)
Net defined benefit asset	(596)	(631)	(5,312)
Reserve for advanced depreciation of non-current assets	(276)	(285)	(2,460)
Other	(72)	(76)	(642)
Total deferred tax liabilities	(5,422)	(5,745)	(48,324)
Net deferred tax assets	¥ 184	¥ (27)	\$ 1,640

The differences between the statutory tax rate and the effective tax rate for the years ended FY2016 and FY2015 were as follows:

	FY2016	FY2015
Statutory tax rate	30.86%	33.06%
(Reconciliation)		
Elimination of intercompany dividend income	2.69%	2.45%
Entertainment and other permanently non-deductible expense	0.46	0.59
Difference of tax rate for foreign consolidated subsidiaries	(0.65)	(0.60)
Equity in earnings of affiliates	(0.68)	(1.00)
Dividend and other items excluded permanently from taxable income	(2.80)	(2.55)
Tax credit	(6.20)	(7.74)
Other, net	0.04	(3.74)
Effective tax rate	23.72%	20.47%

## 15. 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 manufacturing 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

FY2015	Millions of Yen						Adjustment (Note)	Consolidated Total
	Chemicals	Performance Materials	Agricultural Chemicals	Pharmaceuticals	Trading	Others		
Net sales								
Sales to outside customers	¥ 25,159	¥ 45,840	¥ 43,695	¥ 8,668	¥ 43,014	¥ 10,516	¥ —	¥ 176,894
Intersegment sales	9,187	5,932	3,792	—	12,630	10,362	(41,905)	—
Total sales	34,347	51,773	47,487	8,668	55,644	20,879	(41,905)	176,894
Segment income (loss)	3,927	12,021	10,831	2,006	1,813	475	(2,469)	28,606
Segment assets	26,643	40,972	52,917	11,144	19,672	10,147	66,671	228,169
Other items								
Depreciation and amortization	1,427	5,124	1,411	818	57	386	403	9,629
Amortization of goodwill	—	51	—	—	2	—	—	54
Increase of property, plant and equipment, and intangible assets	¥ 2,264	¥ 5,405	¥ 1,298	¥ 438	¥ 15	¥ 441	¥ 381	¥ 10,245

Notes: The adjustments are as follows:

- (1) The (2,469) million yen adjustment in segment income includes (361) million yen in intersegment eliminations, and (2,107) 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 66,671 million yen adjustment in segment assets includes (11,172) million yen in intersegment eliminations and 77,843 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 403 million yen adjustment in depreciation and amortization is corporate expenses.
- (4) The 381 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.

FY2016	Millions of Yen							Consolidated Total
	Chemicals	Performance Materials	Agricultural Chemicals	Pharmaceuticals	Trading	Others	Adjustment (Note)	
Net sales								
Sales to outside customers	¥ 25,723	¥ 46,403	¥ 47,791	¥ 7,966	¥ 42,281	¥ 10,108	¥ 14	¥ 180,289
Intersegment sales	9,057	6,406	4,160	26	12,916	13,921	(46,489)	—
Total sales	34,780	52,809	51,952	7,992	55,198	24,029	(46,474)	180,289
Segment income (loss)	3,820	12,533	13,201	1,656	1,697	966	(2,437)	31,438
Segment assets	26,113	48,028	55,588	10,182	19,782	10,731	61,322	231,748
Other items								
Depreciation and amortization	1,613	4,763	1,336	705	59	330	79	8,887
Amortization of goodwill	—	—	—	—	2	—	—	2
Increase of property, plant and equipment, and intangible assets	¥ 2,000	¥ 8,404	¥ 2,416	¥ 903	¥ 46	¥ 299	¥ 229	¥ 14,299

Notes: The adjustments are as follows:

- (1) The (2,437) million yen adjustment in segment income includes (285) million yen in intersegment eliminations, 14 million yen sales not attributable to any reporting segment, and (2,165) 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 61,322 million yen adjustment in segment assets includes (9,338) million yen in intersegment eliminations and 70,660 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 79 million yen adjustment in depreciation and amortization is corporate expenses.
- (4) The 229 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.

FY2016	Thousands of U.S. Dollars							Consolidated Total
	Chemicals	Performance Materials	Agricultural Chemicals	Pharmaceuticals	Trading	Others	Adjustment (Note)	
Net sales								
Sales to outside customers	\$ 229,260	\$ 413,574	\$ 425,945	\$ 70,998	\$ 376,836	\$ 90,089	\$ 125	\$ 1,606,854
Intersegment sales	80,722	57,094	37,077	232	115,116	124,073	(414,340)	—
Total sales	309,982	470,668	463,030	71,230	491,961	214,162	(414,207)	1,606,854
Segment income (loss)	34,046	111,702	117,656	14,759	15,125	8,610	(21,720)	280,196
Segment assets	232,736	428,057	495,437	90,749	176,310	95,642	546,542	2,065,490
Other items								
Depreciation and amortization	14,376	42,451	11,907	6,283	526	2,941	704	79,207
Amortization of goodwill	—	—	—	—	18	—	—	18
Increase of property, plant and equipment, and intangible assets	\$ 17,825	\$ 74,902	\$ 21,533	\$ 8,048	\$ 410	\$ 2,665	\$ 2,041	\$ 127,442

Overseas operations, which represent sales to customers outside Japan for FY2016 and FY2015 were as follows:

FY2015	Millions of Yen				
	Japan	Korea	Other Asia	Europe and the United States	Consolidated Total
Net sales	¥ 104,032	¥ 18,401	¥ 34,398	¥ 20,062	¥ 176,894
FY2016	Millions of Yen				
	Japan	Korea	Other Asia	Europe and the United States	Consolidated Total
Net sales	¥ 103,077	¥ 15,513	¥ 39,286	¥ 22,412	¥ 180,289
FY2016	Thousands of U.S. dollars				
	Japan	Korea	Other Asia	Europe and the United States	Consolidated Total
Net sales	\$ 918,690	\$ 138,262	\$ 350,143	\$ 199,750	\$ 1,606,854

## 16. 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 FY2016 and FY2015 were as follows:

	(Yen)		(U.S. dollars)
	FY2016	FY2015	FY2016
Net income	¥ 156.97	¥ 143.37	\$ 1.40
Cash dividends	¥ 52.00	¥ 44.00	\$ 0.46



# Independent Auditor's Report

## Yaesu Audit Company

5-17, Yaesu 1-chome, Chuo-ku, Tokyo 103-0028, Japan  
Phone: +(81)-3-3242-1351 Fax: +(81)-3-3242-1353

### Independent Auditor's Report

To the Board of Directors of  
Nissan Chemical Industries, Ltd.

We have audited the accompanying consolidated financial statements of Nissan Chemical Industries, Ltd. and consolidated subsidiaries, which comprise the consolidated balance sheets as of March 31, 2017, 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 Industries, Ltd. and its consolidated subsidiaries as of March 31, 2017, 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, 2017 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 Company  
Tokyo, Japan  
June 28, 2017



# Our Network

## ● Domestic Production 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 Goi Works

This plant is located in the industrial area in Sodegaura City, Chiba. It is our base for the production of performance materials.



## List of Offices, Plants and Laboratories

### Offices

#### Head Office

7-1, Kanda Nishiki-cho 3-chome, Chiyoda-ku, Tokyo 101-0054  
Tel: 03-3296-8111

#### Sendai Office

Greenwood Sendai Ichibancho Building 2-7-12, Ichibancho, Aoba-ku, Sendai 980-0811  
Tel: 022-266-4311

#### Osaka Office

Osaka Daiichi Seimei Building 1-8-17, Umeda, Kita-ku, Osaka 530-0001  
Tel: 06-6346-7200

#### Sapporo Office

Maruito Sapporo Building 1-1, Kita-Nijyo-Nishi, Chuo-ku, Sapporo 060-0002  
Tel: 011-251-0261

#### Nagoya Office

Nagoya KS Building 3-1-18, Taiko, Nakamura-ku, Nagoya 453-0801  
Tel: 052-452-8623

#### Fukuoka Office

JPR Hakata Building 1-4-4, Hakata Ekimae, Hakata-ku, Fukuoka 812-0011  
Tel: 092-432-3421

### Plants

#### Sodegaura Plant

11-1, Kitasode, Sodegaura, Chiba 299-0266  
Tel: 0438-63-2341

#### Saitama Plant

235-1, Aza Nishidai, Oaza Jimbohara-machi, Kamisato-machi, Saitama 369-0305  
Tel: 0495-34-2810

#### Nagoya Plant

7, Tsukiji-cho, Minato-ku, Nagoya 455-0045  
Tel: 052-661-1676

#### Sodegaura Plant Goi Works

12-17, Goiminamikaigan, Ichihara, Chiba 290-0045  
Tel: 0436-22-2110

#### Toyama Plant

635 Sasakura, Fuchu-machi, Toyama 939-2753  
Tel: 076-433-9602

#### Onoda Plant

6903-1, Oaza Onoda, Sanyo-Onoda, Yamaguchi 756-0093  
Tel: 0836-83-2800

### Laboratories

#### Chemical Research Laboratories

10-1, Tsuboi-Nishi 2-chome, Funabashi, Chiba 274-8507  
Tel: 047-465-1112

#### Biological Research Laboratories

1470, Shiraoka, Shiraoka, Saitama 349-0294  
Tel: 0480-92-2513

#### Materials Research Laboratories

488-6, Suzumi-cho, Funabashi, Chiba 274-0052  
Tel: 047-774-0200

11-1, Kitasode, Sodegaura, Chiba 299-0266  
Tel: 0438-64-2881

635, Sasakura, Fuchu-machi, Toyama 939-2753  
Tel: 076-465-7133

## Nissan Chemical Group

### Japan

#### Nissei Corporation

1-10-5, Nihonbashihon-cho, Chuo-ku, Tokyo 103-0023  
Tel: 03-3241-2548

- 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: 03-3256-4031

- Landscaping and civil engineering

#### Environmental Technical Laboratories, Ltd.

2-11-7, Kohoku, Adachi-ku, Tokyo 123-0872  
Tel: 03-3898-6643

- Environmental analysis

#### Sun Agro Co., Ltd.

1-10-5, Nihonbashihon-cho, Chuo-ku, Tokyo 103-0023  
Tel: 03-3510-3601

- Fertilizers and agrochemicals

#### Nissan Butsuryu Co., Ltd.

1-10-5, Nihonbashihon-cho, Chuo-ku, Tokyo 103-0023  
Tel: 03-5255-6901

- Transportation

#### Nissan Engineering, Ltd.

1-28-6, Kameido, Koto-ku, Tokyo 136-0071  
Tel: 03-3636-7578

- Plant engineering services

#### Nihon Hiryo Co., Ltd.

1-10-5, Nihonbashihon-cho, Chuo-ku, Tokyo 103-0023  
Tel: 03-3241-4231

- Fertilizers and agrochemicals

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

2-28-8, Honkomagome, Bunkyo-ku, Tokyo 113-0021  
Tel: 03-5977-7300

- Catalysts for petrochemical and petroleum products

Our Network

Overseas Bases (As of March 31, 2017)



**Nissan Chemical Europe S.A.R.L**

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

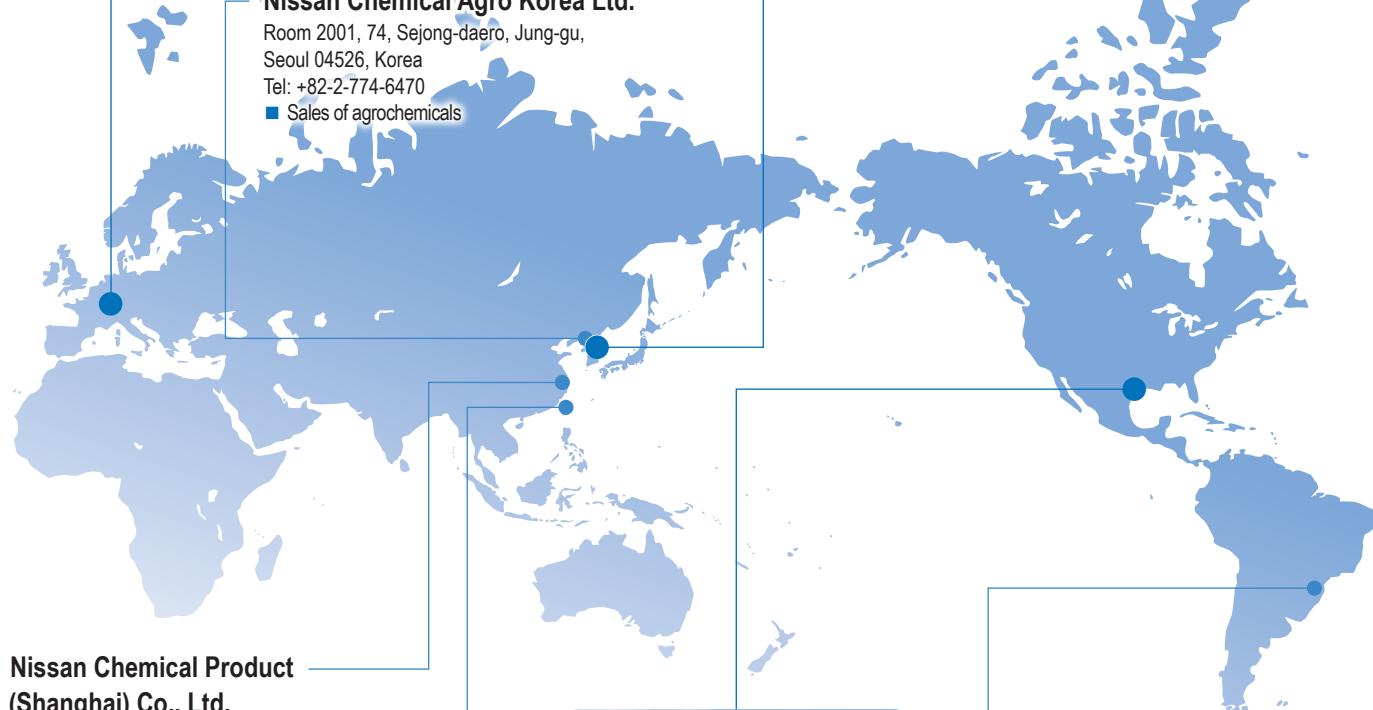


**NCK Co., Ltd.**

127, Chupalsandan-ro, Paengseong-eup, Pyeongtaek-si,  
Gyeonggi-do, 17998, Korea  
Tel: +82-31-691-7044  
■ R&D, production and sales of  
electronic materials

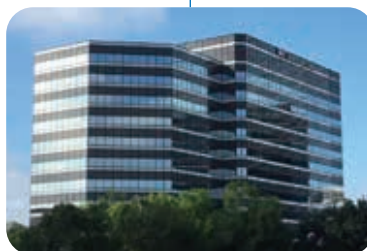
**Nissan Chemical Agro Korea Ltd.**

Room 2001, 74, Sejong-daero, Jung-gu,  
Seoul 04526, Korea  
Tel: +82-2-774-6470  
■ Sales of agrochemicals



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

Room 1110, New Town Center,  
83 Lou Shan Guan Road, Shanghai, China  
Tel: +86-21-6236-8300  
■ Sales support and promotional services for agrochemicals  
Sales support for performance materials



**Nissan Chemical America Corporation**

10333 Richmond Avenue, Suite 1100, Houston,  
Texas 77042, U.S.A.  
Tel: +1-713-532-4745  
■ R&D, production and sales of inorganic materials

**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

**Nissan Chemical Taiwan Co., Ltd.**

5F, 67 Luke 2nd Road, Luzhu District,  
Kaohsiung, Taiwan  
Tel: +886-7-695-5252  
■ R&D and sales support for electronic materials

# Corporate History

## History of Nissan Chemical Industries, Ltd.

We were founded in 1887 as Tokyo Jinzo Hiryo, Japan's first manufacturer of chemical fertilizers, by visionaries of the Meiji Period, namely Jokichi Takamine, Eiichi Shibusawa, Takashi Masuda, and others.

We later merged with Kanto Sanso, Nippon Kagaku Hiryo, and other companies, and eventually changed the company name to Dainippon Jinzo Hiryo. In 1937, we made a comprehensive transfer of our assets, etc., to Nippon Kagaku Kogyo, which was affiliated with Nippon Sangyo Corporation, and then changed the company name to Nissan Chemical Industries, Ltd., the name by which we are known today (hereafter, the "Company").

### History

<b>February 1887</b>	Tokyo Jinzo Hiryo is established.
<b>July 1889</b>	Nippon Seimi Seizo (later renamed Nippon Kagaku Hiryo) is established.
<b>March 1891</b>	The Onoda Plant of Nippon Seimi Seizo (now the Onoda Plant of the Company) is completed.
<b>December 1895</b>	Oji Seizoshō (later renamed Kanto Sanso) is established.
<b>November 1897</b>	The Oji Plant of Kanto Sanso (which later becomes the Oji Plant of the Company) is completed.
<b>December 1907</b>	The Komatsugawa Plant of Tokyo Jinzo Hiryo (which later becomes Tokyo Nissan Kagaku) is completed.
<b>July 1910</b>	Tokyo Jinzo Hiryo is renamed Dainippon Jinzo Hiryo.
<b>February 1919</b>	The Nagoya Plant (now the Nagoya Plant of the Company) of Nippon Jinzo Hiryo (later merged with Nippon Kagaku Hiryo) is completed.
<b>June 1922</b>	Taisho Unsou (now Nissan Butsuryu Co., Ltd.) is established.
<b>May 1923</b>	Dainippon Jinzo Hiryo merges with Kanto Sanso and Nippon Kagaku Hiryo. The Research Section of the Engineering Department is established at the head office and the Research Group is established at the Oji Plant. They serve as the research and development departments.
<b>April 1928</b>	The Toyama Plant of Dainippon Jinzo Hiryo (now the Toyama Plant of the Company) is completed.
<b>February 1931</b>	The fertilizer testing station of Dainippon Jinzo Hiryo (Koyasu, Yokohama City) is relocated to Shiraoka (now the Biological Research Laboratories of the Company).
<b>October 1932</b>	Bunka Nohosha (now Nissei Corporation) is established.
<b>December 1937</b>	Dainippon Jinzo Hiryo transfers assets, etc. to Nippon Kagaku Kogyo and then the latter is renamed Nissan Chemical Industries, Ltd.
<b>April 1943</b>	Nissan Chemical Industries, Ltd. is acquired by Nippon Mining Co., Ltd. and becomes its chemical section.
<b>April 1945</b>	Nippon Oil & Fats Co., Ltd. takes over the chemical section of Nippon Mining Co., Ltd. in a transfer of business and changes its name to Nissan Chemical Industries, Ltd.
<b>May 1949</b>	The Company is listed on the Japanese stock exchange after it resumes operation.
<b>July 1949</b>	The Company spins off its oil and fats section (now NOF Corporation) in accordance with the Enterprise Reorganization Act.
<b>January 1965</b>	The Company establishes Nissan Petrochemicals Ltd., thereby entering the petrochemical business.
<b>November 1968</b>	Tokyo Nissan Kagaku relocates its plant to Kamisato-mura, Saitama (now the Saitama Plant of the Company).
<b>August 1969</b>	The Company constructs the Sodegaura Plant following the formulation of a plan to close and relocate the Oji Plant.
<b>December 1969</b>	Production at the Oji Plant is discontinued and the plant is closed.
<b>June 1988</b>	The Company transfers its petrochemical section to Kyowa Hakko Kogyo Co., Ltd. (now KH Neochem Co., Ltd.) and withdraws from the petrochemical business.
<b>October 1989</b>	The Company establishes Nissan Chemical America Corporation (NCA) in the United States.
<b>July 1996</b>	The Company establishes Nissan Chemical Houston Corporation (NCH) in the United States.
<b>April 1998</b>	The Company acquires Tokyo Nissan Kagaku as its Saitama Plant.
<b>April 2001</b>	The Company establishes Nissan Chemical Korea Co., Ltd. (now, NCK Co., Ltd.) in South Korea.
<b>June 2001</b>	The Company reorganizes its R&D facilities and sets up the Chemical Research Laboratories, Electronic Materials Research Laboratories, and Specialty Materials Research Laboratories.
<b>October 2001</b>	The Company establishes Nissan-Agri Co., Ltd. (now Sun Agro Co., Ltd.), thereby spinning off its fertilizer business and integrating group companies related to the business.
<b>July 2002</b>	The Company acquires the domestic herbicide business from Monsanto Japan Limited.
<b>December 2002</b>	The Company establishes Nissan Chemical Europe S.A.R.L. (NCE) in France.
<b>February 2005</b>	The Company establishes Nissan Chemical Agro Korea Ltd. (NAK) in South Korea.
<b>January 2010</b>	The Company acquires a fungicide from Dow AgroSciences LLC of the United States.
<b>October 2010</b>	The Company establishes Nissan Chemical Taiwan Co., Ltd. (NCT) in Taiwan.
<b>June 2013</b>	The Company acquires Thin Materials GmbH (Germany).
<b>October 2013</b>	The Company merges NCH into NCA.
<b>January 2014</b>	The Company establishes Nissan Chemical Product (Shanghai) Co., Ltd. (NCS) in China.
<b>October 2014</b>	The Company reorganizes the Electronic Materials Research Laboratories and Inorganic Materials Research Laboratories into the Materials Research Laboratories.
<b>June 2016</b>	The Company establishes Nissan Chemical Do Brasil (NCB) in Brazil.



# Corporate Profile

(As of March 31, 2017)

<b>Corporate Name</b>	Nissan Chemical Industries, Ltd.
<b>Head Office</b>	7-1, Kanda Nishiki-cho 3-chome, Chiyoda-ku, Tokyo 101-0054, Japan TEL: 03-3296-8111
<b>Founded</b>	1887
<b>Capital Stock</b>	18,942 million yen
<b>Number of Employees</b>	Consolidated: 2,402
<b>Stock Listing</b>	Tokyo Stock Exchange
<b>Transfer Agent</b>	Sumitomo Mitsui Trust Bank, Limited 4-1, Marunouchi 1-chome, Chiyoda-ku, Tokyo 100-8233, Japan

## Directors / Corporate Auditors / Executive Officers

(As of June 28, 2017)

<b>Representative Director, President &amp; CEO</b>	Kojiro Kinoshita
<b>Director, Senior Executive Vice President</b>	Junichi Miyazaki
<b>Director, Senior Managing Executive Officer</b>	Hiroyoshi Fukuro
<b>Director, Managing Executive Officer</b>	Masataka Hatanaka
	Katsuaki Miyaji
	Hidenori Takishita
	Takashi Honda
<b>Outside Director</b>	Tisato Kajiyama
	Tadashi Ohe
<b>Corporate Auditors</b>	Yasuyuki Nakajima
	Norihiro Suzuki
	Shuichi Takemoto
	Noriyuki Katayama
<b>Managing Executive Officer</b>	Takeshi Iwata
<b>Executive Officers</b>	Satoru Hamamoto
	Nobutomo Tsuruzoe
	Hiroshi Onitsuka
	Hitoshi Suzuki
	Yuji Nishida
	Hironori Yoshida
	Shinsuke Yagi
	Motoaki Ishikawa
	Kazuhiko Ohrai
	Toshiro Miyake
	Hajime Yoshida

# Share Information

(As of March 31, 2017)

Total Number of Authorized Shares	360,000,000
Shares of Common Share Issued	154,000,000
Shareholders	11,976

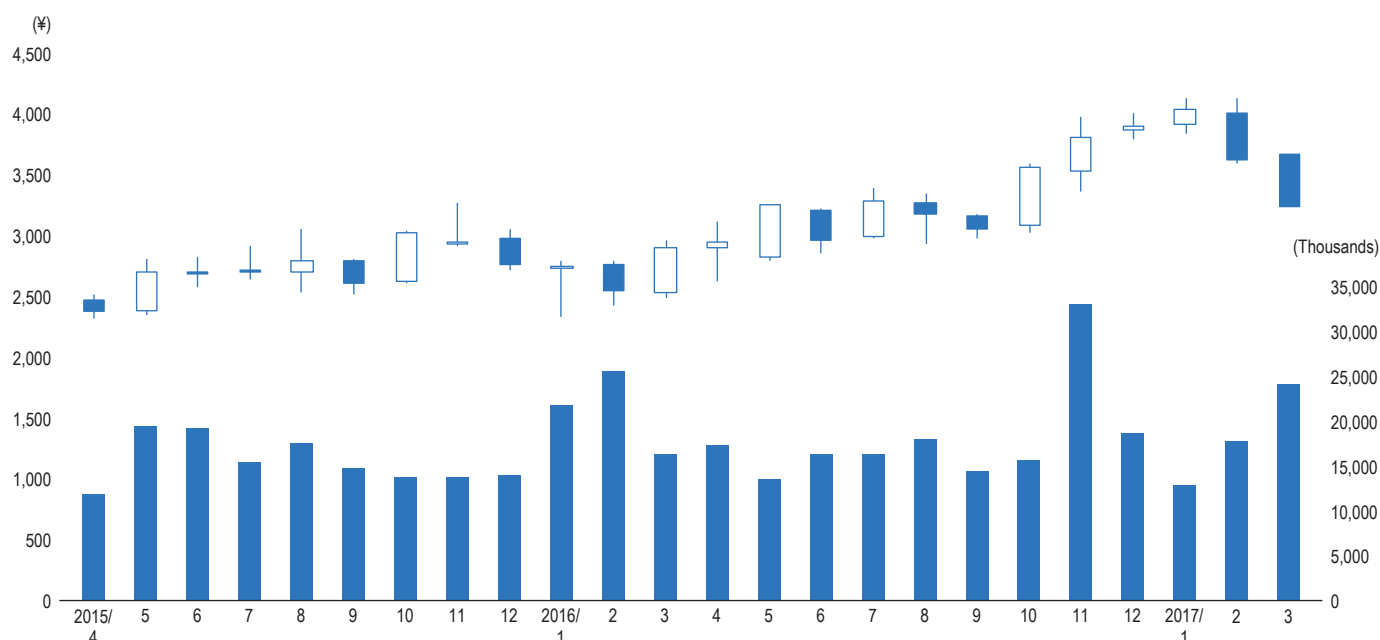
Major shareholders (Top ten companies)	Number of shares held (1,000 shares)	Investment (%)
The Master Trust Bank of Japan, Ltd. (Trust Account)	18,061	11.9
Japan Trustee Services Bank, Ltd. (Trust Account)	12,871	8.5
Trust & Custody Services Bank, Ltd. as trustee for the Mizuho Trust & Banking Co., Ltd. Retirement Benefit Trust	7,633	5.0
The Norinchukin Bank	4,800	3.2
Nissan Chemical Industries, Ltd. Customer Shareholders Association	3,968	2.6
Trust & Custody Services Bank, Ltd. (Securities Investment Trust Account)	3,217	2.1
Sompo Japan Nipponkoa Insurance Inc.	2,380	1.6
Ono Pharmaceutical Co., Ltd.	2,376	1.6
Nissan Chemical Industries, Ltd. Employee Shareholders Association	2,205	1.5
Japan Trustee Services Bank, Ltd. (Trust Account 5)	2,108	1.4

(Notes) 1. Although the company holds 2,242,017 treasury shares, it is not included in the above list of major shareholders.  
2. Investment percentages are calculated excluding treasury shares.

	Financial institutions	Securities companies	Other domestic companies	Overseas investors	Individuals/Others	Treasury shares
Percentage of share held (%)	47.3	4.1	11.4	24.1	11.6	1.5

\* The company retired 2,000,000 of its 2,242,017 treasury shares on May 9, 2017.

## Share Price and Trading volume (April 2015 – March 2017)



# Comparison with GRI G4 Sustainability Reporting Guidelines

General Standard Disclosures		Page with Information
<b>Strategy and Analysis</b>		
G4-1	A statement from the most senior decision-maker of the organization about the relevance of sustainability to the organization and the organization's strategy for addressing sustainability	P3-6 Interview with the President
G4-2	A description of key impacts, risks, and opportunities	—
<b>Organizational Profile</b>		
G4-3	Name of the organization	P85 Corporate Profile
G4-4	Primary brands, products, and services	P19-22 Main Products P23-34 Business Overview
G4-5	Location of the organization's headquarters	P85 Corporate Profile
G4-6	Number of countries where the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report	P17-18 Non-Financial Highlights P81-83 Our Network
G4-7	Nature of ownership and legal form	P85 Corporate Profile
G4-8	Markets served	P15-16 Financial Highlights P23-34 Business Overview Annual securities report
G4-9	Scale of the organization	P15-16 Financial Highlights P17-18 Non-Financial Highlights P81-83 Our Network Annual securities report
G4-10	Breakdown of employment	P17-18 Non-Financial Highlights Annual securities report
G4-11	Percentage of total employees covered by collective bargaining agreements	P61-64 Relationships with Employees
G4-12	The organization's supply chain	—
G4-13	Significant changes regarding the organization's size, structure, ownership, or its supply chain	P11-14 "Progress2030" and "Vista2021" P84 Corporate History
<b>Commitments to External Initiatives</b>		
G4-14	Whether and how the precautionary approach or principle is addressed by the organization	P41-56 Responsible Care (RC) Activities
G4-15	Externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses	P9-10 SDGs and Nissan Chemical Initiatives P41-44 Responsible Care Management
G4-16	Memberships of associations and national or international advocacy organizations	P41-44 Responsible Care Management P55-56 Chemicals and Product Safety
<b>Identified Material Aspects and Boundaries</b>		
G4-17	<ul style="list-style-type: none"> <li>Entities included in the organization's consolidated financial statements or equivalent documents</li> <li>Whether any entity included in the organization's consolidated financial statements or equivalent documents is not covered by the report</li> </ul>	P2 Editorial Policy Annual securities report
G4-18	<ul style="list-style-type: none"> <li>Process for defining the report content and the Aspect Boundaries</li> <li>How the organization has implemented the Reporting Principles for Defining Report Content</li> </ul>	—
G4-19	List of all the material Aspects identified in the process for defining report content	P41-44 Responsible Care Management
G4-20	Aspect Boundary within the organization for each material Aspect	—
G4-21	Aspect Boundary outside the organization for each material Aspect	—
G4-22	Effect of any restatements of information provided in previous reports, and the reasons for such restatements	—
G4-23	Significant changes from previous reporting periods in the Scope and Aspect Boundaries	—
<b>Stakeholder Engagement</b>		
G4-24	A list of stakeholder groups engaged by the organization	P57-64 Communication with Society
G4-25	Basis for identification and selection of stakeholders with whom to engage	P57-64 Communication with Society
G4-26	The organization's approach to stakeholder engagement	P57-64 Communication with Society
G4-27	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns	P51-52 Biodiversity Conservation
<b>Report Profile</b>		
G4-28	Reporting period for information provided	P2 Editorial Policy
G4-29	Date of most recent previous report	P2 Editorial Policy
G4-30	Reporting cycle	P2 Editorial Policy
G4-31	Contact point for questions regarding the report or its contents	P2 Editorial Policy
<b>GRI Content Index</b>		
G4-32	<ul style="list-style-type: none"> <li>'In accordance' option the organization has chosen</li> <li>GRI Content Index for the chosen option</li> <li>Reference to the External Assurance Report, if the report has been externally assured</li> </ul>	Referred to GRI G4 (Core). P87-90 Comparison with GRI G4 Sustainability Reporting Guidelines No External Assurance
<b>Assurance</b>		
G4-33	<ul style="list-style-type: none"> <li>The organization's policy and current practice with regard to seeking external assurance for the report</li> <li>Scope and basis of any external assurance provided</li> <li>Relationship between the organization and the assurance providers</li> <li>Whether the highest governance body or senior executives are involved in seeking assurance for the organization's sustainability report</li> </ul>	—
<b>Governance</b>		
<b>Governance structure and its composition</b>		
G4-34	Governance structure of the organization and committees responsible for decision-making on economic, environmental and social impacts	P35 Promotion of CSR P36-37 Corporate Governance
G4-35	Process for delegating authority for economic, environmental and social topics from the highest governance body to senior executives and other employees	Corporate governance report
G4-36	Whether the organization has appointed an executive-level position or positions with responsibility for economic, environmental and social topics, and whether post holders report directly to the highest governance body	P35 Promotion of CSR P36-37 Corporate Governance
G4-37	Processes for consultation between stakeholders and the highest governance body on economic, environmental and social topics, and if consultation is delegated, to whom and any feedback processes to the highest governance body	P59 Relationships with Investors Corporate governance report
G4-38	Composition of the highest governance body and its committees	P35 Promotion of CSR P36-37 Corporate Governance Corporate governance report

G4-39	Whether the Chair of the highest governance body is also an executive officer	Corporate governance report
G4-40	Nomination and selection processes for the highest governance body and its committees, and the criteria used for nominating and selecting the highest governance body members	P36-37 Corporate Governance Corporate governance report
G4-41	Processes for the highest governance body to ensure conflicts of interest are avoided and managed	Corporate governance report
Highest Governance Body's Role in Setting Purpose, Values, and Strategy		
G4-42	Highest governance body's and senior executives' roles in the development, approval, and updating of the organization's purpose, value or mission statements, strategies, policies, and goals related to economic, environmental and social impacts	P36-37 Corporate Governance Corporate governance report
Highest Governance Body's Competencies and Performance Evaluation		
G4-43	Measures taken to develop and enhance the highest governance body's collective knowledge of economic, environmental and social topics	Corporate governance report
G4-44	Processes for evaluation of the highest governance body's performance with respect to the governance of economic, environmental and social topics and actions taken in response to the evaluation	P36-37 Corporate Governance Corporate governance report
Highest Governance Body's Role in Risk Management		
G4-45	<ul style="list-style-type: none"> <li>Highest governance body's role in the identification and management of economic, environmental and social impacts, risks, and opportunities</li> <li>Whether stakeholder consultation is used to support the highest governance body's identification and management of economic, environmental and social impacts, risks, and opportunities</li> </ul>	P36-37 Corporate Governance P38 Compliance P39 Risk Management P41-44 Responsible Care Management Corporate governance report
G4-46	Highest governance body's role in reviewing the effectiveness of the organization's risk management processes for economic, environmental and social topics	P36-37 Corporate Governance Corporate governance report
G4-47	Frequency of the highest governance body's review of economic, environmental and social impacts, risks, and opportunities	P36-37 Corporate Governance
Highest Governance Body's Role in Sustainability Reporting		
G4-48	Highest committee or position that formally reviews and approves the organization's sustainability report and ensures that all material Aspects are covered	—
Highest Governance Body's Role in Evaluating Economic, Environmental and Social Performance		
G4-49	Process for communicating critical concerns to the highest governance body	P38 Compliance P39 Risk Management Corporate governance report
G4-50	Nature and total number of critical concerns that were communicated to the highest governance body and the mechanism(s) used to address and resolve them	P38 Compliance P39 Risk Management
Remuneration and Incentives		
G4-51	Remuneration policies for the highest governance body and senior executives and how performance criteria in the remuneration policy relate to the highest governance body's and senior executives' economic, environmental and social objectives	P36-37 Corporate Governance
G4-52	Process for determining remuneration	P36-37 Corporate Governance
G4-53	How stakeholders' views are sought and taken into account regarding remuneration	P36-37 Corporate Governance
G4-54	Ratio of the annual total compensation for the organization's highest-paid individual to the median annual total compensation for all employees	—
G4-55	Ratio of percentage increase in annual total compensation for the organization's highest-paid individual to the median percentage increase in annual total compensation for all employees	—
Ethics and Integrity		
G4-56	The organization's values, principles, standards and norms of behavior	P3-6 Interview with the President P35 Promotion of CSR P38 Compliance
G4-57	Internal and external mechanisms for seeking advice on ethical and lawful behavior, and matters related to organizational integrity	P36-37 Corporate Governance Corporate governance report
G4-58	Internal and external mechanisms for reporting concerns about unethical or unlawful behavior, and matters related to organizational integrity	P38 Compliance
Specific Standard Disclosures		
DMA	Why the Aspect is material, impacts that make this Aspect material, how the organization manages the material Aspect or its impacts, and evaluation of the management approach	P41-56 Responsible Care (RC) Activities
Economic		
Economic Performance		
EC1	Direct Economic Value Generated and Distributed	Annual securities report
EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	—
EC3	Coverage of the organization's defined benefit plan obligations	Annual securities report
EC4	Financial assistance received from the government	—
Market Presence		
EC5	Ratios of standard entry level wage compared to local minimum wage at significant locations of operation	—
EC6	Proportion of senior management hired from the local community at significant locations of operation	—
Indirect Economic Impacts		
EC7	Development and impact of infrastructure investments and services supported	P51-52 Biodiversity Conservation P60 Relationships with Society
EC8	Significant indirect economic impacts	—
Procurement Practices		
EC9	Proportion of spending on local suppliers at significant locations of operation	—
Environmental		
Materials		
EN1	Materials used by weight or volume	—
EN2	Percentage of materials used that are recycled input materials	—
Energy		
EN3	Energy consumption within the organization	P45-50 Environment Safety and Climate Change Strategy
EN4	Energy consumption outside the organization	P45-50 Environment Safety and Climate Change Strategy
EN5	Energy intensity	P45-50 Environment Safety and Climate Change Strategy
EN6	Reduction of energy consumption	P45-50 Environment Safety and Climate Change Strategy
EN7	Reductions in energy requirements of products and services	—
Water		
EN8	Total water withdrawal by source	P45-50 Environment Safety and Climate Change Strategy
EN9	Water sources significantly affected by withdrawal of water	—

## Comparison with GRI G4 Sustainability Reporting Guidelines

EN10	Percentage and total volume of water recycled and reused	—
<b>Biodiversity</b>		
EN11	Operational sites owned, leased, managed in areas of high biodiversity value	P51-52 Biodiversity Conservation
EN12	Significant impacts of activities, products, and services on biodiversity in areas of high biodiversity value	—
EN13	Habitats protected or restored	P51-52 Biodiversity Conservation
EN14	Total number of IUCN red list species and national conservation list species with habitats in areas affected by operations	—
<b>Emissions</b>		
EN15	Direct greenhouse gas (GHG) emissions (Scope 1)	P45-50 Environment Safety and Climate Change Strategy
EN16	Energy indirect greenhouse gas (GHG) emissions (Scope 2)	CO <sub>2</sub> emissions from energy use, CO <sub>2</sub> emissions from non-energy use
EN17	Other indirect greenhouse gas (GHG) emissions (Scope 3)	P45-50 Environment Safety and Climate Change Strategy
EN18	Greenhouse gas (GHG) emissions intensity	P45-50 Environment Safety and Climate Change Strategy
EN19	Reduction of greenhouse gas (GHG) emissions	P45-50 Environment Safety and Climate Change Strategy
EN20	Emissions of ozone-depleting substances (ODS)	—
EN21	NO <sub>x</sub> , SO <sub>x</sub> , and other significant air emissions	P45-50 Environment Safety and Climate Change Strategy
<b>Effluents and Waste</b>		
EN22	Total water discharge by quality and destination	P45-50 Environment Safety and Climate Change Strategy
EN23	Total weight of waste by type and disposal method	P45-50 Environment Safety and Climate Change Strategy
EN24	Total number and volume of significant spills	Not applicable
EN25	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally	—
EN26	Water bodies and related habitats significantly affected by the organization's discharges of water and runoff	—
<b>Products and Services</b>		
EN27	Extent of impact mitigation of environmental impacts of products and services	P19-22 Main Products
EN28	Percentage of products sold and their packaging materials that are reclaimed	—
<b>Compliance</b>		
EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	Not applicable
<b>Transport</b>		
EN30	Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce	P45-50 Environment Safety and Climate Change Strategy
<b>Overall</b>		
EN31	Total environmental protection expenditures and investments	P45-50 Environment Safety and Climate Change Strategy
<b>Supplier Environmental Assessment</b>		
EN32	Percentage of new suppliers that were screened using environmental criteria	—
EN33	Significant negative environmental impacts in the supply chain and actions taken	—
<b>Environmental Grievance Mechanisms</b>		
EN34	Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms	Not applicable
<b>Social</b>		
<b>Labor Practices and Decent Work</b>		
<b>Employment</b>		
LA1	Total number and rates of new employee hires and employee turnover	P17-18 Non-Financial Highlights
LA2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	—
LA3	Return to work and retention rates after parental leave	P17-18 Non-Financial Highlights
<b>Labor/Management Relations</b>		
LA4	Minimum notice periods regarding operational changes	—
<b>Occupational Health and Safety</b>		
LA5	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs	P61-64 Relationships with Employees
LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities	P53-54 Safety and Disaster Prevention, Occupational Safety and Health
LA7	Workers with high incidence or high risk of diseases related to their occupation	—
LA8	Health and safety topics covered in formal agreements with trade unions	P61-64 Relationships with Employees
<b>Training and Education</b>		
LA9	Average hours of training per year per employee	P61-64 Relationships with Employees
LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	P61-64 Relationships with Employees
LA11	Percentage of employees receiving regular performance and career development reviews	P61-64 Relationships with Employees
<b>Diversity and Equal Opportunity</b>		
LA12	Composition of governance bodies and breakdown of employees per category	—
<b>Equal Remuneration for Women and Men</b>		
LA13	Ratio of basic salary and remuneration of women to men	Basic salary does not differ between women and men.
<b>Supplier Assessment for Labor Practices</b>		
LA14	Percentage of new suppliers that were screened using labor practices criteria	—
LA15	Significant negative impacts for labor practices in the supply chain and actions taken	—
<b>Labor Practices Grievance Mechanisms</b>		
LA16	Number of grievances about labor practices filed, addressed, and resolved through formal grievance mechanisms	—
<b>Human Rights</b>		
<b>Investment</b>		
HR1	Total number and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	—
HR2	Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations	—
<b>Non-discrimination</b>		
HR3	Total number of incidents of discrimination and corrective actions taken	Not applicable
<b>Freedom of Association and Collective Bargaining</b>		
HR4	Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights	Not applicable
<b>Child Labor</b>		
HR5	Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the abolition of child labor	Not applicable
<b>Forced or Compulsory Labor</b>		
HR6	Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor	Not applicable



Security Practices		
HR7	Percentage of security personnel trained in the organization's human rights policies or procedures that are relevant to operations	—
Indigenous Rights		
HR8	Total number of incidents of violations involving rights of indigenous peoples and actions taken	Not applicable
Assessment		
HR9	Total number and percentage of operations that have been subject to human rights reviews or impact assessments	—
Supplier Human Rights Assessment		
HR10	Percentage of new suppliers that were screened using human rights criteria	—
HR11	Significant negative human rights impacts in the supply chain and actions taken	—
Human Rights Grievance Mechanisms		
HR12	Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms	Not applicable
Society		
Local Communities		
SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	—
SO2	Operations with significant negative impacts on local communities	Not applicable
Anti-corruption		
SO3	Total number and percentage of operations assessed for risks related to corruption and the significant risks identified	—
SO4	Communication and training on anti-corruption policies and procedures	P38 Compliance
SO5	Confirmed incidents of corruption and actions taken	Not applicable
Public Policy		
SO6	Total value of political contributions	—
Anti-competitive Behavior		
SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	Not applicable
Compliance		
SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	Not applicable
Supplier Assessment for Impacts on Society		
SO9	Percentage of new suppliers that were screened using criteria for impacts on society	—
SO10	Significant negative impacts on society in the supply chain and actions taken	—
Grievance Mechanisms for Impacts on Society		
SO11	Number of grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms	Not applicable
Product Responsibility		
Customer Health and Safety		
PR1	Percentage of significant product and service categories for which health and safety impacts are assessed for improvement	P55-56 Chemicals and Product Safety
PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle	Not applicable
Product and Service Labeling		
PR3	Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirements	—
PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling	Not applicable
PR5	Results of surveys measuring customer satisfaction	—
Marketing Communications		
PR6	Sale of banned or disputed products	Not applicable
PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications	Not applicable
Customer Privacy		
PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	Not applicable
Compliance		
PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	Not applicable



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Printed in Japan