SUMITOMO CHEMICAL

Sustainability Data Book 2019

Change and Innovation 3.0

For a Sustainable Future

Contents

2 Editorial Policy
3 Report Profile

4 For a Sustainable Future

5 President's Message
6 Corporate Philosophy
9 What Sumitomo Chemical Group Strives to Be
10 Material Issues and Foundations for Business Continuity
12 Corporate Business Plan (FY2019 – FY2021) and Sustainability
13 Sustainability Promotion System
14 Sustainability Promotion Activities / Performance (Non-Financial Highlights)
23 Participation in Initiatives
27 Communication with Stakeholders

29 Governance

30 Corporate Governance
40 Internal Control
42 Risk Management
45 Compliance
48 Internal Reporting System (Speak-Up Reporting System)
53 Anti-corruption
56 Responsible Care
64 Information Security
67 Governance: Supplementary Data
67 1 Corporate Governance
68 2 Compliance
68 3 Tax Transparency

69 Environment

70 Environmental Activity Goals and Results
72 Addressing Climate Change
81 Environmental Protection
83 Protecting the Atmospheric Environment
84 Protecting the Aquatic Environment
85 Resource Saving and Waste Reduction
86 Biodiversity Preservation Initiatives
86 Appropriate Management of Chemical Substances
87 Protecting the Soil Environment
88 Environmental Activities: Supplementary Data
88 1 Addressing Climate Change
90 2 Environmental Protection

109 Society (Social Activities)

110 Social Activity Goals and Results
112 Respect for Human Rights
117 Procurement
121 Human Resources Management
123 Human Resources Development
127 Diversity and Inclusion
132 Healthcare
134 Occupational Safety and Health / Industrial Safety and Disaster Prevention
141 Product Stewardship / Product Safety / Quality Assurance
147 Responsibility to Our Customers
148 Initiative for Access to Healthcare
149 Local Communities
156 Social Activities: Supplementary Data
156 1 Human Resources
160 2 Occupational Safety and Health / Industrial Safety and Disaster Prevention
164 3 Product Stewardship / Product Safety / Quality Assurance
165 4 Social Contributions

166 List of Policies
167 Calculation Standards for Environmental and Social Data Indicators
170 Independent Assurance Report
171 GRI standards reference table

Editorial Policy

Since fiscal 2017, Sumitomo Chemical adjusted the positioning of its *Annual Report* and *CSR Report*, reorganizing them as an integrated report, which is Sumitomo Chemical's new *Annual Report*.

The *Sustainability Data Book* complements Sumitomo Chemical's new *Annual Report*, presenting information deemed important to both the Sumitomo Chemical Group and its stakeholders. The data book principally offers sustainability information about the Company from environmental, social, and governance (ESG) perspectives. Regarding quantitative information, assurance is provided on the indicators labeled with a star★ by KPMG AZSA Sustainability Co., Ltd. (Regarding other disclosed information, please check pages 167–169, "Calculation Standards for Environmental and Social Data Indicators," wherein a summary of data collection and calculation methods is presented.)

Sumitomo Chemical hopes that its reports can act as a tool for communication with all its stakeholders that enriches their understanding of the Company and its Group companies.

Three Reports of Sumitomo Chemical

This report brings together our key information and aims to communicate Sumitomo Chemical's value creation story in a way that is easy to understand.

Annual Report

https://www.sumitomo-chem.co.jp/english/ir/library/annual_report/

This report gives a detailed explanation of Sumitomo Chemical's businesses and products.

Investors' Handbook

https://www.sumitomo-chem.co.jp/english/ir/library/investors_handbook/

This report provides sustainability information on Sumitomo Chemical from an environmental and social perspective and governance. (website only)

Sustainability Data Book

https://www.sumitomo-chem.co.jp/english/sustainability/library/

The Sumitomo Chemical Group's Sustainability Information

In addition to the *Sustainability Data Book*, the Group provides an overview of its sustainability initiatives on its website.

https://www.sumitomo-chem.co.jp/english/sustainability/

Report Profile

● Boundary of This Report:

Sumitomo Chemical Co., Ltd. and its consolidated subsidiaries

In this report, "Sumitomo Chemical" and "Sumitomo Chemical Group" are distinguished as follows.
Sumitomo Chemical: Sumitomo Chemical Co., Ltd.
Sumitomo Chemical Group: Sumitomo Chemical and Group companies

▶ Environmental Data (pages 70–108)
▶ Social Data (pages 110–111, 134–146 and 160–164)

Sumitomo Chemical's manufacturing facilities and the production plants of major Group companies (21 companies in Japan and 20 companies overseas)
Principal consolidated Group companies, which account for up to 99.8% of Sumitomo Chemical's consolidated net sales for "Energy consumption and greenhouse gas emissions" (pages 72–74).

[Sumitomo Chemical]
Sumitomo Chemical (all works): All production bases of Sumitomo Chemical Co., Ltd.
Sumitomo Chemical (all facilities): All production and non-production bases of Sumitomo Chemical Co., Ltd.

[Group Companies in Japan]
The production plants of 15 companies sharing the Common Targets (Sumika-Kakoushi Co., Ltd.; Sumika Color Co., Ltd.; Sumika Plastech Co., Ltd.; Nippon A&L Inc.; Nihon Methacryl Monomer Co., Ltd.; Asahi Chemical Co., Ltd.; Ceratec Co., Ltd.; Sumika Assembly Techno Co., Ltd.; SanTerra Co., Ltd.; Sumika Agro Manufacturing Co., Ltd.; SC Environmental Science Co., Ltd.; Sumika Agrotech Co., Ltd.; Sumitomo Chemical Garden Products Inc.; Nihon Medi-Physics Co., Ltd.; Sumitomo Joint Electric Power Co., Ltd.). In addition to the 15 companies listed above, the production plants of 6 information disclosure companies are included in the calculations of material flow on page 82 (Koei Chemical Co., Ltd.; Taoka Chemical Co., Ltd.; Tanaka Chemical Corporation; SCIOCS COMPANY LIMITED; Sumitomo Dainippon Pharma Co., Ltd.; SN Kasei Co., Ltd.) for a total of 21 companies.

[Overseas Group companies]
Production plants of 20 overseas Group companies (Dongwoo Fine-Chem Co., Ltd.; The Polyolefin Company (Singapore) Pte. Ltd.; Sumika Technology Co., Ltd.; Sumika Electronic Materials (Wuxi) Co., Ltd.; Sumitomo Chemical Asia Pte Ltd; Sumika Huabei Electronic Materials (Beijing) Co., Ltd.; Sumitomo Chemical India Private Limited; Zhuhai Sumika Polymer Compounds Co., Ltd.; Sumika Polymer Compounds (Thailand) Co., Ltd.; Sumitomo Chemical Advanced Technologies LLC; Dalian Sumika Jingang Chemicals Co., Ltd.; Sumipex (Thailand) Co., Ltd.; Bara Chemical Co., Ltd.; SSLM Co., Ltd.; Sumika Electronic Materials (Xi'an) Co., Ltd.; Sumika Electronic Materials (Hefei) Co., Ltd.; Sumipex Techsheet Co., Ltd.; Dalian Sumika Chemphy Chemical Co., Ltd.; Sumika Electronic Materials (Shanghai) Co., Ltd.; Sumika Polymer Compounds Dalian Co., Ltd.)

Notes: More detailed information about the boundary of data is listed on each page.
Regarding affiliated companies and plants newly included in the boundary of environmental data reporting, results data are tabulated from the fiscal year when the survey was conducted as the Sumitomo Chemical Group.

● Period covered by this report: April 1, 2018 – March 31, 2019 (FY2018) (with specific exceptions outside this time frame)
● Date of publication: October 2019 (The previous issue was published in October 2018.
Next issue: Scheduled for publication in October 2020)
● Frequency of publication: Once annually
● Guidelines referred to when preparing this report:

- The *GRI Standards**
- The Japanese Ministry of the Environment's "*Environmental Reporting Guidelines*" (2012 edition) and "*Environmental Accounting Guidelines*" (2005 edition)
- The *ISO 26000* international standard on Social Responsibility (SR)

* This report is based on *GRI standards*.

P.171 GRI standards reference table

For a Sustainable Future

Contents

5 President's Message
6 Corporate Philosophy
9 What Sumitomo Chemical Group Strives to Be
10 Material Issues and Foundations for Business Continuity
12 Corporate Business Plan (FY2019 – FY2021) and Sustainability
13 Sustainability Promotion System
14 Sustainability Promotion Activities / Performance (Non-Financial Highlights)
23 Participation in Initiatives
27 Communication with Stakeholders

Regarding each ESG information,
Please refer to the following chapters

Governance: page 29

Environment: page 69

Society (Social Activities): page 109

President's Message

We Aim to Achieve Our Sustainable Growth and Help Realize a Sustainable Society by Creating Economic Value and Social Value in an Integrated Manner.

Chemistry is playing an increasingly large role in solving social issues, including those related to the environment, energy, and food, as highlighted by the SDGs adopted by the United Nations in 2015.

In the Medium-Term Corporate Plan launched in April 2019, we outline what we are striving for, namely, to achieve sustained growth for Sumitomo Chemical and build a sustainable society by creating both economic and social value. To help realize this vision, we identified the four material issues for social value creation that are directly related to our businesses. Contribution to solving food issues is one such issue and contribution to reducing environmental impact, including the mitigation of climate change and the recycling of plastic resources is another. We also identified three material issues for value creation in the future, namely the promotion of technology innovation and R&D, diversity and inclusion, and initiatives for digital innovation.

At the same time, we are still committed to maintaining safe and stable operations, ensuring full and strict compliance, and respecting human rights, for which a value chain-wide response is strongly demanded. We consider these efforts indispensable for remaining a going concern and strive to bolster our actions across the Group.

About a century ago, Sumitomo Chemical got its start by manufacturing fertilizers from gas emitted from copper smelting operations at the Besshi Copper Mine in Niihama, Ehime Prefecture, aiming to solve the environmental problem of smoke pollution while helping to increase agricultural output. The Sumitomo Chemical Group actively promotes dialogue with internal and external stakeholders to continue to live up to the trust it has earned from society. In this way, the Group will continue striving to realize its vision with a sense of speed and determination while honoring the DNA that stretches back to the Company's founding.

Thank you for your continued understanding and support.

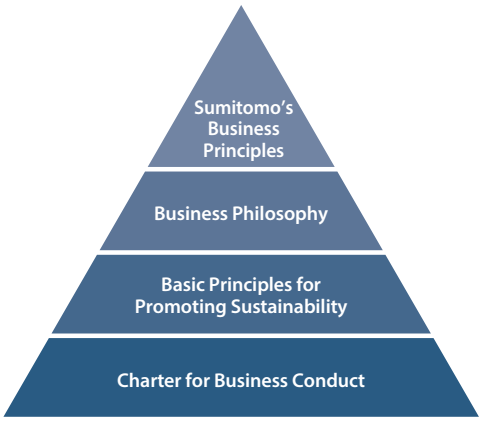
岩田圭一

Keiichi Iwata
Representative Director & President

The Sumitomo Chemical Group's Corporate Philosophy

Sumitomo Chemical began business by manufacturing fertilizers from the sulfurous acid gas contained in the smoke pollution emitted by copper smelting operations at the Besshi Copper Mine, aiming to solve the environmental problem of smoke pollution while revitalizing the farming industry.

The Corporate Philosophy is based on Sumitomo's Business Principles and is composed of the Business Philosophy, which integrates the company's business principles, mission and values. Basic Principles for Promoting Sustainability, which comprehensively organizes its thoughts and commitments on sustainability; and the Sumitomo Chemical Charter for Business Conduct, which lays out the code of behavior serving as the basis for the company's compliance system.



Sumitomo's Business Principles (The Sumitomo Spirit)

1. Sumitomo shall achieve prosperity based on solid foundation by placing prime importance on integrity and sound management in the conduct of its business.
2. Sumitomo's business interest must always be in harmony with public interest;
   Sumitomo shall adapt to good times and bad times but will not pursue immoral business.

The first pledge in Sumitomo's Business Principles, advocating integrity and sound management, reflects the importance of maintaining the trust of the Company's business partners and of society as a whole. The second pledge calls for refraining from the pursuit of easy gains–conducting thorough investigations and giving serious thought to business decisions so as not to be blinded by the prospect of immediate gains.

The traditional concept **"Jiri-Rita Koushi-Ichinyo,"** while not expressly stated, is also regarded as one of the Sumitomo's Business Principles: harmony between the individual, the nation and society. Sumitomo manifests this concept by seeking to benefit not only its own business, but also both the nation and society, and by the Company's emphasis on maintaining harmony between its interests and those of the public. To this day, these principles are strictly applied throughout the various Sumitomo Group companies, including Sumitomo Chemical.

Sumitomo Chemical's Business Philosophy

1. We commit ourselves to creating new value by building on innovation.
2. We work to contribute to society through our business activities.
3. We develop a vibrant corporate culture and continue to be a company that society can trust.

Sumitomo Chemical's Business Philosophy is embodied in these three sentences. Such management principles as "placing prime importance on integrity and sound management" and "adapting to good times and bad times and not pursuing immoral business" were seen in the Sumitomo Spirit. Other business teachings that Sumitomo passed from one generation to the next include the above-mentioned "Jiri-Rita Koushi-Ichinyo." Sumitomo Chemical took a fresh look at such fundamental business principles, its mission and values, and committed them to writing.

The Sumitomo Chemical Group's Corporate Philosophy

Basic Principles for Promoting Sustainability

The Sumitomo Chemical Group established its Basic Principles for Promoting Sustainability in January 2019 by comprehensively reviewing and organizing its thoughts and commitments on sustainability. The Basic Principles are positioned next to the Business Philosophy in importance, demonstrating the Group's firm management commitment to promoting sustainability.

Basic Principles for Promoting Sustainability

We at the Sumitomo Chemical Group are committed to promote sustainability by acting in accordance with Six Basic Principles, guided by the Sumitomo Spirit and the Group's Business Philosophy, namely contributing to establishment of sustainable society through achieving sustainable growth of business.

Principle 1: Creating economic value which helps create social value (Promoting our credo "Our businesses must benefit society at large, not just our own interests (Jiri-Rita Koushi-Ichinyo)")

We are committed to promote creating economic value (jiri*) which helps to create social value (rita*) through offering technological or other innovation so that we can continue to grow as a business group that earns the trust and confidence of society.

P.9 What Sumitomo Chemical Group Strives to Be

Principle 2: Contribution to solving globally vital issues

We are committed to contribute to solving a variety of issues that are globally vital, such as establishing diverse and inclusive society and achieving the Sustainable Development Goals (SDGs), as well as doing business in compliance with accepted universal standards and principles, including those concerning human rights, labor, safety, the environment and anti-corruption.

P.10 Material Issues and Foundations for Business Continuity

Principle 3: Active participation in global initiatives

We are committed to play a leadership role in multilateral initiatives through actively participating in various partnerships domestically and overseas with international organizations, national or local governments, business corporations, industrial associations, universities, academic circles, civic communities, etc.

P.23 Participation in Initiatives

Principle 4: Collaboration with stakeholders

We are committed to work closely with various stakeholders through promoting spontaneous disclosure of information and open dialogue on the targets of our sustainability promotion initiatives and the progress of their implementation.

P.27 Communication with Stakeholders

Principle 5: Top management commitment and participation by all

We are committed to carry out initiatives toward promoting sustainability, led by our top management having taken firm pledges to this end and advanced by all officers and employees, across the Sumitomo Chemical Group with a shared strong sense of mission and great enthusiasm.

P.14 Sustainability Promotion Activities (T, S, and P)

Principle 6: Enhancing Corporate Governance

We are committed to assess and improve our activities continually and proactively for promoting sustainability by reviewing the progress of the activities periodically and from holistic viewpoints.

P.13 Sustainability Promotion System

Notes:
- Based on the concept of "Jiri-Rita Koushi-Ichinyo" (harmony between the individual, the nation and society (one aspect of the Sumitomo Spirit)), we define the promotion of sustainability as contributing to establishment of sustainable society through achieving sustainable growth of business. We replaced our original Basic CSR Policy with six basic principles related to promoting sustainability initiatives.
- We establish these Basic Principles for Promoting Sustainability as the Sumitomo Chemical Group's promotion principles.

* "Jiri" and "rita" both come from a time-honored traditional concept of Buddhism, "Jiri-Rita Koushi-Ichinyo", meaning, as it applies in Sumitomo's business, that our business must benefit ourselves (jiri) and at the same time serve the interests of the nation and society (rita). This teaching emphasizes the importance of maintaining harmony between the interests of a business and those of the public (koushi-ichinyo).

The Sumitomo Chemical Group's Corporate Philosophy

Sumitomo Chemical Charter for Business Conduct

1. We will respect Sumitomo's business philosophy and act as highly esteemed good citizens.
2. We will observe laws and regulations, both at home and abroad, and will carry out activities in accordance with our corporate rules.
3. We will develop and supply useful and safe products and technologies that will contribute significantly to the progress of society.
4. We will engage in voluntary and active initiatives to achieve zero-accident and zero-injury operations and preserve the global environment.
5. We will conduct business transactions based on fair and free competition.
6. We will endeavor to make our workplaces sound and energetic.
7. Every one of us will strive to become a professional and achieve advanced skills and expertise in our field of responsibility.
8. We will actively communicate with our various stakeholders, including shareholders, customers, and local communities.
9. As a corporate member of an international society, we will respect the culture and customs of every region of the world and contribute to the development of those regions.
10. We will strive for the continued development of our Company through business activities conducted in accordance with the guiding principles described herein.

We believe it is our social responsibility to conduct business to the highest ethical standards and act on our own responsibility. The "Sumitomo Chemical Charter for Business Conduct" spells out the basic guiding principles on which our compliance system is built.

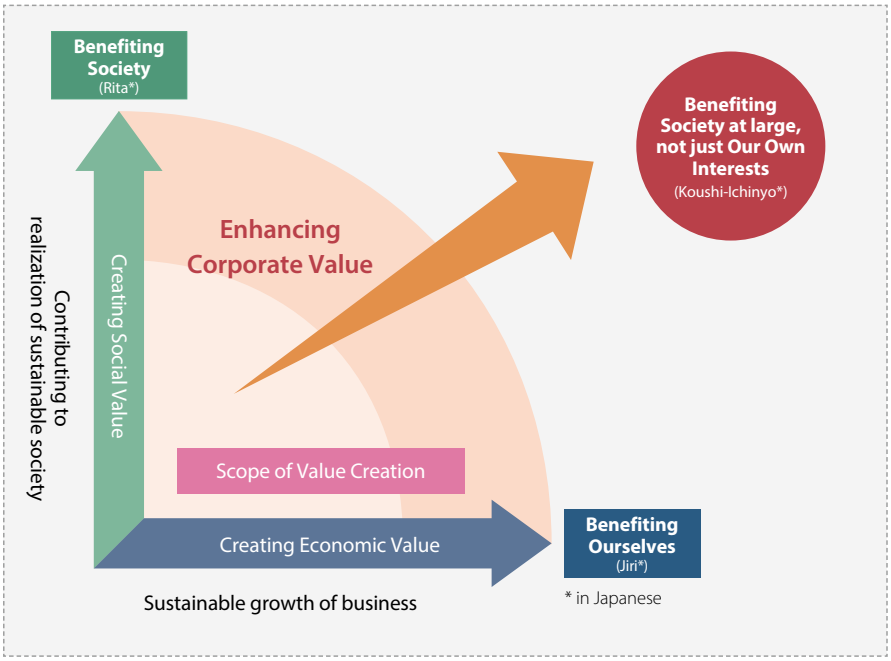
P.45 Compliance

What Sumitomo Chemical Group Strives to Be

The Basic Principles for Promoting Sustainability define promoting sustainability as "contributing to establishment of sustainable society through achieving sustainable growth of business," thereby aiming to enhance our corporate value. The jiri axis represents economic value, and the rita axis represents social value. We aim to enhance corporate value by creating both economic and social value, or, in other words, realizing Jiri-Rita Koushi-Ichinyo.

Image of Enhancing Corporate Value

What We Strive to Be	Achieve sustained growth for the Sumitomo Chemical Group and build a sustainable society by creating both economic and social value

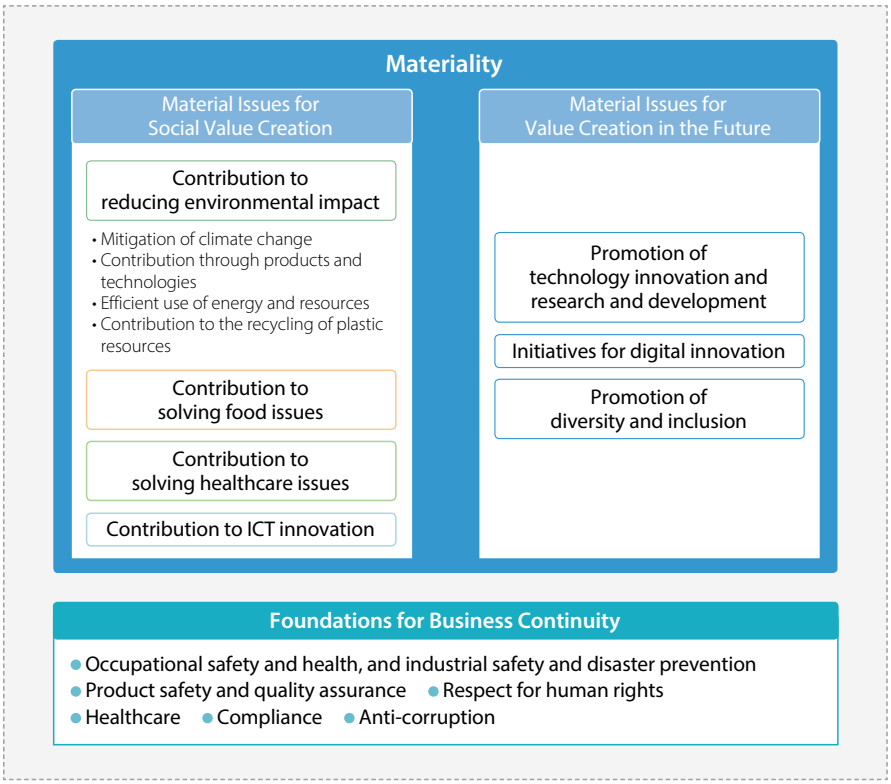


Jiri-Rita Koushi-Ichinyo*	Our businesses must benefit society at large, not just our own interests, a credo of the Sumitomo's Business Spirit

Material Issues and Foundations for Business Continuity

Sumitomo Chemical launched a new Three-Year Corporate Business Plan on April 1, 2019. Prior to the launch, the Company identified Seven Material Issues that it is now addressing as management challenges to sustainably create sustainable economic and social value. The Seven Material Issues have been identified to serve as navigation beacons as we pursue initiatives that will contribute to the establishment of a sustainable society. They are considered issues of material importance from two perspectives: the creation of social value, involving initiatives directly related to Sumitomo Chemical's current businesses, and the creation of future value, involving future-oriented initiatives that address the Company's business prospects.

Material Issues and Foundations for Business Continuity



In addition to the seven material issues we defined, we recognize the following matters to be underpinning materiality and essential to our business foundations: occupational safety and health, industrial safety and disaster prevention; product safety and quality assurance; respect for human rights; healthcare; compliance; and anti-corruption. Although we do not deem these matters to be material in themselves, they are necessary for value creation. The Sumitomo Chemical Group will continue to ardently work on these matters in unison and disclose its efforts to external parties.

The foundations of business continuity are explained in more detail in each of the following sections.

Occupational Safety and Health, Industrial Safety and Disaster Prevention
P.134 Occupational Safety and Health / Industrial Safety and Disaster Prevention

Respect for Human Rights
P.112 Respect for Human Rights

Compliance
P.45 Compliance

Product Safety and Quality Assurance
P.141 Product Stewardship / Product Safety / Quality Assurance

Healthcare
P.132 Healthcare

Anti-corruption
P.53 Anti-corruption

Material Issues and Foundations for Business Continuity

Process for Defining Material Issues

We define material issues with consideration of opinions from various external parties and international guidelines and through participation in initiatives and communication with stakeholders, and comparing our own identified material issues with the social needs and issues identified by external parties, including the SDGs.

Going forward, we will set key performance indicators (KPIs) for each isssue, check the progress made under the Corporate Business Plan, and use material issues and the KPIs to promote dialogue with internal and external stakeholders.

Process for Defining Material Issues

1 Assessment from holistic viewpoints of Sustainability Contributions (Sustainability Promotion Committee)

- Corporate Philosophy, including the Basic Principles for Promoting Sustainability
  We comprehensively outline policies and commitments related to sustainability and choose issues in consideration of their importance to the Sumitomo Chemical Group.
- Demands from society
  Through our participation in initiatives or from the results of external ratings, we confirm what is being demanded of the Group.

Main International Guidelines and Initiatives Used as References

- External opinions, such as those from the WBCSD
- ISO 26000
- SDGs
- GC 10 Principles
- GRI Standards
- External ratings, such as those by FTSE and EcoVadis

2 Selection of Proposals for Material Issues (Sustainability Promotion Committee)

- We select proposals for material issues that management considers will continuously create both economic and social value.
- We position occupational safety and health, industrial safety, and disaster prevention as essential to our business foundations and thus indispensable to securing business continuity.

3 Deliberation and Approval by Management

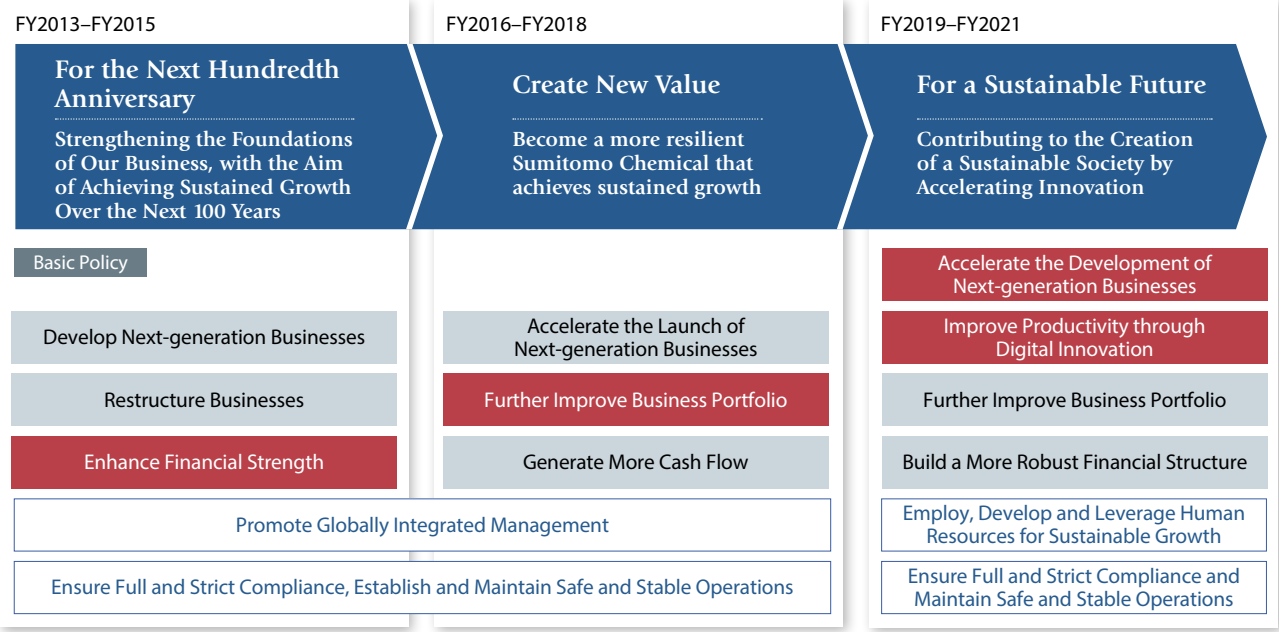
The proposals were decided on at the Board of Directors meeting held in February 2019, after being deliberated on at the Management Meetings.

Corporate Business Plan (FY2019 – FY2021) and Sustainability

Sumitomo Chemical has positioned "contributing to the creation of a sustainable society" as a major pillar in the Corporate Business Plan launched in April 2019. With regard to the first point of the basic policy of the plan, which is "Accelerating the development of next-generation businesses," we have set out the four focus areas of Healthcare, Reducing Environmental Impact, Food, and ICT (refer to pages 22–23 of *Annual Report 2019*). These are areas where we can use the Sumitomo Chemical Group's technologies and that are indispensable to solving major social issues and enhancing quality of life. These are the same four areas specified under material issues for social value creation (refer to page 10), which is a category of the seven material issues identified prior to the launch of the Corporate Business Plan.

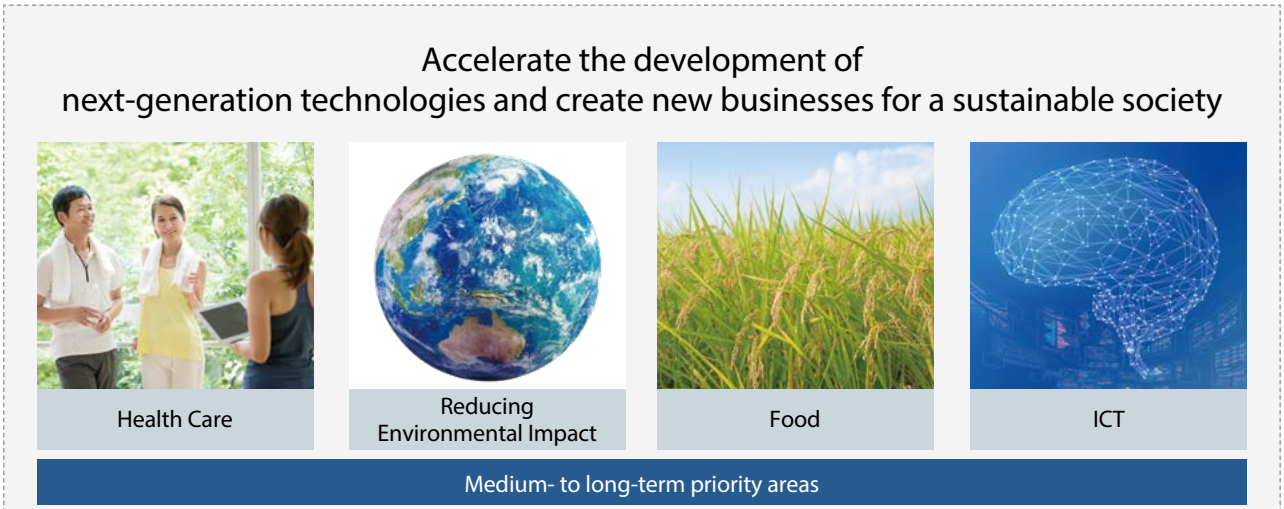
By successfully carrying out its Corporate Business Plan, the Company aims to promote initiatives targeting material issues and the realization of business goals set by the Corporate Business Plan. In this way, we will achieve sustained growth for the Sumitomo Chemical Group and build a sustainable society by creating both economic and social value.

Transition of the Corporate Business Plan "Change and Innovation" from FY2013



Note: The current Corporate Business Plan is the first that positioned "contributing to the creation of a sustainable society" as a major pillar.

The Four Priority Areas for Accelerating the Development of Next-generation Businesses (From the basic policy of the FY2019–FY2021 Corporate Business Plan)

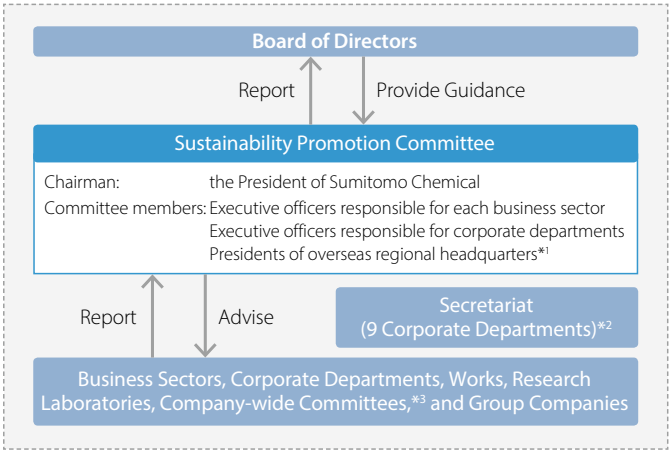


Sustainability Promotion System

Management System

In April 2018, Sumitomo Chemical enhanced the CSR Promotion Committee, thereby creating the Sustainability Promotion Committee.

Sustainability Promotion Committee Overview



*1 The Americas region, Europe region, China region, and Asia-Pacific region
*2 The CSR Department, Legal Department, Human Resources Department, Corporate Communications Department, Corporate Planning Department, Research Planning and Coordination Department, Responsible Care Department, Procurement Department, and Logistics Department
*3 The Responsible Care Committee, Human Rights Promotion Committee, etc.

(Purpose)

1. Oversee the Group's sustainability promotion activities
2. Comprehensively verify contributions to sustainability
3. Accelerate efforts to solve issues in society, including the SDGs

(Role)

The committee provides advice to each executive organization to ensure that the Group's business activities all function organically to realize sustainability for all society and that said activities are fairly assessed by stakeholders.

1. SOLUTION: Providing advice to each business sector and each Group company on contributing to the sustainable growth of society through business operations
2. INITIATIVE: Providing advice to various committees through participation in international initiatives
3. ENGAGEMENT: Providing advice related to assessing and enhancing communication through dialogue with stakeholders

(Committee Members)

The Sustainability Promotion Committee is chaired by the president of Sumitomo Chemical and composed of executive officers from each business sector, the executive officers from the corporate departments and the presidents of four overseas regional headquarters.

(Secretariat)

The committee's secretariat comprises the CSR Department, Legal Department, Human Resources Department, Corporate Communications Department, Corporate Planning Department, Research Planning and Coordination Department, Responsible Care Department, Procurement Department, and Logistics Department.

(Fiscal 2018 Results)

The committee convened twice. The members shared information on international trends related to sustainability and outlined relevant issues in the Sumitomo Chemical Group. The committee also held active discussions on formulating the Basic Principles for Promoting Sustainability and defining material issues. In addition, the committee considered establishing more sustainability promotion initiatives and KPIs further down the line.

Sustainability Promotion Activities / Performance (Non-Financial Highlights)

Promoting Sustainability across the Three Aspects of T, S, and P

Since the adoption of the SDGs, the entire Sumitomo Chemical Group has been working to promote sustainability across the three aspects of T, S, and P; that is, with the commitment of top management (T), through its business solutions (S), and with the participation of all employees and management (P).

Top Commitment

In its Basic Principles for Promoting Sustainability, Sumitomo Chemical outlines its vision for top management promoting sustainability across the entire Group and made this its Corporate Philosophy. To clearly promote this, we positioned contributing to the establishment of a sustainable society as a major pillar both in the process for the defining material issues and in the Corporate Business Plan, which was launched in April 2019. Furthermore, as part of the Sumitomo Chemical Group's sustainability measures, which have been a focus of management, Sumitomo Chemical has formulated Sumitomo Chemical Group Human Rights Policy and established the Human Rights Promotion Committee.

In addition, regarding the promotion of sustainability, to raise Group-wide awareness of important sustainability measures, we send out a letter penned by Sumitomo Chemical's president. Going forward, executive officers will hold multiple briefings at each worksite and Group company in Japan. The four regional headquarters around the world will hold briefings for Group companies overseas.

Top Message

https://www.sumitomo-chem.co.jp/english/sustainability/top_message/

Sustainability Promotion Activities / Performance (Non-Financial Highlights)

Solutions: Sumika Sustainable Solutions (SSS)

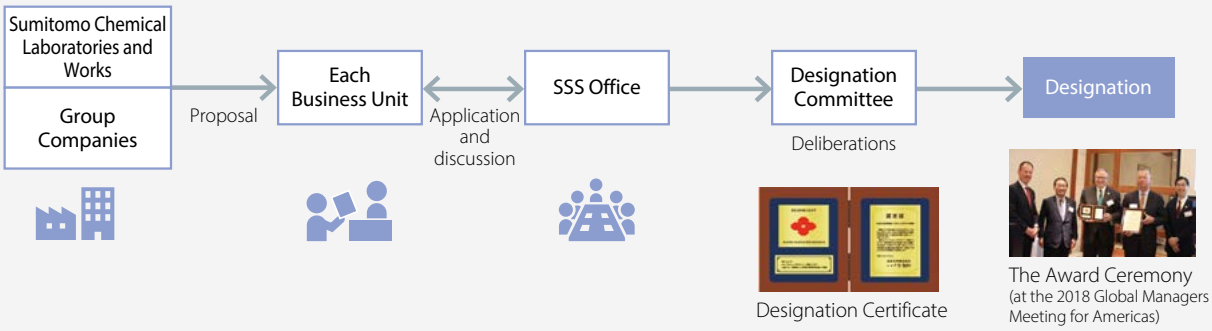
Quantifying the Contributions of Businesses to Global Environmental Issues → Sumika Sustainable Solutions

As a concrete initiative to contribute to reducing environmental impact, which is one of our material issues, we have designated those of our products and technologies that contribute to such issues as global warming countermeasures, reducing environmental burdens, and effective use of resources, as Sumika Sustainable Solutions (SSS). By promoting the development and widespread use of these products and technologies, the Sumitomo Chemical Group is offering solutions that will help build a sustainable society and striving to create both economic and social value. In addition, we quantify our contribution to global environmental issues by calculating sales revenues of SSS-designated products and technologies and the amount they contribute to the reduction of greenhouse gases.

Area	Designation Requirements
Addressing Climate Change	Contribute to reducing greenhouse gas emissions
	Products or materials used in the creation of alternative energy
	Use biomass-derived raw materials
	Contribute to adapting to the climate change impacts
Reducing Environmental Impact	Contribute to reducing waste, hazardous substances, and other environmental burdens
	Contribute to reducing environmental impact in food production
Effective Use of Resources	Contribute to the realization of recycling and resource saving
	Contribute to the efficient use of water resources

SSS Designation Process

The Designation Committee officially designates products and technologies as SSS after they have been proposed for certification by laboratories, production facilities, or Group companies. In addition, the designated cases have been verified by a third-party institution, and the results of the internal designation have been evaluated as valid.

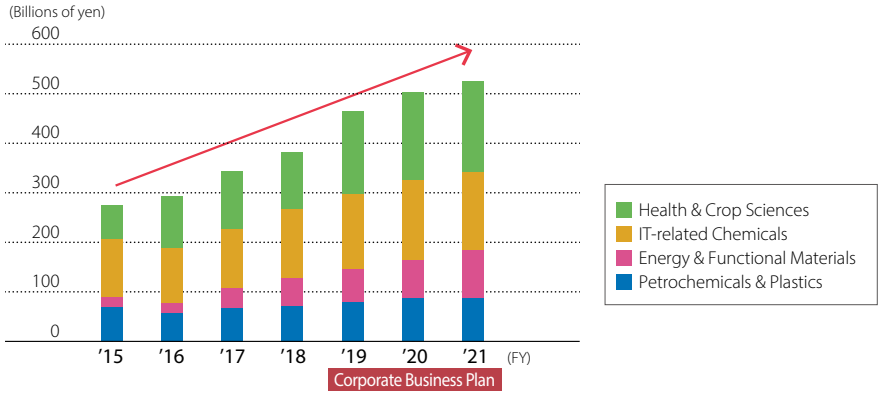


Sumika Sustainable Solutions

https://www.sumitomo-chem.co.jp/english/sustainability/sdgs/sss/

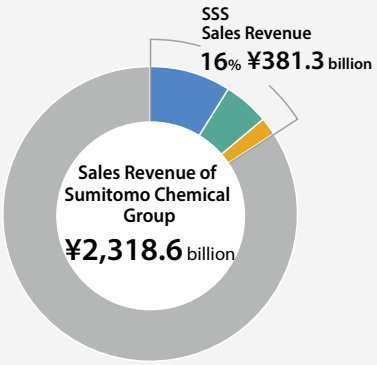
Sustainability Promotion Activities / Performance (Non-Financial Highlights)

Sales Revenue of Designated Products and Technologies



A total of 48 products and technologies have been designated so far, and Sumitomo Chemical aims to quickly double their sales revenue compared with FY2015.

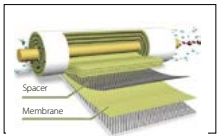
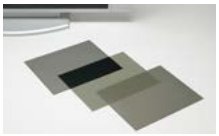
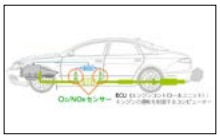
Breakdown by Designation Area (FY2018 Results)



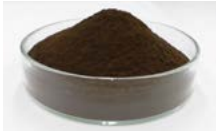
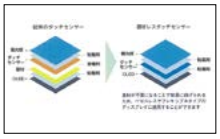
- **Addressing Climate Change**
  Reduction in greenhouse gas emissions due to products and technologies designated in this area, across the life cycles of the products: Approximately 58 million tons (CO_2 equivalent, predicted total by FY2020)
- **Reducing Environmental Impact**
  FY2018 sales revenue of products and technologies designated in this area: 5% increase (compared with FY2017)
- **Effective Use of Resources**
  Reduction in water use per year due to products and technologies designated in this area: 50,000 tons

Sustainability Promotion Activities / Performance (Non-Financial Highlights)

"Sumika Sustainable Solutions" Main Products and Technologies

Solutions		Features	Contributions to SDGs
Addressing Climate Change			
PERVIO™, lithium-ion secondary battery separator		A material capable of providing high-capacity lithium-ion secondary batteries, contributing to the expanded use of next- generation vehicles, such as electric vehicles.	7, 13
SUMIKAEXCEL™, polyethersulfone		An additive for carbon-fiber reinforced plastics used in aircraft, making aircraft lighter and hence fuel-efficient.	7, 13
CO_2 separation membrane		Used in hydrogen production and natural gas refining to remove CO_2, it significantly reduces energy consumption during CO_2 separation compared with conventional methods.	7, 13
UV curing for polarizer lamination		Achieves substantial energy saving in the manufacturing of a polarizing film for displays compared with conventional methods.	7, 12, 13
SUMIMET™, feed additive methionine		Adding methionine to poultry feed improves the balance of amino acids in feed, resulting in reduced nitrogen in poultry excrement, a cause for greenhouse gas emissions.	12, 13
Olyset™ Net, anti-malarial long-lasting insecticidal mosquito net		A mosquito net developed for controlling malaria-carrying mosquitoes, helping reduce malaria infection.	3, 13
Vector-control pesticides		In addition to fulfilling an important role in repelling and exterminating insects that spread infectious diseases, these pesticides facilitate adaptation to the effects of climate change.	3, 13
Carbon dioxide separation and recovery technology (Sumitomo Joint Electric Power Co., Ltd.)		Separates and recovers CO_2 from gases exhausted from a thermal power station, which is then used as an auxiliary material for chemicals production at another manufacturing plant of Sumitomo Chemical's Ehime Works. Contributes to reducing CO_2 emissions.* * Technology for CO_2 separation and recovery is a proprietary technology of Nippon Steel Engineering Co., Ltd.	13
Reducing Environmental Impact			
Halogen-free flame-retardant elastomer		This elastomer is used in railway and construction materials. It does not contain halogen but is as flame retardant as a halogen-based material. In addition, it helps limit emissions of hazardous gases while burning.	12
High-purity alumina (for use in automotive O_2 / NOx sensors)		This material is used as insulation for the high-performance sensors that are needed to keep automotive emissions of NOx and other gases under mandated levels. It helps reduce greenhouse gas emissions.	12

Sustainability Promotion Activities / Performance (Non-Financial Highlights)

Solutions		Features	Contributions to SDGs
Polymer OLED lighting		Manufactured using processes that are energy- and resource-efficient due to the coating and printing methods, these lights can produce color over a wide temperature range, from gentle to vivid.	7, 13
Biorationals (Microbial pesticides, plant growth regulators, biorational rhizosphere microbial agricultural materials)		Use of active ingredients derived from naturally occurring substances contributes to the promotion of sustainable agriculture and the stable supply of safe and secure food.	2, 12, 13
Seed treatment agents		Accurate treatment of seeds prior to sowing with seed treatment agents makes it possible to substantially reduce the spraying dosage and frequency of crop protection products, contributing to reduced environmental burdens in food production.	2, 12
Binder for lithium-ion secondary batteries (Nippon A&L Inc.)		This product reduces the consumption of organic solvents in the manufacture of electrodes for lithium-ion secondary batteries by the use of water as the dispersion medium.	7, 12
Temperature-sensitive film "CHO-CO" (SanTerra Co., Ltd.)		A temperature-sensitive plastic film for greenhouse use that stays transparent and allows sunlight to enter at low temperatures while becoming opaque and scattering the sunlight high temperatures.	2, 12, 13
Cobalt-coated nickel Hydroxide positive Electrode material (Tanaka Chemical Corporation)		Making the designing of high-output nickel hydride battery possible, it contributes to widespread use of environmentally friendly vehicles. Cobalt usage can also be reduced.	7, 12
Effective Use of Resources			
SUMIKATHENE™EP, EXCELLEN™GMH, polyethylene used for refill pouches		For detergent packaging, pouch bags made of this polyethylene material have easy tear-open spouts for easy refilling of dispensers, producing less plastic waste than rigid bottles.	12, 13
Substrate-less touch sensor (Dongwoo Fine-Chem Co., Ltd.)		This product performs all the functions of a touch sensor without requiring substrates such as glass and film, which are indispensable elements in conventional touch sensors. For this reason, this product contributes to resource saving.	12
Multi-purpose polypropylene sheet (Sumika Plastech Co., Ltd.)		Being free from paper dust concern and desirable from a viewpoint of re-use, it is used for food containers and delivery materials for electronic parts. Contributing to reducing greenhouse gas emissions.	12, 13
Effluent treatment technology using a deammoniation tower		Removes and recovers ammonia in effluent and recycles it for re-use. Contributes to reducing nitrogen discharge from a manufacturing plant.	12

Sustainability Promotion Activities / Performance (Non-Financial Highlights)

Participation: Global Project (FY2016–2018 Sustainable Tree)

We have been implementing the Sumitomo Chemical Group Global Project since fiscal 2014 with the aim of fostering a feeling of unity across the Group for all employees and managers in Japan and overseas so that each person can focus on helping to solve social issues. In the three years from fiscal 2016 to 2018, we thought about how we could help realize a sustainable society under the theme of the SDGs and implemented the Sustainable Tree, for posting relevant thoughts.

With the Sustainable Tree, we have steadily promoted Group-wide our sustainability policy of helping realize a sustainable society through business.

Three-Year Sustainable Tree Initiatives

Three-Year Results
Participants: Running total of 60,257
Posts: Running total of 22,804

Everyone Understands the SDGs

What are the SDGs? How can a diversified chemical company help solve the world's problems? We distributed a manga in 11 languages answering these questions in an easy-to-understand way. People posted about their day-to-day efforts.

Fiscal 2016

Connection between Work and the SDGs

We decided that the theme for posts this year would be work and efforts in the workplace. We encouraged conversations in the workplace and posts.

Fiscal 2017

Working toward the SDGs as a Company

Within the dedicated website, each Group company creates a page and posts about their initiatives in terms of T, S, and P.

- T Message from top management
- S Introduction of case studies (initiatives and products)
- P Everyone's posts

Participation by each company advances, and the posting rate (number of companies that have posted / number of companies asked to participate) has risen every year.

Posting rate (%)

	FY2016	FY2017	FY2018
Group companies in Japan	48	76	98
Group companies overseas	57	63	67

Fiscal 2018

Sustainability Promotion Activities / Performance (Non-Financial Highlights)

In fiscal 2018, we enhanced the function of the website for sharing SDG-related general information. On the site, we introduce the Group's best practices and outstanding products and technologies. In this way, we facilitated the sharing of information and the raising of awareness among organizations and employees. We also shared the latest trends related to climate change and the SDGs and enable access to external information.

An example of a best practice (Sumika Agrotech Co., Ltd.)

In fiscal 2019, we changed the name of the site to "For a Sustainable Future –JIRI RITA–". We are promoting its use as a tool for achieving the Group's goal of realizing sustainability and will continue to promote sustainability across the entire Group with T, S, and P approach.

Our Efforts to Help All Officers and Employees Achieve Their Goals - Our Sustainable Tree -

https://www.sumitomo-chem.co.jp/english/sustainability/sdgs/sustainabletree/

Sustainability Promotion Activities / Performance (Non-Financial Highlights)

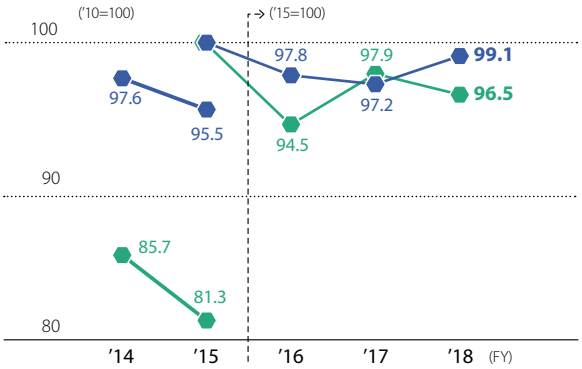
Non-Financial Highlights

Unit CO_2 Emissions Index in Japan / Unit CO_2 Emissions Index outside Japan (Sumitomo Chemical Group*1)

P.73

Japan **99.1** vs. FY2017 +1.9pt ↑

Outside Japan **96.5** vs. FY2017 -1.4pt ↓



The reason for the deterioration from the previous fiscal year in the unit CO_2 emissions index in Japan in fiscal 2018 is a decline in the capacity utilization rate because of periodic maintenance of factories and other factors. Sumitomo Chemical is working to improve this index, both inside and outside Japan, putting greater focus on saving energy.

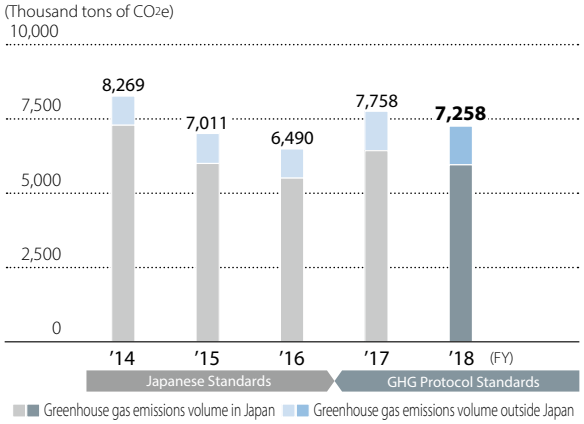
*1 Index reflects the total production plants of Sumitomo Chemical and its major Group companies that share CO_2 emission intensity index reduction goals.

Greenhouse Gas (GHG) Emissions Volume (Sumitomo Chemical Group*2)

P.73

7,258 thousand tons of CO_2e

vs. FY2017 −500 thousand tons of CO_2e ↓



The main factors contributing to the year-on-year decline in GHG emissions in fiscal 2018 were the temporary impact of periodic maintenance at Sumitomo Joint Electric Power Co., Ltd., our group company. We will continue our efforts to achieve the targets certified by the Science Based Targets initiative in the future.

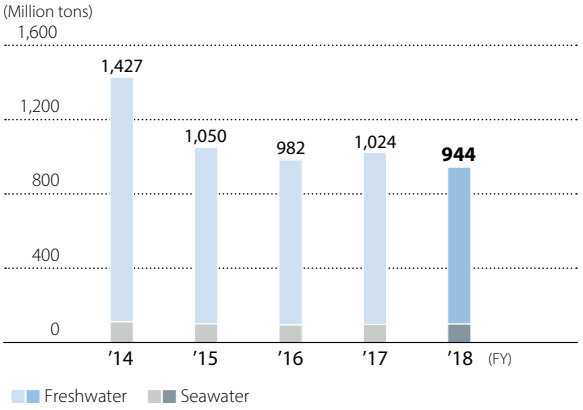
*2 Refer to page 73 for the boundary of calculation.

Water Usage (Sumitomo Chemical Group*3)

P.84

944 million tons

vs. FY2017 −80 million tons ↓



We will work to reduce water usage through effective use of water, depending on the application, while endeavoring to assess risks to water supplies. Seawater is used for cooling plants and other facilities.

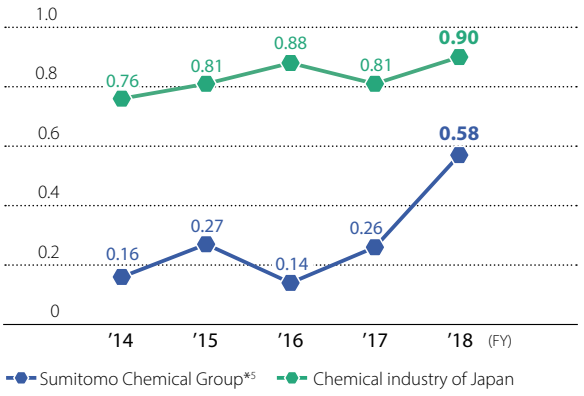
*3 Sumitomo Chemical's manufacturing facilities and the production plants of major Group companies

Lost-workday Incident Rate*4 (Sumitomo Chemical Group*5)

P.135

0.58

vs. FY2017 +0.32pt ↑



The frequency rate of lost-workday incidents for fiscal 2018 was 0.58, which was far worse than our target of 0.1. We will thoroughly investigate the cause and implement basic safety rules to take preventive measures.

*4 Indicates the frequency of industrial incidents as the number of deaths and injuries per one million hours of total work time.

*5 Sumitomo Chemical (including its partner companies and others) and consolidated subsidiaries in Japan and overseas

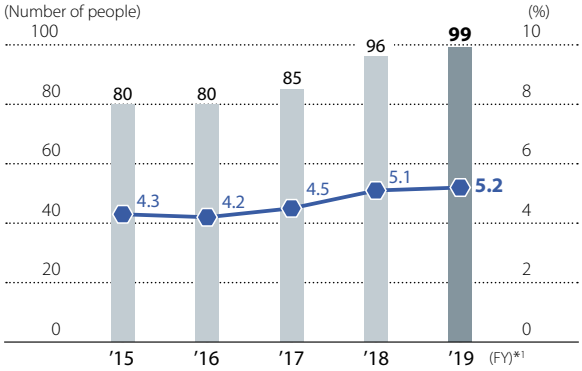
Sustainability Promotion Activities / Performance (Non-Financial Highlights)

Non-Financial Highlights

Number of Female Managers / Percentage of Female Managers (Sumitomo Chemical)

P.128

5.2% (Percentage of Female Managers among Managers) vs. FY2018 +0.1pt



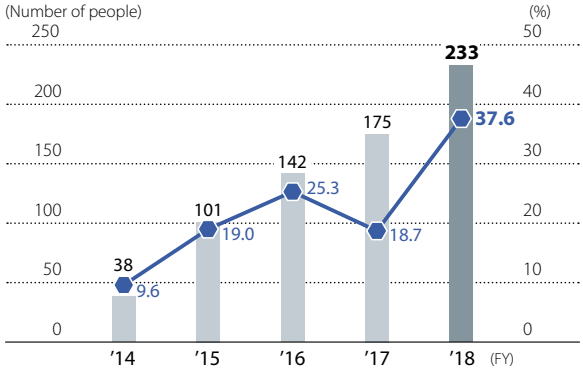
In order to promote the advancement of female employees, Sumitomo Chemical has set a goal of at least 10% of female employees in positions equivalent to manager or above.

*1 All numbers as of April 1 of that year

Number of Men Taking Cessation from Work for Childcare*2 / Percentage of Men Taking Cessation from Work for Childcare*3 (Sumitomo Chemical)

P.131

37.6% (percentage of men taking cessation from work for childcare) vs. FY2017 +18.9pt



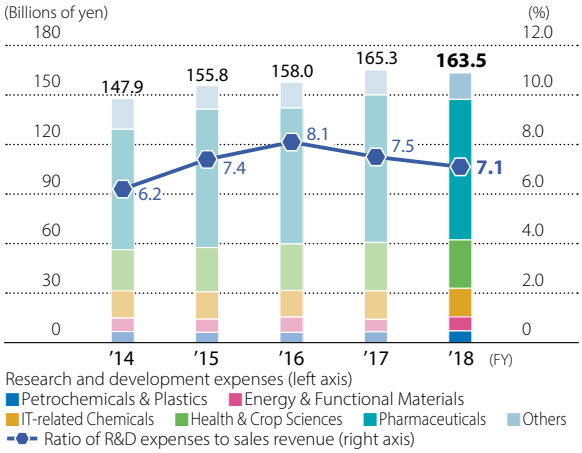
Sumitomo Chemical is encouraging male employees who have had children to take cessation from work for childcare, with a goal of realizing at least 50% of male employees taking cessation from work for childcare.

*2 The percentage of male employees who have taken cessation from work for childcare and had a child of three years or younger as of April 30.

*3 The number of people who have taken cessation from work for childcare divided by the number of male employees who have had children in the relevant period.

Research and Development Expenses / Ratio of R&D Expenses to Sales Revenue (Sumitomo Chemical Group)

¥163.5 billion (Research and Development Expenses) vs. FY2017 -1.1%

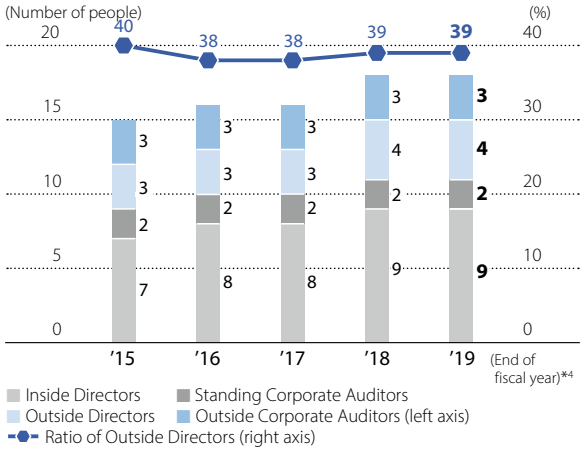


R&D expenses for the previous Corporate Business Plan (FY2016-FY2018) amounted to 486.8 billion yen. The new Corporate Business Plan (FY2019-FY2021), which began in fiscal 2019, is expected to spend approximately 540 billion yen, primarily in specialty chemicals in the Pharmaceuticals Sector and the Health & Crop Sciences Sector.

Number of Directors / Number of Outside Directors / Ratio of Outside Directors and Corporate Auditors (Sumitomo Chemical)

P.31

4 (Number of Outside Directors)



With the goal of further strengthening the Board of Directors' oversight and advisory functions to increase the transparency and objectivity of management, in June 2018 we added one outside director, increasing the total number to four (including one female director). As a result, of the 18 total members of the Board of Directors and the Board of Corporate Auditors, seven are outside members.

*4 FY2019 only as of July 1

Participation in Initiatives

Basic Policy

Sumitomo Chemical is tackling various challenges facing humanity, specifically poverty, climate change, and educational and gender inequality. On this front, we are going beyond just complying with international regulations and are working with a range of organizations, including various international organizations and NPOs as well as other companies, to actively participate in initiatives.

Some of the major sustainability-related initiatives in which Sumitomo Chemical participates take a general approach and some focus on one among a variety of specific causes, such as the environment, health, hygiene, human rights, and equality.

Initiative Participation Record

Our UN Global Compact Activities

The Sumitomo Chemical Group became the first Japanese chemical company to become a participant in the UN Global Compact (UNGC) in January 2005 and has been a participant in the UNGC LEAD since its launch in November 2011.

At the UN Global Compact Leaders Summit 2018, which was held at the UN Headquarters in New York in September 2018, the Group was recognized as a UNGC LEAD Company. This recognition reflected our ongoing contributions to the UNGC and an assessment of our business activities as being in line with the UNGC's Ten Principles, which cover four categories (human rights, labour, environment, and anti-corruption).

The UNGC is a voluntary initiative that encourages participating companies and organizations to help create a global framework for realizing sustainable growth and take action as a good member of society by demonstrating responsible and creative leadership. Over 13,000 companies and organizations have signed on.

To spur greater contributions from LEAD companies, the UNGC clarified the LEAD company certification standards. As a result, 34 companies around the world have been certified as LEAD companies, including Sumitomo Chemical and one other Japanese company.

LEAD Company Certification Standards

- Participate in at least two UNGC action platforms, contribute to UNGC activities on an ongoing basis, and clearly demonstrate leadership in line with the Ten Principles and Global Goals
- Release an annual sustainability report detailing the progress of initiatives for the Ten Principles

Note: Regarding our initiatives for the UNGC's Ten Principles, this Data Book serves as our annual activity report (Communication on Progress (COP)). We are working to be highly transparent with regard to disclosure and reference the UNGC's advanced-level standards.

Participation in Initiatives

In 2018, we continued to participate in two action platforms: Breakthrough Innovation for the SDGs and Pathways to Low-Carbon and Resilient Development. In Breakthrough Innovation for the SDGs, we participated in a workshop aimed at building a "Framework for Breakthrough Impact on the SDGs through Innovation," and deepened our alliances with various companies. In Pathways to Low-Carbon and Resilient Development, we participated in the Ambition Loop, which is a collection of case studies about public-private cooperation to create zero-carbon economic growth, and introduced our own activities.

In addition, in September 2018, we participated in the 10th annual UN Private Sector Forum held in New York City, and conducted networking and information sharing activities.

The Ten Principles of the UN Global Compact

Human Rights

Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
Principle 2: make sure that they are not complicit in human rights abuses.

Labour

Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
Principle 4: the elimination of all forms of forced and compulsory labour;
Principle 5: the effective abolition of child labour; and
Principle 6: the elimination of discrimination in respect of employment and occupation.

Environment

Principle 7: Businesses should support a precautionary approach to environmental challenges;
Principle 8: undertake initiatives to promote greater environmental responsibility; and
Principle 9: encourage the development and diffusion of environmentally friendly technologies.

Anti-Corruption

Principle10: Businesses should work against corruption in all its forms, including extortion and bribery.

The Ten Principles of the UN Global Compact (from the Official Website of the UN Global Compact)

https://www.unglobalcompact.org/what-is-gc/mission/principles

Our WBCSD* Activities

In the World Business Council for Sustainable Development (WBCSD), we partnered with member companies in the chemical sector to participate in various initiatives.

In 2018, we participated in formulating the Chemical Sector SDG Roadmap, which organizes sustainability-related fields and issues pertaining to the chemical industry using the SDG framework with the aim of realizing sustainability. (Participating companies and organization: AkzoNobel, Covestro, The Dow Chemical Company, Evonik Industries AG, SABIC, DSM, Solvay, Mitsubishi Chemical HD, Sumitomo Chemicals, The American Chemistry Council (ACC), The European Chemical Industry Council (Cefic))

WBCSD | Chemical Sector SDG Roadmap

https://www.wbcsd.org/Programs/People/Sustainable-Development-Goals/Resources/Chemical-Sector-SDG-Roadmap

In addition, in 2019, we participated in the formulation of the WBCSD TCFD Chemical Sector Guidance. The guidance explains how to make effective disclosures in the four frameworks of the TCFD for the chemical sector and details the fundamental elements needed to analyze scenarios. (Participating companies: BASF, DSM, Solvay, AkzoNobel, Sumitomo Chemical)

WBCSD | The TCFD Chemical Sector Preparer Forum Report

https://www.wbcsd.org/cfbcso

* WBCSD:
This organization was established to advocate for business sector views on sustainable development. The group weighs in at international conferences, such as the World Economic Forum, the B20 Summit, and the Conference of the Parties of the UNFCCC.

Participation in Initiatives

Initiatives for TCFD recommendations

Sumitomo Chemical has viewed global climate change as one of the highest-priority challenges facing society, and to solve this problem, Sumitomo Chemical is actively working to reduce greenhouse gases by taking advantage of the technology we have cultivated as a diversified chemical company. We hope to secure the trust of society by using the framework of TCFD recommendations and actively communicating our efforts, with the recognition that disclosing information on addressing climate change reflects the demands of the current era.

■ Our Efforts through Participation in External Initiatives

June 2017	Supported TCFD recommendations concurrently with their publication
From August to December 2018	Joined in the TCFD Study Group led by the Ministry of Economy, Trade and Industry (METI) This group studied the way in which Japanese companies disclose information to evaluate their strengths. December 2018: METI issued TCFD guidance
Since December 2018	Joined WBCSD* TCFD Preparer Forum July 2019: WBCSD issued TCFD chemical sector guidance * World Business Council for Sustainable Development
Since May 2019	Joined the TCFD consortium established by Japanese industrial and financial communities

Participating in the New Global Environmental Initiative the Alliance to End Plastic Waste

Sumitomo Chemical joined the Alliance to End Plastic Waste (AEPW), launched on January 2019, as one of the founding members. The AEPW is a new alliance of global companies formed to advance solutions to eliminate plastic waste in the environment, especially in the ocean.

The AEPW is a not-for-profit organization composed of global companies across the entire spectrum of industries associated with the plastics lifecycle, from production through waste processing.

Given that plastics are useful materials widely used in every part of modern life, the AEPW will undertake a number of initiatives in collaboration with such global organizations as the World Business Council for Sustainable Development to minimize and manage plastic waste in the environment. The goal is to invest $1.5 billion over the next 5 years, mainly in the following four key areas.

Four Key Areas where the AEPW Pursues Solutions:

- Infrastructure development to collect and manage waste and increase recycling
- Innovation to advance and scale new technologies that make recycling and recovering plastics easier and create value from all post-use plastics
- Education and engagement of governments, businesses, and communities to encourage action
- Clean up of concentrated areas of plastic waste already in the environment, particularly the major conduits of waste, like rivers, that carry land-based plastic waste to the sea

Sumitomo Chemical believes that one of the greatest challenges facing our society is growing environmental risks resulting from plastic waste. Sumitomo Chemical's participation in the AEPW will prompt the Company to further accelerate its efforts to help end plastics waste in cooperation with other participating companies that share the same aspirations.

Participation in Initiatives

Our ICCA* Activities

Sumitomo Chemical participated in the Global Working Group on Energy and Climate Change of the International Council of Chemical Associations (ICCA). We contributed to joint international research related to helping reduce GHG emissions through chemical products and technologies. We also worked to promote the spread of the results of the research.

In addition, we also participate in the leader group for chemical substance policy and health. We conduct surveys related to regulatory trends around the world and mechanisms for relaying information on chemical substances contained in products. We also cooperate in promoting widespread product stewardship in each participating country, focusing on those in Asia. Furthermore, we participated in a task force on plastic waste problems and in discussions based on sound science related to problems surrounding microplastics and plastic substitutes.

* ICCA:
This organization was established to harmonize the strategies of chemical industry associations and councils around the world through dialogue and cooperation. As the principal representative of the chemical industry, ICCA presents opinions to international organizations about key topics shared by its members and various activities of the chemical industry.

Our WEPs Activities

In 2013, the Group (under the President's name) endorsed the "Women's Empowerment Principles" (WEPs), which were formulated through collaboration between United Nations Global Compact (UNGC) and UN Women. Since 2015, we have participated in the annual WEPs forum. Furthermore, we have engaged in global efforts aimed at promoting the WEPs in Japan and overseas, such as participating in the Global Compact Network Japan's (UNGC Japan's local network) WEPs Subcommittee as a leading company. In addition, we have used the Gap Analysis Tool, a self-analysis mechanism provided by the UN WEPs Secretariat and, based on the results of the analysis, are working to improve various measures.

At the 2018 annual WEPs forum, the Sumitomo Chemical Group's regional headquarters president of the U.S. region was featured as a panelist and gave a presentation on measures the Company has taken to promote the advancement of women. Said president was also invited to and participated in the CEO roundtable held at the UN Headquarters in March 2019 in advance of the annual WEPs forum. There he introduced the Company's activities and called attention to One Action for Goal 5. In addition, in conjunction with International Women's Day (March 8), to raise greater awareness among every employee about our efforts to promote the advancement of women, we posted about the Company's WEPs-related efforts on the internal intranet and notified all employees. In connection with this, we conducted PR activities, such as handing out cookies featuring the Goal 5 logo to the Tokyo Head Office employees as well as external visitors.

Cookies featuring the Goal 5 logo that were handed out to employees and visitors on International Women's Day

Communication with Stakeholders

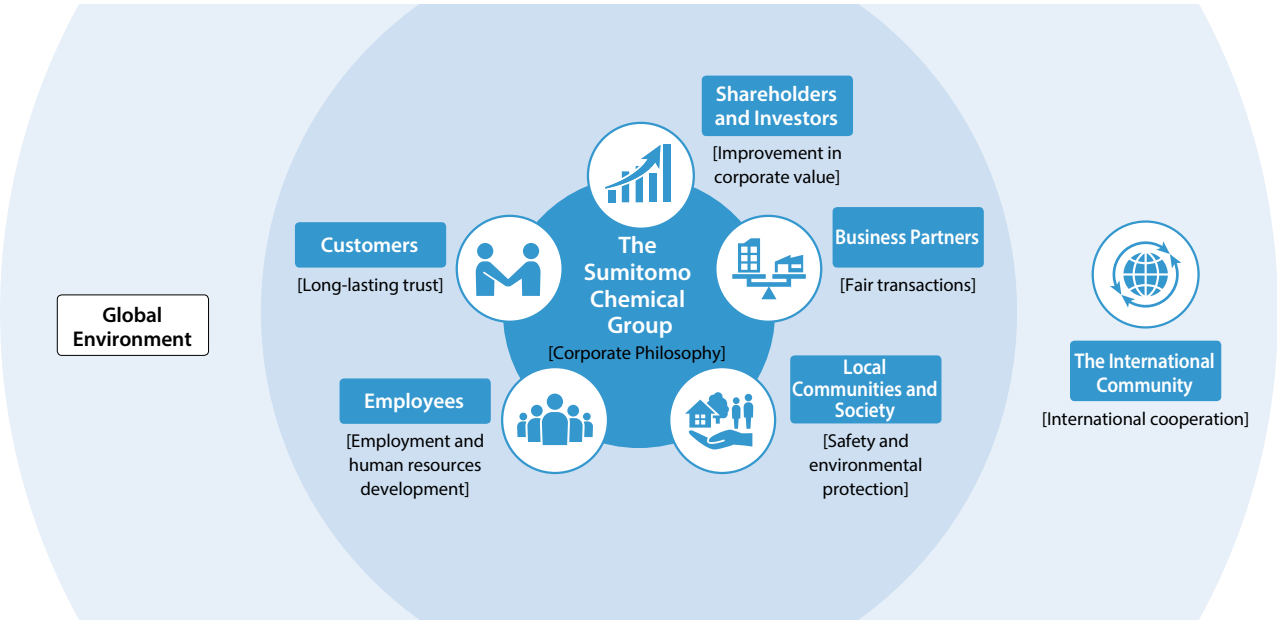
Basic Policy

Principle 4 of the Sumitomo Chemical Group's Basic Principles for Promoting Sustainability states, "We are committed to work closely with various stakeholders through promoting spontaneous disclosure of information and open dialogue on the targets of our sustainability promotion initiatives and the progress of their implementation." Based on Principle 4, the Group separates communication with shareholders into the following two categories.

(1) Disclosure	(2) Dialogue
We disclose necessary information and report on the progress of various initiatives. Furthermore, we identify the needs of society as appropriate and take external evaluations into consideration to improve our current situation while ensuring the propriety of our disclosure.	In addition to proactive disclosure, we engage in two-way communication with various stakeholders, or, in other words, hold dialogues. Based on the insights gained from those dialogues, we work to make improvements and implement new initiatives.

From a disclosure and dialogue perspective, the Group will continue to fulfill its responsibilities to all its stakeholders and work to enhance communication with everyone through a variety of efforts, which include not just business activities but also initiatives that contribute to society and regional dialogues, with consideration given to the international community and global environment.

■ Stakeholder Engagement



Communication with Stakeholders

Communication Opportunities with Each Stakeholder

Stakeholders	Sumitomo Chemical Group's Responsibility	Methods
Shareholders and Investors	We promote scheduled, effective and strategic communication with shareholders and investors in regard to our management policies, business strategies, and earnings trends. Through this communication, we fulfill our responsibility to disclose information to shareholders with the aim of maintaining and improving the market's trust in Sumitomo Chemical. By promoting an accurate understanding of our operations, we support appropriate share price formation and improvement in corporate value.	• Conducting general meetings of shareholders • Holding management strategy briefings and business strategy briefings • Holding conference calls • Holding briefings for individual investors • Holding one-on-one interviews with analysts • Disclosing information via the *Annual Report*, *Investors' Handbook*, *Sustainability Data Book*, and other publications • Providing information on the Company's website
Customers	We are working to supply high-quality products and services that satisfy customers' needs and ensure safety in their use, thereby building long-lasting relations of trust with customers.	• Engaging in communication through operating activities and supporting quality assurance • Providing information through various media including the Company's website • Offering customer support through consultation services
Business Partners	We are committed to building progressive and mutual relations with business partners based on the Basic Procurement Principles. In addition, we conduct fair and transparent transactions, promote responsible procurement activities, and encourage all our business partners to engage in CSR activities.	• Engaging in communication through purchasing activities • Monitoring and feedback that draws on the *CSR Deployment Guidebook* and *check sheets* • Providing contact points for inquiries
Employees	We are working to create human resources development systems and a workplace environment in which individual employees can make the most of their abilities, while respecting the well-being and diversity of employees. Also, the Company and its labor union will maintain a favorable relationship that has been built based on mutual understanding and trust.	• Conducting central and regional labor-management meetings • Convening the Labor-Management Committee for Diversity and Work-Life Balance • Providing various training programs • Communicating via in-house magazines and internal network
Local Communities and Society	In the belief that its business must be based on mutual prosperity with society, we are building and maintaining good relationships with local communities by conducting activities to meet local needs while aiming to enhance communications, and ensure the safety of the region and preservation of the environment.	• Publishing the *Report on the Environment and Safety (at all worksites)* • Publishing local PR magazines • Hosting local dialogues • Holding science workshop classes • Engaging in local cleanup activities

Governance

Contents

30 Corporate Governance
40 Internal Control
42 Risk Management
45 Compliance
48 Internal Reporting System (Speak-Up Reporting System)
53 Anti-corruption
56 Responsible Care
64 Information Security
67 Governance: Supplementary Data
67 1 Corporate Governance
68 2 Compliance
68 3 Tax Transparency

Contributing to
the SDGs through Governance

Corporate Governance

Corporate Governance Initiatives

Sumitomo Chemical has been committed to continual efforts to improve corporate governance. In response to demands for further raising the governance level, including application of the Corporate Governance Code, we are taking measures to achieve the optimal governing structure and decision-making processes, while remaining faithful to the intent and spirit of the Code.

Basic Stance

Sumitomo Chemical cherishes deeply the Sumitomo Spirit which has been passed down through generations over nearly 400 years, the basic teaching of which is, among others, not to seek its own interests alone, but to contribute to society through its business activities. In accord with this business credo, the company strives to take on challenges constantly of creating new value by capitalizing on its proprietary technologies toward achieving the company's sustained growth while at the same time cultivating corporate culture full of vigor and growing as a company that earns trust from the public at large. Recognizing that highly effective corporate governance is vital to attaining these ends, the company keeps working to further enhance its corporate governance in accordance with the following policies and principles, centering particularly on closer cooperation with shareholders and various other stakeholders, faster decision-making, proper oversight of business execution, enhanced systems of compliance and internal control, and active dialogue with stakeholders.

- Sumitomo Chemical not only shall respect the rights of shareholders, but shall endeavor to provide an environment where shareholders can exercise their rights smoothly and also to ensure the effectively equal treatment of shareholders.
- Recognizing that cooperation with various stakeholders, including employees, customers, business partners, creditors, and local communities, is essential to sustained growth, Sumitomo Chemical shall proactively work to fulfill its corporate social responsibility and strive to cultivate corporate culture of a company that can be trusted by society.
- As part of efforts to build a foundation for constructive dialogue with stakeholders, Sumitomo Chemical shall endeavor to provide information that is highly reliable and useful to recipients.
- Sumitomo Chemical's Board of Directors shall fulfill its role and mission properly, based on their fiduciary responsibilities and accountability to shareholders and recognizing the important role of Independent Outside Directors & Auditors, through such measures as presenting appropriate corporate management policies and business strategies that have taken into account changing socioeconomic conditions, and conducting highly effective oversight over the execution of business.
- Sumitomo Chemical shall endeavor to promote constructive dialogue with shareholders with the aim of seeking to attain the company's sustained growth and to enhance corporate value in the medium to long term.

Sumitomo Chemical Corporate Governance Guidelines

https://www.sumitomo-chem.co.jp/english/company/governance.html

Measures to Date for Strengthening Corporate Governance

Date		Major Initiatives	Board Composition	Appointment of Board Members	Executive Remuneration	Other
2003	June	Introduced Executive Officer system (reduced number of Directors from 25 to 10)	●			●
	July	Established Compliance Committee				●
2004	June	Eliminated system of retirement benefits for Directors and Corporate Auditors			●	
2007	May	Established Internal Control Committee				●
	September	Established Remuneration Advisory Group			●	
2010	September	Established Nomination Advisory Group		●		
2011	November	Drew up standards for appointment of independent outside directors	●	●		
2012	June	Appointed 1 outside director	●			
2015	June	Selected 3 outside directors (increased by 2)	●			
	October	Established Remuneration Advisory Committee in place of Remuneration Advisory Group			●	
		Established Nomination Advisory Committee in place of Director Nomination Advisory Group		●		
2016	December	Formulated Sumitomo Chemical Corporate Governance Guidelines				●
2018	June	Selected 4 outside directors (including one woman) (increased by 1)	●			

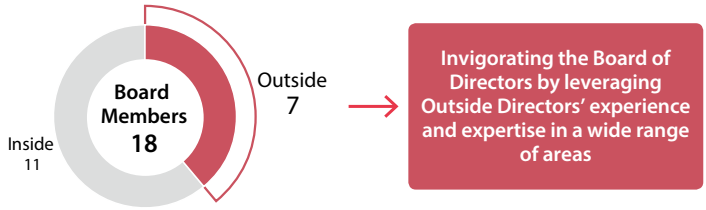
Corporate Governance

Recent Initiatives to Strengthen Corporate Governance

Further Strengthening of the Board of Directors' Oversight and Advisory Functions

With the goal of further strengthening the Board of Directors' oversight and advisory functions to increase the transparency and objectivity of management, in June 2018 we added one outside director, increasing the total number to four (including one female director). As a result, of the 18 total members of the Board of Directors and the Board of Corporate Auditors, seven are outside members. Outside Directors have experience in a wide range of fields, including corporate management, economics, government, the legal profession, and accounting. We will continue to further revitalize the Board of Directors, leveraging these perspectives.

■ Board Composition (As of July 1, 2019)



	Inside	Outside
Director	9	4 (including one female director)
Corporate Auditor	2	3

Changes in the Operation of the Board of Directors

After the implementation of Japan's Corporate Governance Code, we changed the operation of the Board of Directors to place greater emphasis on deliberating management policies, business strategy, and important matters of business execution, and on oversight of that execution. Specifically, we are enhancing reporting on the status of business execution for each Executive Officer. Depending on the content of each report, we have established several reporting methods. For example, for large-scale projects, we share details with the Board of Directors at an early stage and discuss the direction of the projects. In this way, meaningful discussions are held that contribute to sustainable development and rapid and decisive decision-making.

Utilizing Outside Director Roles

To make maximum use of the oversight and advisory functions of the Outside Directors, it is essential to minimize asymmetries in information between inside and Outside Directors. The measures including those listed below have been implemented to revitalize board deliberation.

■ Measures to Make Maximum Use of Outside Director Functions

Specific Measures	Frequency	Description
Briefings prior to Board of Directors meetings	Every month	Outside Directors gather together in advance of Board of Directors meetings to receive a detailed briefing from the relevant departments, along with a Q&A session, on issues to be discussed at the Board of Directors meeting.
Reporting on issues discussed in internal meetings	Every month	Explanations are provided on the points of discussion at internal meetings, and on how the views expressed at the meetings are reflected in the proposal before the Board, for issues such as the launch of a business or an acquisition.
Reporting on important matters to the Board of Directors at an early stage	In each case	Important matters, such as management direction, M&A transactions, or large-scale projects, are reported to the Board of Directors at an early stage of consideration so that the Board's intentions can be reflected.
Outside Directors & Corporate Auditors meetings	Once a year	Based on such materials as the results of surveys on the effectiveness of the Board of Directors, meetings consisting of the Chairman of the Board, the President and the Outside Directors and Corporate Auditors are held to enable a frank exchange of views.
Meetings with Outside Directors and Corporate Auditors only*1	Twice a year	After Board of Directors meetings, meetings consisting of only Outside Directors and Corporate Auditors are held to exchange opinions freely.
Meetings between Outside Directors and Corporate Auditors and major sectors*1	Six times a year	After Board of Directors meetings, meetings are held between the executives and employees of the department in charge of the Rotation Report*2 for that Board of Directors meeting and the Outside Directors and Corporate Auditors, enabling them to exchange opinions freely and honestly.
Visits to production sites	Twice a year	Visits are made to our production sites both inside and outside Japan.

*1 Beginning in FY2019 *2 Rotation Report: Comprehensive and systematic reporting over a significant amount of time for each sector.

Corporate Governance

Assessing the Effectiveness of the Board of Directors

Assessment Method

Sumitomo Chemical's Board of Directors carries out analyses and appraisals regarding the effectiveness of the Board of Directors through exchanges of opinions at meetings attended by Outside Directors, Outside Corporate Auditors, the Chairman of the Board, and the President, as well as at Management Meetings attended by inside directors, while taking into account survey results from all Directors and Corporate Auditors and opinions expressed by the Board of Corporate Auditors. Based on these opinions, the Board of Directors works to improve its effectiveness every year.

Assessment for Fiscal 2018 and Improvements over the Previous Fiscal Year

The effectiveness of the Board of Directors is assessed from a variety of perspectives, including its composition, its operation, the deliberations and reporting at the Board of Directors meetings, its oversight of business execution, and the operations of the non-mandatory Nomination Advisory Committee and Remuneration Advisory Committee. At the end of fiscal 2018, we confirmed that improvements were steadily being made each year, and that the level was generally favorable. We also confirmed that we will continue various initiatives aimed at increasing corporate value going forward.

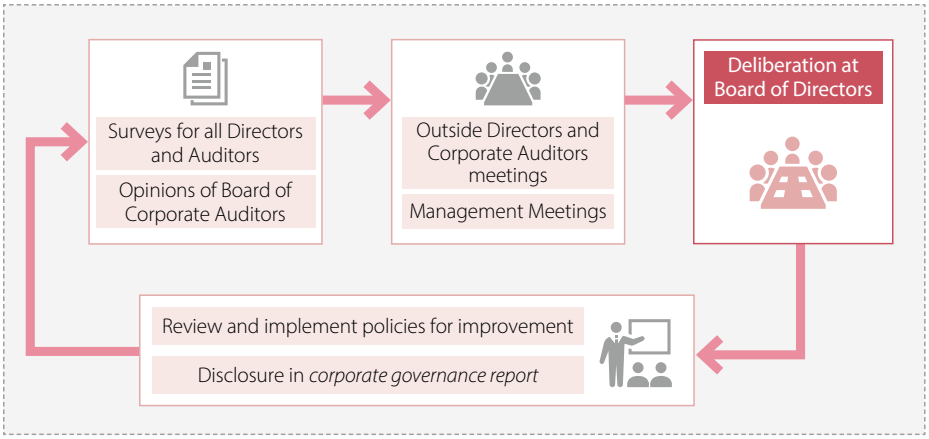
Initiatives Addressing Areas for Improvement from the Previous Fiscal Year

- Strengthening supervision through reporting and discussions on important matters relating to Group companies
- Holding discussions on long-term strategies throughout the drafting of the new Corporate Business Plan
- Further sharing of internal discussions with Outside Directors and Corporate Auditors

Toward the Future

We will again discuss the roles of inside and Outside Directors and Corporate Auditors and take the following measures. In order to further revitalize the activity of the Board of Directors, we will allot more time for Board of Directors meetings to allow more room for discussion, provide detailed explanations of the background of internal discussions on deliberations and other matters, and further clarify the points of discussion in the explanations. In order for Outside Directors and Corporate Auditors to properly fulfill their roles and duties, we will also provide meetings consisting solely of independent Outside Directors and Corporate Auditors and forums where they can frankly exchange their opinions with a wide range of employees.

PDCA Cycle for Further Improving the Effectiveness of the Board of Directors



Corporate Governance

Visit to Production Sites by Outside Directors and Corporate Auditors

In order for Outside Directors and Corporate Auditors to improve their understanding of our business, Sumitomo Chemical provides them with opportunities to visit our production sites both inside and outside Japan each year. In fiscal 2018, they visited the Ehime Works and a Group company in Saudi Arabia. They have expressed the opinion that this initiative is extremely valuable, enabling them to get a deeper understanding of our business.

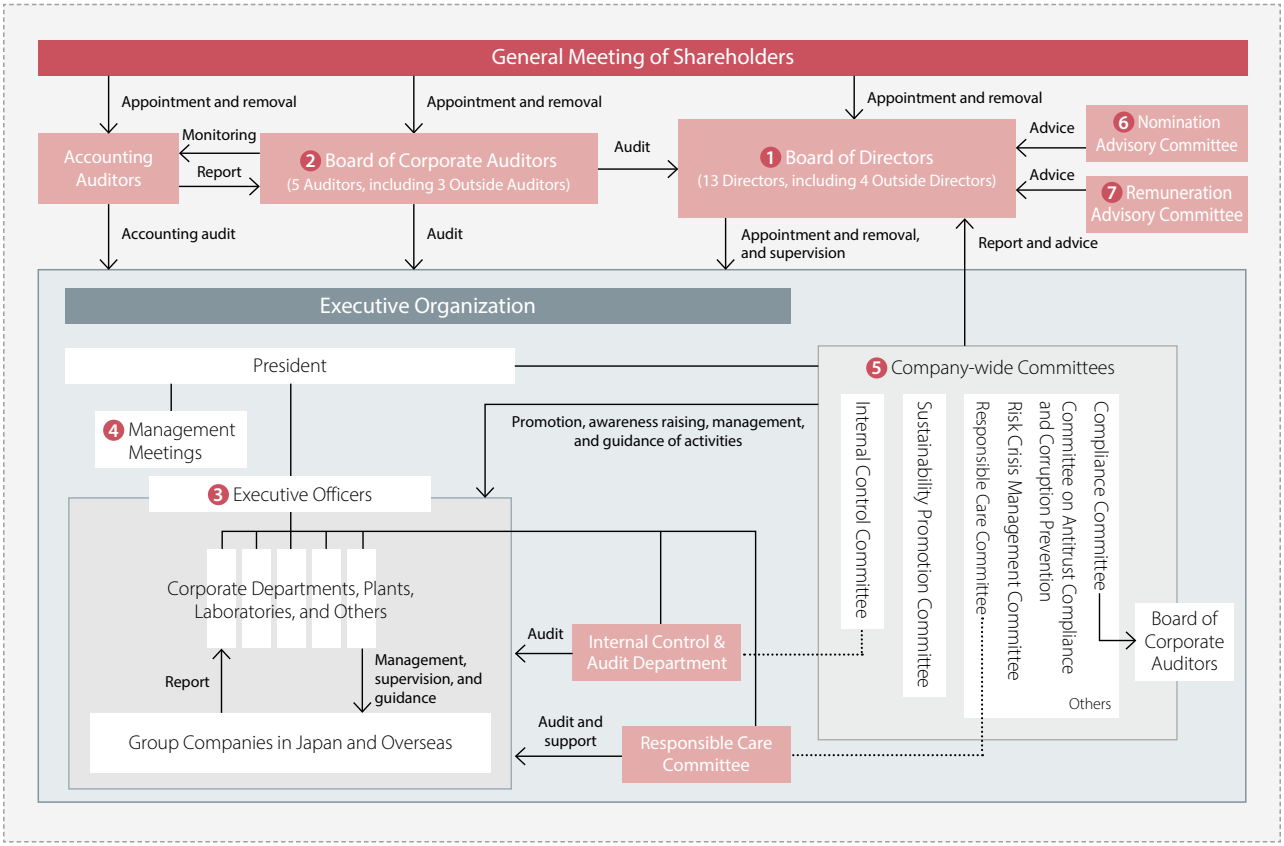
Visit to Ehime Works in September 2018

Visit to a Group company in Saudi Arabia in February 2019

Corporate Governance

Current Corporate Governance Organization

Corporate Governance Organization (As of July 1, 2019)



Organizational Structure

1 Board of Directors

The Sumitomo Chemical Board of Directors decides important matters concerning the company's management, including management policy and business strategies, in accordance with the law, the Articles of Incorporation, and the Board of Directors' own rules. It also receives reports from Directors and others on the performance of duties, financial situation, and operating results, and oversees the performance of duties by each Director.

To ensure the effectiveness of the Board of Directors, assessments and analyses are conducted annually and the results are followed up on in subsequent meetings. In accordance with the Nomination Advisory Committee's advice, candidates for Director are nominated by the Board of Directors and are elected once a year at the General Meeting of Shareholders.

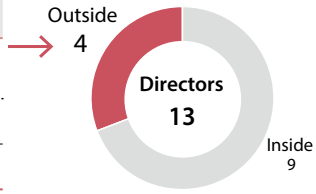
Overview of the Board of Directors

Chairperson	Chairman of the Board	The Chairman of the Board does not concurrently serve as Executive Officer.
Number of Persons	13	
Frequency	Monthly in principle	Special meetings of the Board of Directors are convened as needed.
The Term of Office of Directors	One year	The term of office of Directors is one year, in order to establish clear administrative responsibility and roles for Directors.

Breakdown of 13 Directors

	Male	Female	Total
Inside	9	0	9
Outside*	3	1	4
Total	12	1	13

* Independent Outside Directors having no conflicts of interest with general shareholders



Corporate Governance

❷ Board of Corporate Auditors

We have a Corporate Auditor system, with a Board of Corporate Auditors consisting of five Corporate Auditors, including three Outside Corporate Auditors. The Corporate Auditors and the Board of Corporate Auditors play a vital role in our corporate governance by auditing the performance of duties by Directors in accordance with the law and the Articles of Incorporation. The Board of Corporate Auditors meets monthly as a rule and strives to obtain timely information, including important compliance-related information.

Standing Corporate Auditors and Outside Auditors attend meetings of the Board of Directors and the Board of Corporate Auditors. In conducting their audits, they receive reports and explanations as needed from the Internal Control & Audit Department, operating divisions, and accounting auditors. In addition, Standing Corporate Auditors attend meetings of the Internal Control Committee and other important company meetings.

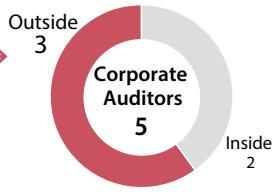
The results of audits and the objective views of Outside Auditors are appropriately reflected in internal audits, corporate auditors' audits, and accounting audits, so as to raise the effectiveness and efficiency of auditing.

The Corporate Auditors' Office has been established with staff dedicated to providing assistance in auditing functions under the direction of Corporate Auditors.

Breakdown of 5 Corporate Auditors

Inside	2
Outside*	3

* Independent Corporate Auditors having no conflicts of interest with general shareholders



Management Organizations for Decision-making, Execution, and Auditing

❸ Executive Officers

We have appointed Executive Officers to expedite the implementation of business operations. Executive Officers are responsible for carrying out operations in accordance with the policies adopted by the Board of Directors. The term of office for Executive Officers is one year.

Breakdown of 36 Directors

	Male	Female	Total
Japanese	32	1	33
Non-Japanese	3	0	3
Total	35	1	36

❹ Management Meetings

Management Meetings support the decision-making of our management by providing a forum for deliberation on such vital matters as corporate strategy and capital investment, including matters to be deliberated in the Board of Directors and reports to be made to the Board. Management Meetings consist of the Executive Officers who are in charge of or who supervise key management functions, the Standing Corporate Auditor, and the Chairman of the Board. In principle, the meetings are held 24 times a year.

Corporate Governance

5 Committees

We have established internal meetings (committees) to deliberate on important matters concerning the management of the company, and the Group from a broad and diverse range of viewpoints. The content of these meetings is reported to the Board of Directors as needed, and the committees receive instructions from the Board of Directors in an effort to enhance business execution and oversight functions. Several of these committees are attended by the Standing Corporate Auditor, who serves as an observer, including the Internal Control Committee, the Compliance Committee, and the Responsible Care Committee.

We regard the promotion of sustainability as a core issue for the entire Group. In 2018, we expanded the CSR Promotion Committee and established a new Sustainability Promotion Committee to further strengthen our sustainability initiatives. The Responsible Care Committee also examines specific measures to address climate change and other environmental issues.

Name	Purpose	Number of Meetings in Fiscal 2018
Internal Control Committee	Deliberates on measures to build and improve a proper internal control system	3
Sustainability Promotion Committee	Comprehensively reviews the Group's sustainability promotion activities and examines the Group's contributions to sustainability at a high level, with the aim of accelerating the Group's efforts to solve societal issues, such as the SDGs.	2
Responsible Care Committee	Deliberates on annual policies, Corporate Business Plans, and specific measures, and analyzes and evaluates the results of measures to address climate change and other environmental issues.	1
Risk Crisis Management Committee	Deliberates on policies for specific risks and crises, such as earthquakes, wind and flood damage caused by extreme weather, pandemics, and breakdowns in public security.	1*
Compliance Committee	Deliberates on the Group's compliance policies and action plans, and the status of the operation of the compliance system, including responses to internal reports and the results of activities.	1

* Subcommittee meetings on specific key themes

Corporate Governance

Executive Nomination and Remuneration

6 Nomination Advisory Committee

The Nomination Advisory Committee was established in October 2015 to act as an advisory body to the Board of Directors on the selection of top management and on the appointment of directors and auditors. The committee is made up of Outside Directors and Sumitomo Chemical representative directors. Regular meetings are held annually and ad hoc meetings are convened as needed. With a majority of members being Outside Directors, the committee advises the Board of Directors on the appointment of officers, with the purpose of ensuring more transparency, fairness, and openness in the process of appointing officers and bringing greater clarity to the process.

7 Remuneration Advisory Committee

The Remuneration Advisory Committee was established in October 2015, as an advisory body to the Board of Directors on the remuneration system, remuneration levels, and other related matters, for top management and Directors. The committee is made up of Outside Directors and Sumitomo Chemical representative directors. It holds regular meetings annually and convenes ad hoc meetings as needed. With a majority of members being Outside Directors, the committee advises the Board of Directors in deciding the executive officer remuneration system and levels, in order to achieve greater transparency, fairness, and openness.

Directors' and Corporate Auditors' Remuneration in Fiscal 2018

(Millions of yen)

Title	Total	Breakdown of Remuneration		Number of people
		Basic Remuneration	Bonuses	
Directors (excluding Outside Directors)	728	553	175	10
Standing Corporate Auditors	78	78	—	2
Outside Directors and Corporate Auditors	108	93	14	9

Composition of the Nomination Advisory Committee and the Remuneration Advisory Committee and Attendance Status (Meetings Attended / Meetings Held)

		Nomination Advisory Committee	Remuneration Advisory Committee
Chairman of the Board	Osamu Ishitobi (Chairman)	5/5 times (100%)	2/2 times (100%)
Representative Director & President	Masakazu Tokura	5/5 times (100%)	2/2 times (100%)
Outside Director	Koichi Ikeda	5/5 times (100%)	2/2 times (100%)
Outside Director	Hiroshi Tomono	5/5 times (100%)	2/2 times (100%)
Outside Director	Motoshige Itoh	5/5 times (100%)	2/2 times (100%)
Outside Director	Atsuko Muraki	5/5 times (100%)	2/2 times (100%)

The Committee Members of the Nomination Advisory Committee and the Remuneration Advisory Committee in Fiscal 2019	
Chairman of the Board	Masakazu Tokura (Chairman)
Representative Director & President	Keiichi Iwata
Outside Director	Koichi Ikeda
Outside Director	Hiroshi Tomono
Outside Director	Motoshige Itoh
Outside Director	Atsuko Muraki

Major Activities in the Nomination Advisory Committee and the Remuneration Advisory Committee in Fiscal 2018

Nomination Advisory Committee	• Discussions on candidates to be the next President • Discussions on officers for fiscal 2019 • Discussions on the Counselor system
Remuneration Advisory Committee	• Discussions on revising the policy for determining the remuneration of executive officers • Discussions on how basic remuneration should change • Discussions on basic remuneration for fiscal 2018 • Discussions on the calculation method for the bonuses of officers upon adoption of IFRS • Discussions on the payment of bonuses to officers for fiscal 2018

Corporate Governance

Policies and Procedures for Determining Remuneration of Senior Management and Directors

1. Basic Policy for Remuneration of Directors, etc.

(1) The remuneration of senior management and directors (hereinafter "Directors etc.") shall consist of basic compensation and bonuses.

(2) Basic compensation is designed to serve as an incentive for the actions of Directors, etc. to contribute to the company's sustainable growth, rather than aiming for short-term or sub-optimal effects.

(3) The scale of bonuses shall largely reflect the company's consolidated financial results for a fiscal year in order to heighten incentives to achieve the annual targets of business plans.

(4) Remuneration shall be set at levels which are designed to be objectively competitive to attract and retain outstanding talent while taking into consideration such factors as the scale and content of the company's business. Based on surveys by a third-party organization and other materials, such levels shall be checked annually for objective appropriateness.

2. Mechanisms of Each Remuneration Element

(1) Basic Compensation

The level of basic compensation shall be determined based on the policy described in section 1(4) above.

While basic compensation for each year shall be fixed, the company will adopt a mechanism whereby basic compensation levels would be changed in the event that the company's position has changed, in terms of the company's size, earnings capacity, and outside evaluations, from a comprehensive and medium- to long-term perspective.

As main indicators for determining whether there has been a change in the company position, the company will apply the following: ① in terms of the company's size, sales revenue, total assets and market capitalization, ② in terms of earnings capacity, net income (attributable to the parent company), ROE, ROI and D/E ratio, and ③ in terms of outside evaluations, credit ratings and the ESG index selected by the GPIF (Government Pension Investment Fund).

The amounts to be paid to each person will be determined in accordance with the base amount set for each position.

(2) Bonuses

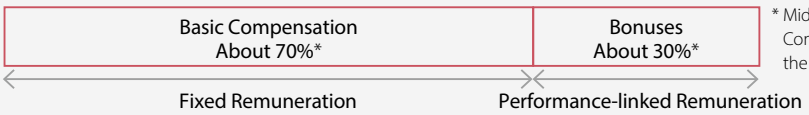
Bonuses shall be paid on the condition that performance for that fiscal year exceeds a particular level and shall be determined based on the bonus calculation formula (performance indicator x coefficient).

In order to reflect the current earnings capacity of the relevant business year (including financial activities) in the value of bonuses, the company will use the combined value of consolidated core operating profit and financial profit and loss as the performance indicator in the bonus calculation formula. In addition, the company will set the coefficient of the calculation formula so that it will get larger as the position of a person gets higher.

(3) Percentages of Fixed Remuneration (Basic Compensation) and Performance-linked Remuneration (Bonuses)

The company will set the bonus calculation formula such that the bonuses of Directors (excluding Outside Directors) accounts for roughly 30% of total remuneration when the consolidated performance goal (core operating profit) for the latest fiscal year of the Corporate Business Plan (fiscal years 2019 to 2021) is achieved.

Conceptual Diagram of the Remuneration of Directors



* Mid-term management plan (FY2019-2021) Composition of Directors' remuneration at the time the goal is achieved in the final year

Based on the factors for determination described below, the company will change the amount of remuneration when it is determinable that the company's position has changed from a comprehensive and medium- to long-term perspective.

Factors for Determination	Major Indicators
Company's size	Sales revenue
	Total assets
	Market capitalization
Earnings capacity	Current income (belonging to the parent company)
	ROE
	ROI
	D/E ratio
Outside evaluations	Credit ratings
	ESG index selected by GPIF

* The amount to be paid to each person will be determined by each position.

The amount of bonuses will be determined by the calculation formula based on the following consolidated performance indicator.

Consolidated performance indicator	Core operating profit plus financial profit and loss
Calculation formula	Consolidated performance indicator X Coefficient*1

*1 The Company will arrange so that the higher the position, the larger the coefficient will be.

*2 If a consolidated performance indicator does not exceed a particular level, bonuses will not be paid.

Corporate Governance

3. Procedures for determining remuneration of Directors, etc.

The remuneration amount of Directors shall be set at a level not higher than the upper limit for total remuneration prescribed by the resolution of the 125th General Meeting of Shareholders, held on June 23, 2006 (i.e. 1 billion yen or less per year).

Furthermore, the specific amount of remuneration for each Director or other officer shall be determined by the Chairman of the Board, as authorized by the Board of Directors, based on the standard advised by the Remuneration Advisory Committee.

Internal Control

Status of Development of Internal Control System

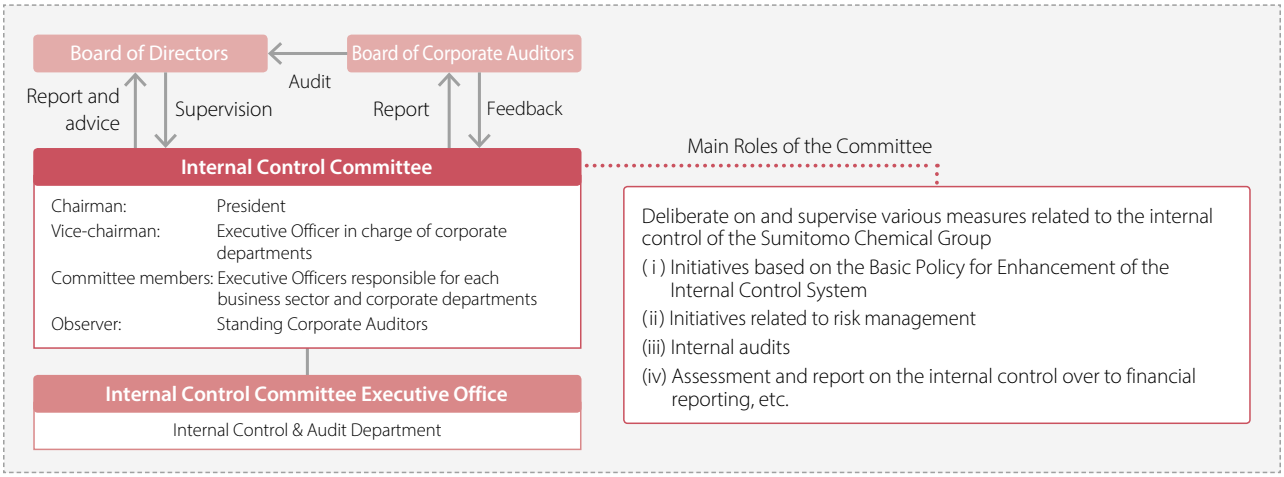
Sumitomo Chemical established its Basic Policy for Enhancement of the Internal Control System by a resolution of the Board of Directors, creating a system to ensure the appropriateness of its operations as stipulated in the Companies Act.

As stated in the basic concept of this policy, we recognize that the development of an internal control system is a necessary process for maintaining a sound organization and should be actively utilized to achieve business objectives. To continuously enhance our internal control system, we have formed the Internal Control Committee, which is chaired by the President and consists of Executive Officers responsible for and in charge of each business sector and corporate department. Meetings of the committee are held three times a year, with additional meetings held as needed.

At Sumitomo Chemical, the Internal Control Committee plays a central role in discussing various measures based on the basic policy described above. The committee also operates a PDCA cycle by monitoring the implementation status of those measures, and constantly inspects and strengthens the Group's internal control system in response to changes in the Group's business and operating environment, ensuring that the Group's internal control system can function effectively.

The Standing Corporate Auditors are involved in the committee as observers, and the committee's operations are conducted by the Internal Control & Audit Department, which is separated from other business activities. Summaries of the matters covered in the committee are reported to the Board of Corporate Auditors after each meeting. These summaries are then reported to the Board of Directors for deliberation.

Organization of the Internal Control Committee



Basic Policy for Enhancement of the Internal Control System

https://www.sumitomo-chem.co.jp/english/company/governance/

Internal Control

Timely Disclosure

The Corporate Communications Department is in charge of working in conjunction with other relevant departments to continually disclose necessary information in a timely manner. In addition to items requiring disclosure under Japan's Financial Instruments and Exchange Act and under stock exchange regulations, we also actively disclose information that may be considered material to the decisions of investors.

We endeavor to build stronger relationships of trust with society and capital markets by publishing documentation in accordance with the rules stipulated by the security exchanges in Japan, including reports on the company's corporate governance philosophy and system, and notifications showing that Outside Directors and Corporate Auditors have no existing conflicts of interest with general shareholders. These documents are available on the website of Japan Exchange Group Inc.

Corporate Governance Report

https://www.sumitomo-chem.co.jp/english/company/files/docs/governance_report_e.pdf

Internal Audits

As part of its internal control monitoring activities, Sumitomo Chemical has established a dedicated organization within the company to conduct internal audits, in addition to audits by the Corporate Auditor and Financial Statement auditors. The Internal Control & Audit Department conducts internal audits for all matters related to the execution of operations by the company and its Group companies, and dedicated audit teams for the Responsible Care Department conduct Responsible Care auditing from the perspective of safety, environment, and quality throughout the life cycle of chemical products. Internal audits and Responsible Care audits are coordinated with each other as needed.

Internal Audits

The Internal Control & Audit Department organizes teams of several employees who conduct internal audits on Sumitomo Chemical and its major Group companies once every two to five years from the following perspectives: (1) effective and efficient operations; (2) reliability of financial reporting; and (3) compliance with relevant laws and statutes in all business activities.

The department also reports the results of internal audits to the Internal Audit Liaison Meeting, which is held on a quarterly basis and is attended by the Standing Corporate Auditors and a number of departments, including the Legal Department, the Human Resources Department, and the planning & coordination office of each business sector. The department also reports to the Internal Control Committee once every six months in order to share issues and to promote the lateral deployment of measures. In addition, in accordance with the Financial Instruments and Exchange Act, the department evaluates the effectiveness of internal control over the Sumitomo Chemical Group's financial reporting, and also reports on the status of its evaluations to the Internal Control Committee.

Responsible Care Audits

The Responsible Care Department organizes teams of dedicated employees to conduct responsible care audits on each of our business sites and on major Group companies every one to three years, in principle, from the following perspectives: ensuring safety, environmental protection, and health throughout the entire life cycle of chemical products, as well as determining whether internal controls related to maintaining and improving quality are in place and functioning properly.

Through these audits, we are striving to support the improvement of Responsible Care management in accordance with the size, type of business, and characteristics of each business site and Group company. Issues discovered during the audit and the progress of improvements are reported internally every time and to the Responsible Care Committee when it meets once a year.

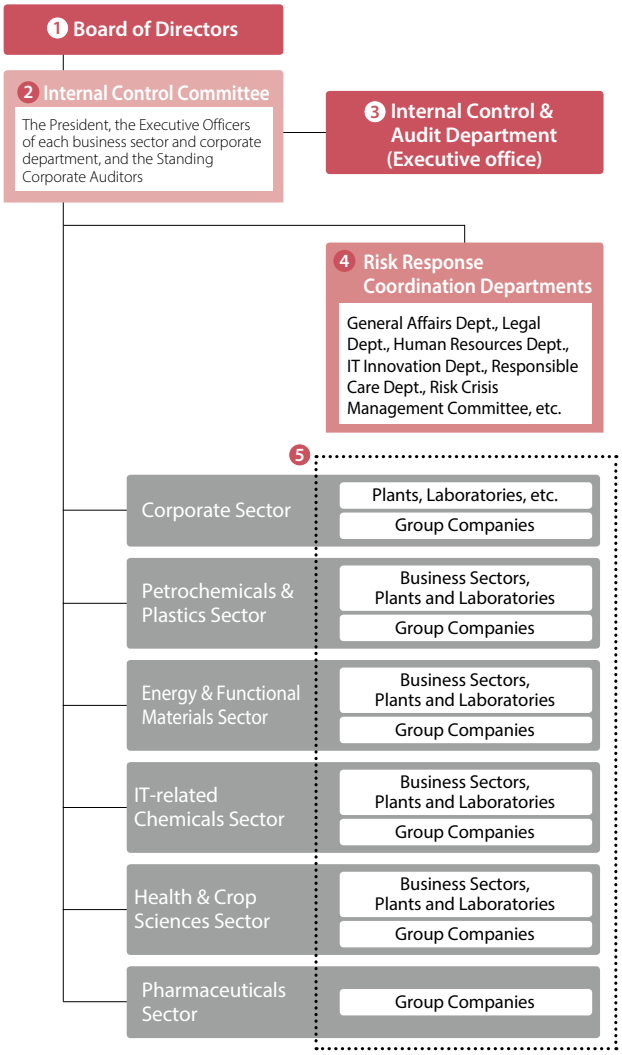
Risk Management

Sumitomo Chemical seeks to improve and enhance its risk management system to detect, at an early stage, risks that have the possibility of hindering the achievement of business objectives and to prevent them from occurring as well as to minimize damage when they do occur.

Risk Management Organization

As part of its standard duties, each of the Group's organizations is taking various measures to appropriately manage the risks associated with its business operations. In addition, the Internal Control Committee deliberates on Group-wide priority risk management policy as a basis for supporting and ensuring thorough implementation of these measures by each organization. Moreover, the committee oversees the implementation of measures undertaken by each organization based on this policy.

Risk Management Promotion Organization



1 Board of Directors
- The Board ensures the effectiveness of risk management by deliberating and supervising the activities of the Internal Control Committee.

2 Internal Control Committee (Chaired by the President)
- The committee deliberates on policies related to risk management for the entire Sumitomo Chemical Group, and supervises the efforts of each organization based on these policies.

3 Internal Control & Audit Department
- As the executive office of the Internal Control Committee, this department monitors the risk management activities of each department and Group company of the Sumitomo Chemical Group.

4 Risk Response Coordination Departments
- Each organization plans and promotes Group-wide countermeasures for the risks assigned to it, in cooperation with each department and Group company.

5 Each Department and Group Company
- These organizations are the main drivers of risk management.
- The organizations develop and implement countermeasures for the risks affecting their own organization or company.

Risk Management

Promotion of Group-wide Priority Risk Assessment and Countermeasures

Every year, approximately 120 major organizations, both in Sumitomo Chemical and Group companies in Japan and overseas, conduct risk evaluations, assessing the probability of occurrence and the potential impact of various risks that could hinder the achievement of business objectives. These results are then aggregated to create a Group-wide priority risk map. Based on this risk map, the Internal Control Committee identifies priority risks that require Group-wide countermeasures. In addition, our risk response coordination departments, which have been established for each priority risk, formulate a response plan for the entire Group, and each organization of the Group implements countermeasures in accordance with this plan. Moreover, the committee regularly receives reports on the progress of countermeasures and provides necessary instructions.

Risks subject to risk management

- To ensure the Group can comprehensively manage various risks that could hinder it from achieving its business objectives, the Risk Response Coordination Departments have cooperated to create a list of risk items.
- Each risk item is grouped in one of the seven areas shown in the pie chart. Each of these areas encompasses a wide range, from risks associated with business activities (price fluctuations, technological innovation, etc.) to ESG-related risks (response to the CO_2 problem, human rights issues, etc.).
- In addition, revisions are made as necessary every fiscal year in response to changes in the Group's business activities or in social conditions.
- Each of the Group's organizations uses this list of risk items to conduct a yearly assessment of its own risks and to implement countermeasures for priority risks associated with its business operations.

Risk Factors

https://www.sumitomo-chem.co.jp/english/ir/policy/risk_factors/

Evaluating Risks and Promoting Countermeasures

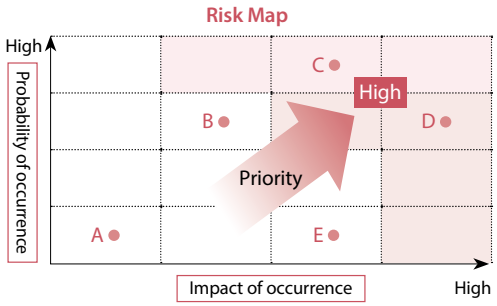
Risk Maps Created by Each Internal Department and Group Company

Each organization identifies risks critical to its own execution of duties and advances countermeasures.

Consolidation

Group-wide Risk Map

The Internal Control Committee identifies priority risks that require Group-wide countermeasures and advances them across the Group.



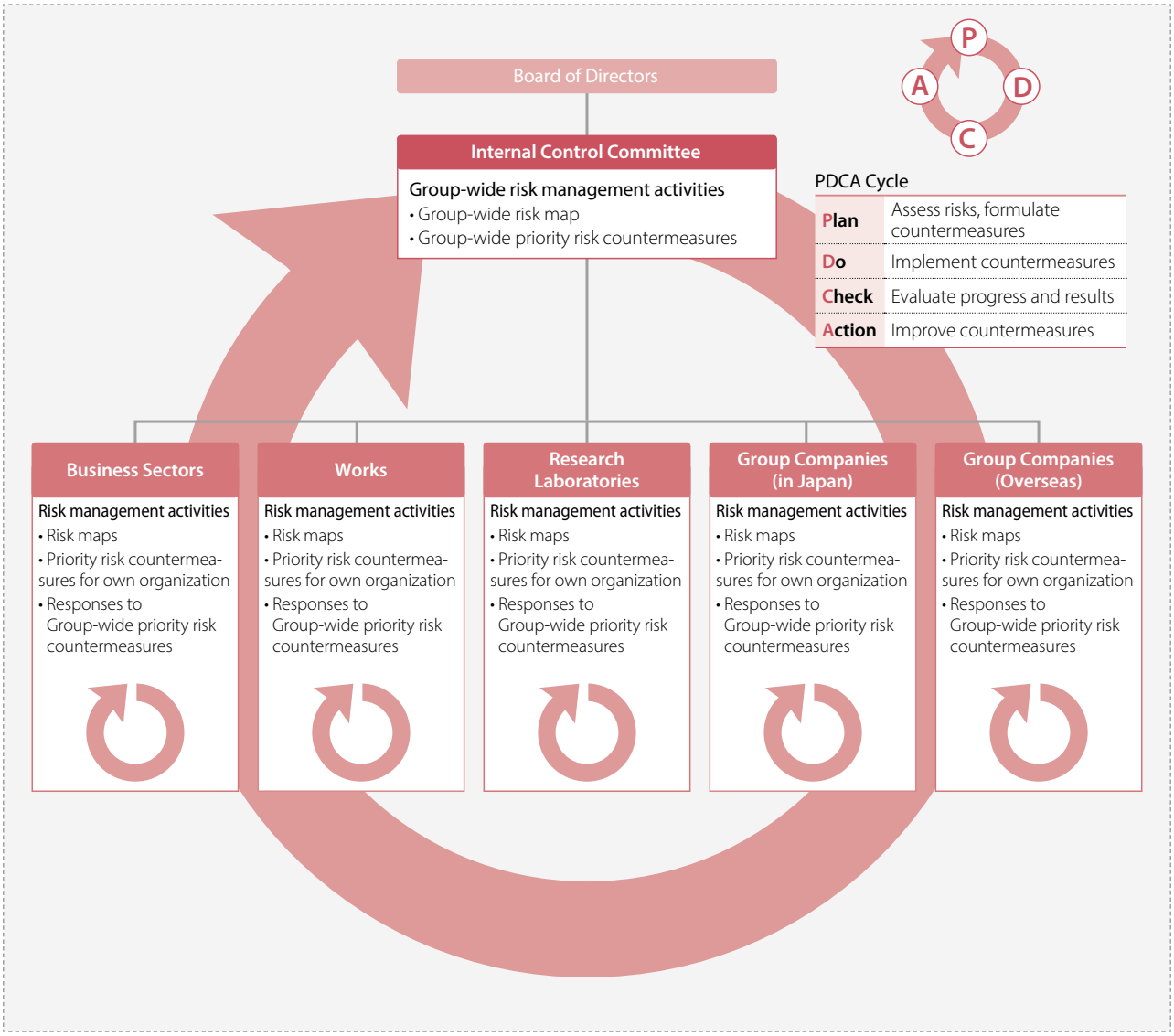
Identify priority risks (C, D) using risk maps that lay out the results of assessments of the probability of occurrence and degree of impact for various risks.

Risk Management

To Review and Strengthen the Effectiveness of Risk Management

In this way, we conduct a PDCA cycle for risk management every fiscal year, centered on the Internal Control Committee. In doing so, we are constantly inspecting and strengthening risk management in response to changes in our business and the surrounding environment so that risk management functions effectively. Summaries of the matters covered in the committee are reported to the Board of Corporate Auditors after each meeting. These summaries are then reported to the Board of Directors for deliberation.

■ PDCA Cycle for Risk Management Activities



Cross-Organizational Risks and Crisis Response

We established the Risk Crisis Management Committee to deliberate risks and crisis response policies that affect multiple business sites, departments, and Group companies, such as large-scale disasters (earthquakes, storms, floods, etc.), pandemics, deterioration of security in Japan or overseas (terrorism, riots, wars, etc.), and other issues.

Compliance

Basic Policy

The Sumitomo Chemical Group places compliance at the bedrock of its corporate management. As we engage in business in many parts of the world, all of the companies in the Sumitomo Chemical Group are devoting earnest efforts to stay in strict compliance with not only laws and regulations, but also ethical principles in a business environment.

Both the spirit and the letter of ensuring compliance in business activities have consistently been enshrined at Sumitomo Chemical ever since its founding. This unwavering resolve towards compliance is embodied succinctly in the "Sumitomo Chemical Charter for Business Conduct," which serves as the guideline of conduct for every employee to abide by and constitutes the backbone of our day-to-day compliance activities. In recent years, in particular, companies are expected to fulfill their societal responsibilities more than ever before. Given the circumstances, all companies in the Sumitomo Chemical Group are making concerted efforts to further compliance activities, under the strong leadership of top management, to further enhance compliance in the Group's business activities on a global basis.

The Sumitomo Chemical Charter for Business Conduct and Code of Ethics Embody the Sumitomo Spirit and Business Philosophy

Sumitomo Chemical has established the Sumitomo Chemical Charter for Business Conduct (refer to page 8) to embody the Sumitomo Spirit, Business Philosophy, and Basic Principles for Promoting Sustainability. In addition, to better define the Charter for Business Conduct and more clearly explain it to employees, we established the Sumitomo Chemical Code of Ethics (hereinafter, "the *Compliance Manual*") as corporate rules and distributed them to employees.

Sumitomo Chemical Charter for Business Conduct

https://www.sumitomo-chem.co.jp/english/company/principles/charter/

Compliance Manual

https://www.sumitomo-chem.co.jp/english/company/compliance/rules/society/

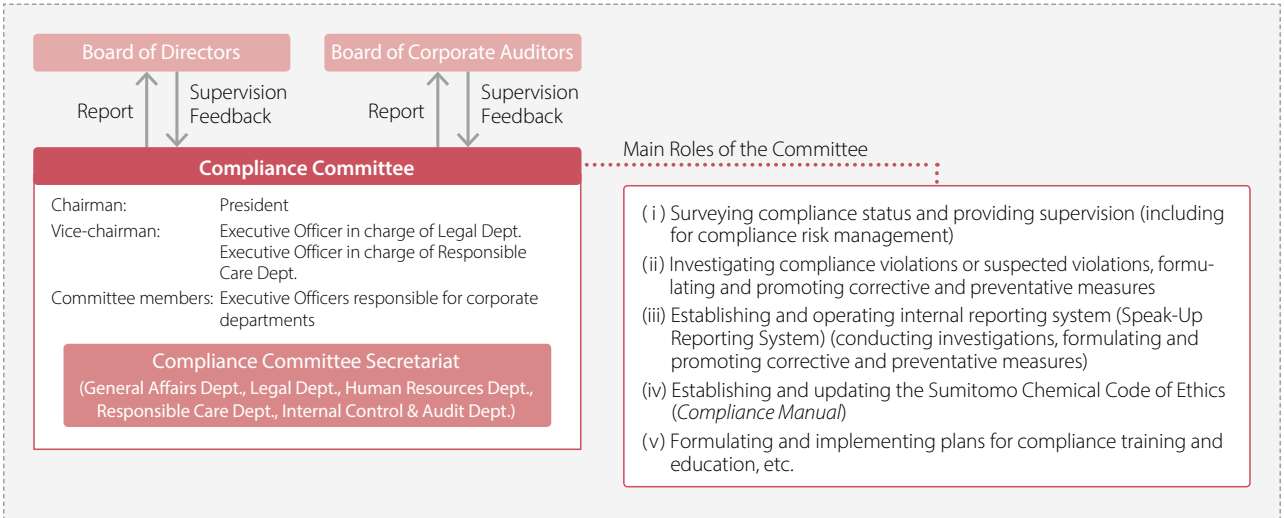
Compliance

Compliance System at the Sumitomo Chemical Group

(1) Compliance Committee

Sumitomo Chemical has established a Compliance Committee chaired by the President and holds a Compliance Committee meeting at least once a year (or more frequently as needed). Details discussed by the committee are reported to Board of Directors and Board of Corporate Auditors, and the committee then receives feedback from them.

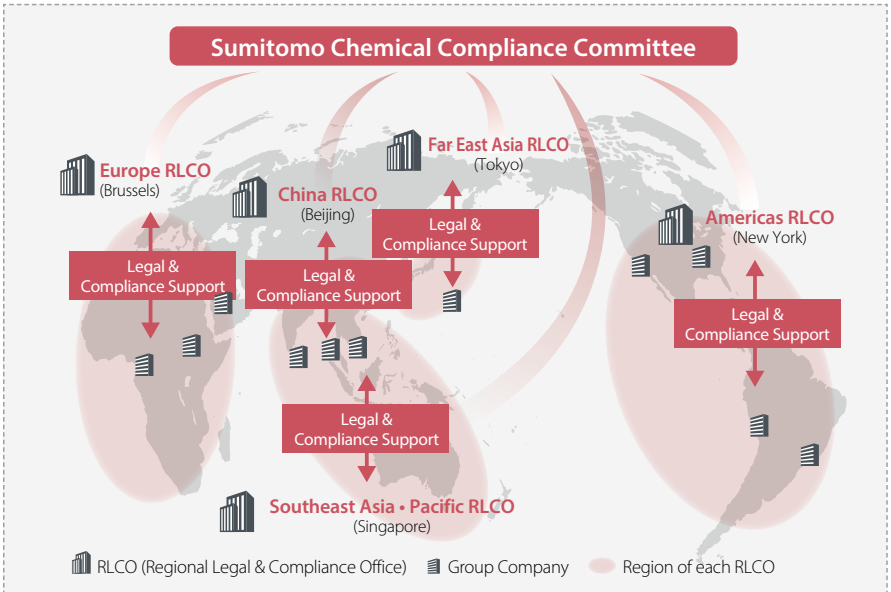
The committee establishes overarching principles of compliance from a global perspective, and then works with each business sector and Group company, both in Japan and abroad, to build and operate their compliance systems locally in the required manner, according to those global principles.



(2) Group Compliance Structure Focused on Effectiveness (Think globally, Manage regionally, Act locally)

As business globalizes, it becomes more important that the operation of a corporation's compliance system be fine-tuned to situations specific to individual countries or companies. In light of this, we have established Regional Legal & Compliance Offices (RLCOs) in Sumitomo Chemical's major business regions. The RLCOs, grasping the concrete needs and tasks of their respective Group companies, provide hands-on support and guidance to them, such as helping to set and implement necessary internal rules and procedures, building a company's compliance system, and assisting in its operations.

■ Compliance System at Sumitomo Chemical Group



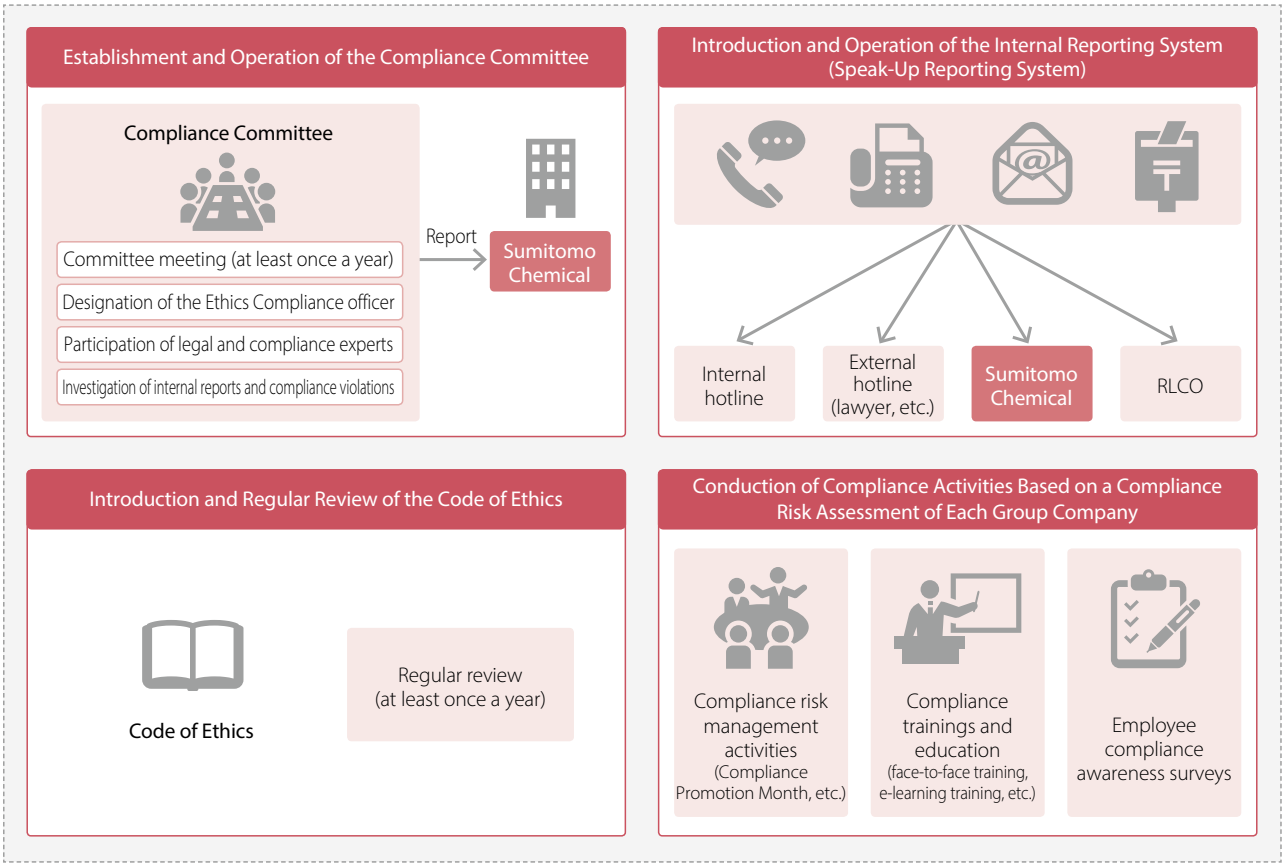
Compliance

(3) Introducing and Operating a Compliance System for the Company and its Group Companies

To ensure thorough compliance throughout the entire Sumitomo Chemical Group, it is important that Sumitomo Chemical and its Group companies establish and operate their own compliance systems. Accordingly, we established the Sumitomo Chemical Group Compliance Standards, which outlines the compliance systems and activities that serve as our standards. In line with these standards, Sumitomo Chemical and its Group companies are engaged in the following main initiatives.

(i) Establishment and operation of the Compliance Committee (including responding to internal reports and conducting compliance violation investigations)
(ii) Introduction and regular review of the Code of Ethics
(iii) Introduction and operation of the Internal Reporting System (Speak-Up Reporting System)
(iv) Conduction of compliance activities (education, training, etc.) based on a compliance risk assessment of each group company

Compliance System Operations



Compliance

Internal Reporting System (Speak-Up Reporting System)

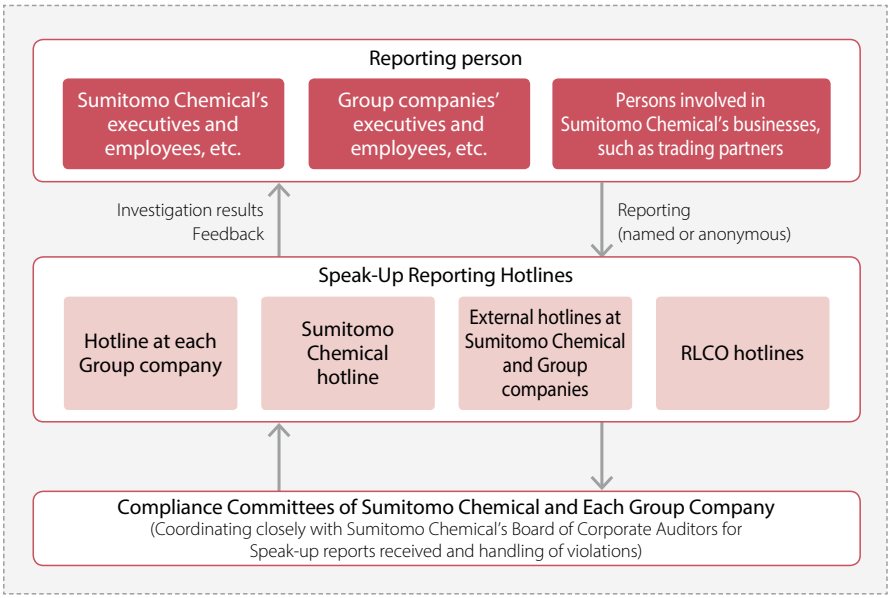
(1) The Internal Reporting System Is the Key to Ensuring Compliance

In order to detect any compliance violations as early as possible or to prevent them from occurring in the future, the Sumitomo Chemical Group has introduced an internal reporting system (the Speak-Up Reporting System) that allows company employees, etc. to report a compliance violation or a suspected violation directly to the Compliance Committee or to external lawyers, either. Sumitomo Chemical's executives and employees (including contract employees) and their families, Group companies' executives and employees, and anyone involved in the Company's businesses (including trading partners) may use the Speak-Up Reporting System.

Furthermore, to receive a Speak-up report without fail, Sumitomo Chemical have set up Speak-up reporting hotlines to receive reports at (i) the Compliance Committees of each Group company, (ii) RLCOs, (iii) the Compliance Committee of Sumitomo Chemical, and (iv) external lawyers designated by these committees. The person reporting can choose the hotline they think most appropriate. In addition, anonymous reports are also accepted and responded to.

Note: Regarding reporting within the European Union, we act in compliance with the various laws and regulations of the European Union or its individual member countries.

■ How a Report is Processed under the Internal Reporting System (Speak-Up Reporting System)



(2) Guidance and Oversight by the Board of Corporate Auditors, Including Outside Corporate Auditors

On the grounds that Speak-Up reports given to the Compliance Committees of Sumitomo Chemical and the Group companies, as well as compliance violation incidents at each company, are also important from a governance perspective, the Board of Corporate Auditors will regularly, or as needed for important issues, receive reports on these reports and violations, and will provide guidance and oversight.

(3) Promoting Use of the Internal Reporting System (Speak-Up Reporting System)

Sumitomo Chemical Group has established Company rules that the company carry out investigations based on the speak-up report with utmost consideration to protecting the privacy of a reporting person and maintaining confidentiality of information provided and that the company doesn't put truthful reporting person at any disadvantage, such as dismissal, transfer, or discrimination, on the ground of having made the report. Moreover, to ensure that the Speak-Up Reporting System functions in a truly effective manner, Sumitomo Chemical's Compliance Committee takes every opportunity to explain to employees that speak-up reporting will never disadvantage a reporting person. In this regard, the Committee has been working to help employees understand clearly that confidentiality about the reporting is maintained and any disadvantageous treatment to a reporting person is strictly prohibited. In addition, the Committee shares with employee's information about how far the Speak-Up Reporting System is in use by employees.

Compliance

(4) Latest Results of the Internal Reporting System

As a result of initiatives promoting use of the reporting system, in fiscal 2018, the total number of reports made to the Compliance Committees of Sumitomo Chemical and its Group companies (including listed companies in which the Company holds a stake of 50% or more) was 149, a year-on-year increase of 51 reports. Upon its receipt, each report was worked on, and an investigation was conducted promptly and cautiously into a reported incident. When violations were found or if a situation that might eventually develop into an incident of violation was recognized, corrective measures were taken properly. In addition, information on a violation incident and corrective measures actually taken was shared, as necessary, by other companies of the Group so that they could prevent similar incidents from occurring in their workplace in the future.

■ Number of Reports (Sumitomo Chemical Group*)

	FY2017	FY2018
Number of reports	98	149

* Includes those listed companies in which the Company holds a stake of 50% or more

Response to Compliance Violations

At Sumitomo Chemical, when a compliance violation or suspected violation is discovered within a department, the compliance supervisor in the department promptly reports to the relevant department and the Compliance Committee. After submitting a report, an investigation is carried out, and if any compliance violation is discovered, corrective and preventative measures are formulated and rolled out not just to the offending department but to the entire Sumitomo Chemical Group to ensure a recurrence is thoroughly prevented. In addition, the Internal Control & Audit Department and the Responsible Care Department conduct audits from the perspective of compliance. When compliance violations are discovered through these audits, corrective action is taken directly at that time. In fiscal 2018, there were no major compliance violations related to the Sumitomo Chemical Group's business continuity.

Results of Main Compliance Activities in the Sumitomo Chemical Group

(1) Compliance Committee Meetings

Sumitomo Chemical and its Group companies have established Compliance Committees, which convene either regularly (at least once a year) or as appropriate. Sumitomo Chemical's Compliance Committee convened on April 19, 2019, and reported its results to the Board of Directors and Board of Corporate Auditors, from which it received feedback.

(2) Review and Update of the *Compliance Manual*

Sumitomo Chemical and its Group companies regularly review the Code of Ethics (at least once a year). After conducting a review, if there is need for an update, it is made promptly. Sumitomo Chemical conducted a review of the Code of Ethics at relevant departments. In light of these results, we updated the Code of Ethics in September 2019.

Compliance Manual

https://www.sumitomo-chem.co.jp/english/company/compliance/rules/society/

Compliance

(3) Compliance Promotion Activities

(i) Compliance Risk Management Activities (Compliance Promotion Month, etc.)

Sumitomo Chemical and some of its Group companies have designated October as Compliance Promotion Month. During this month, all employees in each workplace, including manufacturing, sales, and various intermediate departments, participate in discussions to examine and identify all conceivable compliance risks, major or minor, that might arise in each workplace. They then go on to select those risks that need to be specifically addressed, and formulate concrete measures to prevent the risks from occurring in the future. For those preventive measures that are already in place, they review once again whether or not the measures are effective enough when implemented. Continuous implementation of these measures not only reduces specific compliance risks in the workplace but also helps in raising employees' compliance consciousness.

During the Compliance Promotion Month initiatives of fiscal 2016, so-called "fraud" risks were made essential topics of discussion. In fiscal 2017, collusion and harassment were essential topics, and, in fiscal 2018, information leaks and management of the company's assets were essential topics, as all major compliance risks were examined and identified in each department, and then, concrete preventive measures were formulated and implemented. Reports on these activities are submitted by each department, and an evaluation team that includes outside legal counsel objectively evaluated them. With the goal of further raising the level of compliance, we shared information on departments with positive evaluations and the details of their initiatives within the Company.

(ii) Compliance Training

In line with its firm belief that strict compliance can only be achieved with each employee having high awareness of compliance, Sumitomo Chemical places importance on carrying out compliance education on a continual basis. This includes training programs geared to management executives at Sumitomo Chemical and Group companies as well as class-based training when someone is promoted. In addition, we conduct face-to-face lecture-style training courses and e-learning training, depending on each company's specific needs and situation.

In fiscal 2018, we conducted compliance e-learning training for all Sumitomo Chemical employees (around 7,000 people), and all employees received the training. In addition, some Group companies in Japan conducted similar e-learning training, and all eligible employees received the training.

■ Status of Implementation at Sumitomo Chemical and Group Companies

	Status of Implementation
Sumitomo Chemical	Compliance e-learning training (including anti-harassment, corruption prevention, data falsification/manipulation prevention, raising awareness of the internal reporting system) Participation rate: 100% (conducted at all worksites and departments) (already conducted training for promoted employees and individual training related to quality assurance, safety, logistics, information security, etc.)
Group Companies	Percentage of companies that conducted training related to compliance Group companies in Japan: 97.4% Group companies overseas: 89.6%

(iii) Employee Compliance Awareness Survey

In order to measure the effect of the initiatives listed above, including compliance activities and training, Sumitomo Chemical regularly conducts employee compliance awareness surveys, and in fiscal 2017, a survey of more than 40 Group companies in Japan and overseas were conducted. In fiscal 2018, around 20 Group companies in Japan and overseas were conducted. Questions about topics such as the compliance awareness among individual employees were designated as key performance indicators (KPIs) for this survey, and observing trends in these KPIs each time a survey is conducted will lead to the discovery of issues and the setting forth of measures aimed at further improvement.

Compliance

(4) Initiatives to Respect Human Rights, Prevent Corruption and Comply with Competition Laws

An area of our recent focus is to strengthen those initiatives which lead to respect human rights (refer to page 112), and initiatives will more effectively serve to maintain sound business practices in companies' entire supply chains, through implementing measures to prevent corruption, such as bribes and collusion with business partners (including bribery and collusion with operators; refer to page 55), as well as initiatives to ensure strict observance of competition laws.

In addition, with regard to competition laws, we implemented a thoroughly revised *Competition Law Compliance Manual* in fiscal 2017, and we will also promote to introduce the Manual in Group companies going forward. Furthermore, we actively are providing trainings using this *Competition Law Compliance Manual*.

■ Status of Implementation for Training Related to Competition Laws

	Status of Implementation
Sumitomo Chemical	Already implemented at eligible worksites and departments (total of 12 times)
Group Companies	Group companies in Japan (already implemented): 79.5% Group companies overseas (already implemented): 70.8%

(5) Compliance Audit

As it is also important to conduct audits of whether the operations of the compliance structure and various compliance activities are being appropriately carried out in each department of Sumitomo Chemical, and in each Group company, the Internal Control and Audit Department and the Responsible Care Department conduct compliance audits. (For more details on the Responsible Care Department's audits, refer to page 61.) Regarding matters discovered during the compliance audits, appropriate corrective measures are taken.

Sumitomo Chemical Group Compliance Action Policy (FY2019)

Under the Corporate Business Plan, ensuring strict compliance for the entire Sumitomo Chemical Group is a basic policy, Sumitomo Chemical steadily respond to the following issues.

- New trends, including the SDGs, ESG, sustainability, diversity, and respect for human rights
- The increasing impact of compliance violations (sanctions, damage of credibility, etc.) associated with our global expansion
- The growing importance of daily risk control and crisis management

In this way, Sumitomo Chemical will strengthen and improve the Group's compliance system operations and continue to further enhance its effectiveness.

■ Fiscal 2019 Sumitomo Chemical Compliance Action Goals

Item	Medium- to Long-Term Goal	FY2019 Goal	FY2018 Results (Ref.)
Internal Reporting (speak-up reporting)	100 or fewer employees per report	10% year-on-year improvement (419 employees per report)	466 employees per report
Compliance Training	Continually conduct yearly compliance training at all Group companies	Conducted compliance training at all Group companies	Sumitomo Chemical: 100% Group companies in Japan: 97.4% Group companies overseas: 89.6%

Compliance

Looking Ahead

Being a global enterprise, Sumitomo Chemical's Compliance Committee, RLCOs, and Group companies are deeply committed to fulfilling their corporate citizenship responsibilities as a global corporation by carrying out the Sumitomo Chemical Group Compliance Basic Policy.

Anti-corruption

Basic Policy

As corporations expand activities across national boundaries, promoting fair competition becomes increasingly important in the supply of goods and services in the international marketplace. As is evident from the ever tightening laws and regulations in the world designed to prevent corruption, such as the FCPA in the U.S. and the Bribery Act of 2010 in the U.K., there is a growing awareness globally that corrupt conduct, such as bribery, should be eliminated by any means necessary. Under the circumstances, Sumitomo Chemical has positioned the prevention of corruption in all its forms, including bribery of public officials, excessive business entertainment and gift-giving, collusion, embezzlement, and breaches of trust as one of the most important issues in ensuring thorough compliance. We are striving to ensure a sustainable and sound corporate climate by enhancing our internal organization to appropriately respond to corruption risks to prevent the occurrence of corruption.

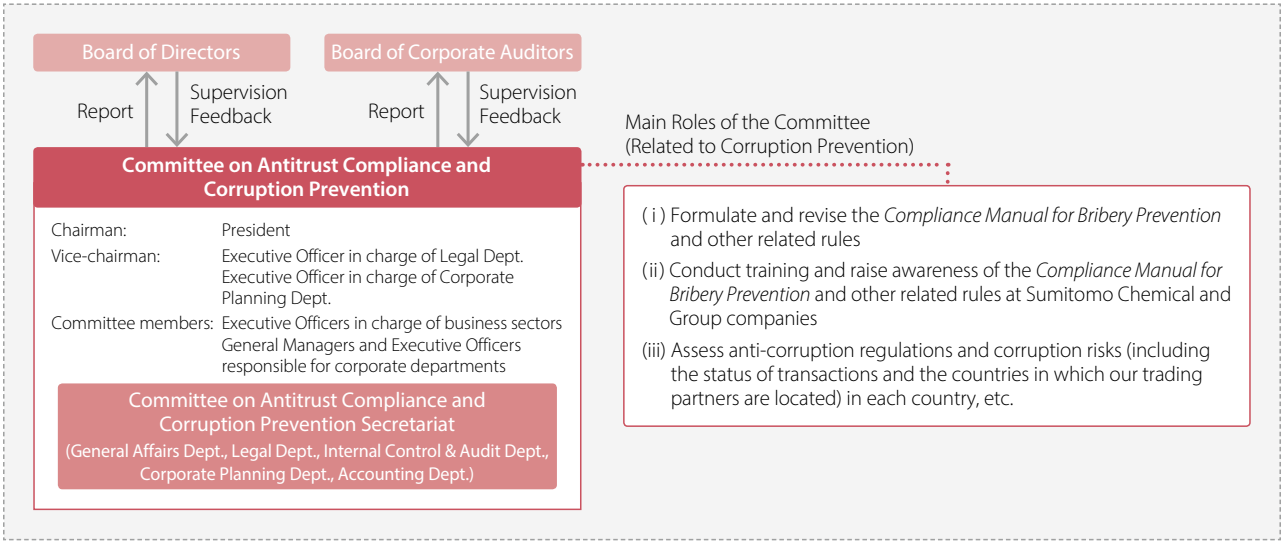
Committee on Antitrust Compliance and Corruption Prevention

In 2012, reorganizing the previous Committee on Antitrust Compliance we established the Committee on Antitrust Compliance and Corruption Prevention (chaired by the company's President) to establish and manage anti-corruption systems for Group companies in Japan and overseas under the guidance and supervision of the Board of Directors and Board of Corporate Auditors.

In the President's own messages, the committee states its policy and commitment to prohibit all forms of corruption, including bribery of public officials by management executives or employees, excessive entertainment and gift-giving, collusion, embezzlement, and breaches of trust. In addition, we have formulated a Compliance Manual for Bribery Prevention that contains detailed anti-corruption rules. The manual has been disseminated to all Group companies in Japan and overseas, and has been posted on the company intranet, and periodic training sessions are conducted to ensure thorough compliance among the employees of the company and its Group companies.

Further, we conduct assessments of anti-corruption regulations and corruption risks in each country, such as the status of transactions and the countries in which our trading partners are located. Based on the results of these assessments, we decide on policies to strengthen measures to prevent corruption, and apply them to the company and all Group companies.

■ Committee on Antitrust Compliance and Corruption Prevention



Anti-corruption

Compliance Manual for Bribery Prevention (Outline)

Chapter 1: General Principles

1. Prohibition of Giving Bribes
   It is prohibited to give bribes to a government official or to any other person or entity, including private trading partners.
2. Prohibition of Accepting Bribes
   It is prohibited to accept a bribe. In addition, it is prohibited to request a bribe or gift, entertainment, or other benefit from a third party.
3. Prohibition of Giving or Accepting Excessive Gifts or Entertainment
   It is prohibited to give or accept excessive gifts or entertainment. All forms of gifts or entertainment that may harm the Company's reputation are always impermissible.

Chapter 2: Prohibition of Bribing Government Officials

The provision of any form of improper benefit to a government official may be considered a bribe. Furthermore, various rules are put in place, including those related to the circumstances where any type of gift and entertainment to a governmental official is prohibited, procedures for sponsoring site visits by governmental officials, procedures for giving donations and political contributions, and compliance with local regulations.

Chapter 3: Rules For and During Engagement of Business Partners

It is required to conduct due diligence when the Company engages new business partners or renews engagement of existing business partners, such as agents, distributors and consultants who could interact with government officials in the course of services for the Company. It is also required to fix the appropriate compensation and to take necessary internal procedures when concluding contracts with business partners.

Chapter 4: Proper Keeping of Books and Records

It is required to prepare and maintain appropriate and accurate books and records related to entertainment, gifts, payments to business partners, and other transactions.

Chapter 5: Monitoring Legal Compliance

It is required for each department to ensure thorough compliance, for the Internal Control & Audit Department to conduct audits, and the Committee on Antitrust Compliance and Corruption Prevention to take initiatives. In addition, the Company's executives and employees are obligated to file a report when a violation (or a suspicion of one) is detected.

Chapter 6: Violations

The Company's executives and employees who commit violations of this manual are subject to disciplinary action.

Anti-corruption

Initiatives in the Supply Chain

In order to prevent corruption in the Group's supply chain, we are making our agents, consultants, distributors, and other business partners aware of our anti-corruption policy by holding regular training sessions when initially engaging or renewing a contract, or at business meetings and other occasions. We also ask our partners to pledge to comply with the policy. In addition, as part of our due diligence procedures, we ask business partners to submit written responses detailing their company's profile and any past corruption problems, and assess the risk of corruption based on these responses. Moreover, when we engage a business partner for business with a high risk of corruption, such as in a public tender transaction or in a developing country, a more detailed risk assessment is carried out, including on-site interviews with the business partner conducted by an outside expert. If it is judged that there is a risk of corruption as a result of the assessment, we conduct awareness-raising activities concerning the prevention of corruption for such business partners, asking them to implement corrective measures such as strengthening the internal rules and organization to prevent corruption, and offering our support for such efforts. (The company does not engage business partners if the implementation of remedial measures is refused or if there is a strong concern about corruption detected through the assessment process.)

Other Measures

In addition to the above-mentioned measures, we are striving to prevent corruption through the application of internal rules on business entertainment and gift-giving, and the strict application of approval procedures for business decisions and payment.

We have also established and operate an internal reporting system (the Speak-Up Reporting System, which allows anonymous reporting) that can be used by anyone involved in our business, including business and trading partners, in order to quickly identify corruption or the threat of corruption, to prevent compliance violations from occurring, and to rectify them as soon as possible. We also inform management executives or employees of Group companies, and business and trading partners, about the use of this system.

Management executives and employees whose corrupt conduct has been confirmed are subject to disciplinary action in light of internal rules. Business and trading partners are requested to rectify such actions, and other measures are taken, such as the suspension of transactions.

Looking Ahead

The Sumitomo Chemical Group will continue actively promoting various initiatives across its entire supply chain going forward to prevent bribery and all other forms of corruption.

Responsible Care

Basic Stance

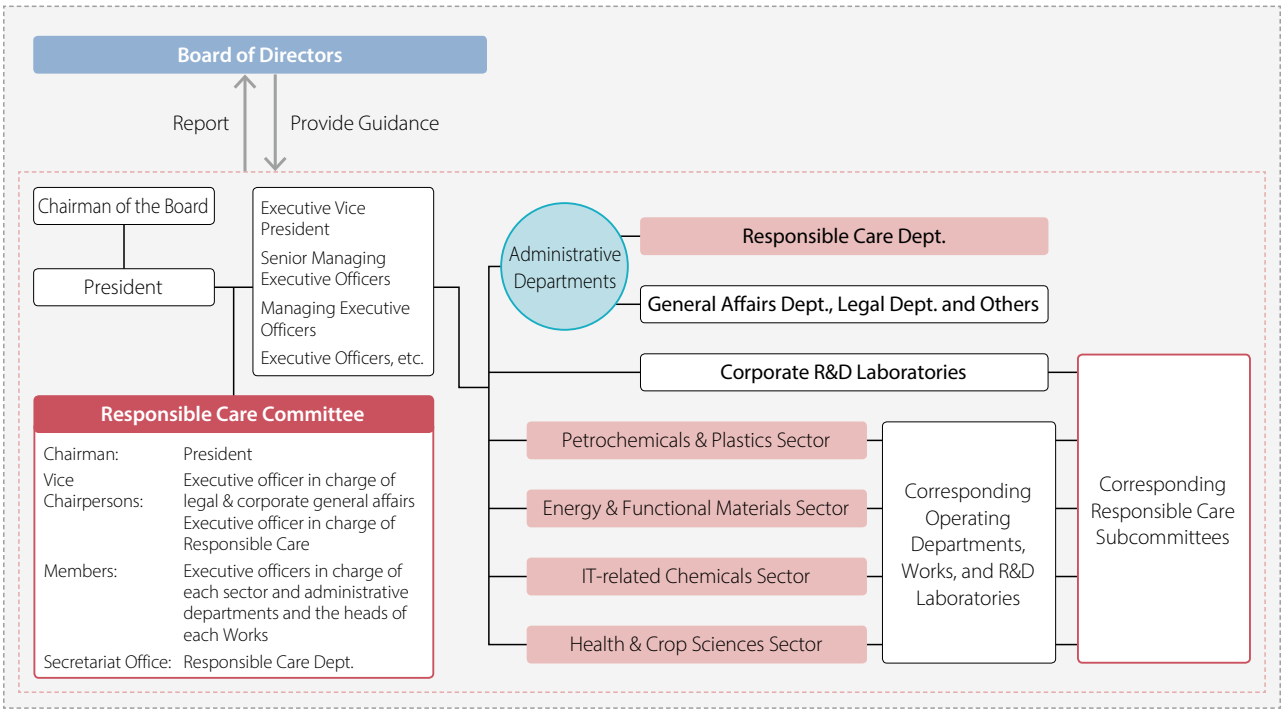
Responsible Care (RC) activities refer to the voluntary initiatives undertaken by business operators in the chemical industry, with the goals of ensuring safety, the environment, and health throughout the life cycle of chemical products, from development through to the manufacture, sales, use, and disposal after final consumption, maintaining and improving the quality of those products. These activities also strive to gain the further trust of society through continuous dialogue.

The Sumitomo Chemical Group has positioned Responsible Care activities as one of its most important management pillars. Based on the core principle of "Making safety our first priority," the Group has set goals for each of the following fields: occupational safety and health; industrial safety and disaster prevention; environmental protection; climate change; product stewardship, product safety, and quality assurance; Responsible Care audits; and logistics. The Group is working to achieve the goals it has set.

Management System

As the body for deliberating and approving Sumitomo Chemical's RC activities, the Responsible Care Committee is chaired by the president and comprises executive officers supervising the administrative departments and the four business sectors of the Company, and the General Manager of each Works. The Committee puts in place annual policies on activities, medium-term plans, and specific measures as they relate to Responsible Care. The committee also analyzes and assesses the results of Responsible Care activities. The Committee then reports the content of its meetings to the Board of Directors as appropriate and receives necessary guidance in an effort to enhance its supervisory functions and the execution of its duties.

Organization of Responsible Care



Responsible Care

Policies and Goals

Corporate Policy on Safety, the Environment and Product Quality

Sumitomo Chemical has set forth safety, the environment, and product quality as top priorities for all phases of its business activities in its Corporate Policy on Safety, the Environment and Product Quality. This policy has been communicated to all employees of Sumitomo Chemical and its Group companies to ensure that each and every employee is fully aware of it.

In conformity with Sumitomo's Business philosophy, our Company fulfills its responsibility to develop, manufacture, and supply a variety of products that satisfy the fundamental necessities of human life and contribute to the growth of society. Under the concept of "Making safety our first priority," which is fundamental to all the Company's operations, Sumitomo Chemical has based management of its activities on the principles of (i) maintaining zero-accident and zero-injury operations, (ii) ensuring customer satisfaction, and (iii) promoting mutual prosperity with society.

Paying due respect to these principles, our Company is determined to conduct all activities, including production, R&D, marketing & sales, and logistics, in accordance with the following policy related to safety, the environment, and product quality.

1. Maintain zero-accident and zero-injury operations and the safety of neighboring communities and our employees.
2. Ascertain the safety of raw materials, intermediates, and products and prevent our employees, distributors, customers, and consumers from being exposed to any possible hazard.
3. Supply high-quality products and services that satisfy customers' needs and ensure safety in their use.
4. Assess and reduce our environmental impact at all operational stages, from product development to disposal, and undertake all practical environmental protection measures.

All sections and employees of our Company shall be made fully aware of the significance of this policy and shall constantly strive to improve operational performance, while at the same time abiding by all relevant laws, regulations, and standards.

Revised: November 1, 2005 (Established: April 1994)

Policy on Responsible Care Activities

Sumitomo Chemical has summarized its key Responsible Care initiatives in its Policy on Responsible Care Activities, which is incorporated into the specific activity targets and plans formulated annually by each Sumitomo Chemical workplace and Group company.

In accordance with the Sumitomo Chemical Charter for Business Conduct and the Corporate Policy on Safety, the Environment and Product Quality, the Sumitomo Chemical Group as a whole will strive to promote Responsible Care Activities, thereby earning the trust of society, promoting business activities, and contributing to the sustainable development of society.

1. We will achieve zero-accident, zero-disaster targets to ensure safe and stable operations.
2. We will conduct risk management throughout the life cycle of our products, from the stages of development to manufacturing, logistics, use, and disposal and strive to ensure the safety of our employees, those involved in logistics, customers, and general consumers as well as the local community while also preserving the environment.
3. We will strive to develop safe and environmentally friendly products and manufacturing processes.
4. We will promote energy and resource conservation and waste reduction, thereby easing the environmental burden.
5. We will comply with all domestic and international laws, regulations, and ordinances related to safety, the environment, and product quality, and further enhance our related voluntary initiatives.
6. We will implement the requisite education and training related to safety, the environment, and product quality.
7. We will disclose information on Responsible Care Activities and engage in dialogue with society to ensure we meet society's expectations, respond to its interests, and remain accountable to the same.
8. We will continuously improve Responsible Care Activities based on Responsible Care auditing and third-party verification.
9. We will support the Responsible Care Activities of Group companies, contractors, and other business partners and help them carry out initiatives to enhance the same both at home and abroad.

Revised: July 15, 2013 (Established: January 1995)

Responsible Care

Promoting Responsible Care Activities

Sumitomo Chemical shares policies and targets regarding RC across the entire Group. We are working to maintain stable operations with zero accidents and zero injuries as the foundation of our business, which is one of the basic policies outlined in the Responsible Care medium-term plan. We are also striving to ensure safety, environmental friendliness, and health throughout the life cycle of products as well as to improve the quality of chemical products the Company manufactures.

	Medium-term Plan (for Fiscal 2019 to 2021)
Occupational Safety and Health	• Assess the level of safety culture and safety infrastructure at each workplace and constantly strive for improvement. • Promote safety and health activities based on international standards and adapt to a society where people can choose from a variety of flexible working styles
Industrial Safety and Disaster Prevention	• Strive to strengthen safety infrastructure by introducing advanced technologies to improve management technologies, training highly skilled process safety personnel, and carefully managing facilities and construction projects. • Strengthen our response to intensifying natural disasters and new threats, such as terrorism
Environmental Protection	• Work to rapidly respond to environmental laws and regulations and continually reduce our environmental impact • Actively work to disclose environmental information to help steadily improve our standing in society
Addressing Climate Change	• Work to formulate and implement action plans aimed at achieving our science based targets (SBTs) • Consider medium- to long-term policies for Sumika Sustainable Solutions
Product Stewardship, Product Safety, and Quality Assurance	• Use the regulation data collection systems in cooperation with Group companies and establish a long-term system • Strive to increase use of the Company's systems, including the comprehensive chemical management system (SuCCESS) • Promote activities to prevent quality-related problems and reduce losses arising from flaws
RC Audits	• Conduct audits to ensure thorough operation of the Responsible Care management system, steady improvements to its operation, and compliance with related laws and regulations
Logistics	• Work to reduce the number of logistics safety- and quality-related incidents

Note: More details on the key activities and initiative results for each field can be found in the following sections.

At present, we have stationed Responsible Care specialists at regional headquarters in Europe and the Americas as well as China and the wider Asia Pacific region. This has enabled us to develop RC activities rooted in each area. We established the Sumitomo Chemical Group's Safety Ground Rules in 2016 as a measure to further secure safety at all Group locations. We have since been working to promote awareness of the rules among all Group employees while further raising the level of Groupwide safety activities and eliminating work-related accidents. Moreover, we strive to ensure the safety of community residents and protect their environment while promoting mutual understanding by providing residents with information concerning our initiatives and engaging in dialogue.

Also, we continually work to develop human resources that are capable of implementing Responsible Care, for example, through training and practice at each production site and regional headquarters as well as regular meetings attended by the Responsible Care managers of Group companies in Japan and overseas. In addition, we publish a newsletter that covers various topics and information on accidents and disasters that have occurred within the Group in the hope of preventing similar occurrences. We also promote various kinds of RC activities through RC awards for excellent RC activities of Group companies.

Looking Ahead

As global-scale issues pile up, including the response to climate change, the creation of a circular economy, and considerations for biodiversity, we, as people engaged in the chemical industry, duly regard the society's trust in us as the starting point to continue our business. To ensure continued growth together with customers, regional neighbors, and employees, we will continue to promote Responsible Care activities throughout the Group.

Responsible Care

Eco-First Commitments

In March 2012, Sumitomo Chemical reported the progress and results of its efforts to fulfill the Eco-First Commitments to the Japanese Minister of the Environment while announcing its Eco-First Commitments, Updated Version.

Note: The content was updated in November 2016. From fiscal 2016, measures are being taken in line with the updated content.

ECO FIRST

Eco-First Commitments

Updated Version

November 30, 2016

To Koichi Yamamoto
Minister of the Environment

President of
Sumitomo Chemical Co., Ltd.
Masakazu Tokura

As a leader in the chemical industry, Sumitomo Chemical Co., Ltd. considers the appropriate management of chemical substances to be fundamental and not only observes strict compliance with all relevant laws and regulations, but also works to ensure safety, environmental protection, health and product quality throughout the life cycle of chemical products. The Company also strives to gain the further trust of society through continuous dialogue and undertakes voluntary initiatives (Responsible Care activities) to contribute to the sustainable development of society.

1 We will promote the management of chemical substances and the risk communication in an appropriate and proactive manner using proprietary technology.

- We will review the information on the safety for all our products manufactured and sold in annual amounts of one ton or more by fiscal 2016, and we will conduct the appropriate risk assessments based on the results by fiscal 2020 using our proprietary technology. In addition we will make the results available to the general public as Safety Summaries.
- We will collaborate with chemical companies in the world on studies of the impact of chemical substances on human health and the environment (Long-range Research Initiative) in order to improve the safety of chemical substances.
- All the offices and facilities at Sumitomo Chemical will strive to communicate effectively with and promote information disclosure to local residents and other stakeholders in creative and voluntary ways that suit the needs of the local community.

2 We will develop and apply management technologies that help reduce environmental impacts to realize safe and secure water treatment.

- To make it easier to select the more appropriate water treatment method (either activated sludge or incineration), we will work to more uniformly standardize methods for evaluating the various kinds of process water expelled from plants.
- We will use microbiota analysis, microbial immobilization and other proprietary technology to increase the sophistication of activated sludge treatment and thereby achieve the following goals:
  1. Ensure stable water treatment by checking and managing the health of the sludge biota
  2. Improve our treatment capabilities
  3. Switch over a portion of the treatment of wastewater for which activated sludge treatment had been deemed too difficult from incineration to such treatment

3 We will proactively contribute to build a sustainable society.

- To contribute to society through the power of chemistry (and related businesses) and encourage reductions in CO_2 emissions through the widespread adoption of low-carbon products and technologies, we internally designate products and technologies that help address climate change, actively promote the development and widespread adoption of these products and technologies, and make available to the public quantitative information on emission reductions.
- We strive to improve the unit energy consumption of all plants by an annual average of 1%. We will switch to energy sources with low emission factors, introduce cogeneration systems and promote the installation of LED lighting at worksites. Through these and other efforts, we will improve CO_2 emission intensity from energy sources 15% relative to fiscal 2005 by fiscal 2020. As a result, total CO_2 emissions in fiscal 2020 will be 15%, or around 3.2 million tons, lower than those in fiscal 2005.
- We promote internal education and environmental education activities in different regions to deepen understanding of the importance of environmental protection.

The Company will monitor the progress made in
the above initiatives, make the results publicly available,
and report them to the Ministry of the Environment on a regular basis.

SUMITOMO CHEMICAL

Responsible Care

Progress in Fulfilling Eco-First Commitments

Sumitomo Chemical has participated in the Eco-First Program of Japan's Ministry of the Environment since November 2008. As a leading company in the chemical industry, Sumitomo Chemical is committed to fulfilling its Eco-First commitments to the Japanese Minister of the Environment while ensuring legal compliance and enhancing RC activities.

Results ◉ Very favorable/ ◐ Generally favorable

Management of Chemical Substances and the Promotion of Risk Communication

◉

Reviewing Safety Information on Chemicals and Conducting Risk Assessments
- Performed risk assessments for 594 products to date and publicly released safety summaries for 43 substances. (http://icca.cefic.org/)

LRI*1 Initiatives
- Promoted research by actively participating in the LRI program implemented by the Japan Chemical Industry Association as a member of the steering committee, planning and management task force, and research promotion panel.*2 Furthermore, we participate in the microplastics task force, which has close ties to the LRI program, and provide feedback.

Enhancing Information Disclosure and Risk Communication
- Published the *Annual Report*, *Sustainability Data Book*, the *Report on the Environment and Safety (at all worksites)*, local PR newsletters, etc., made information publicly available on the official website, made school visits, accepted student interns, and engaged in dialogue with local residents.

Realizing Safe and Secure Water Treatment by Developing and Applying Management Technology that Helps Reduce Environmental Impact

◉

Considering Appropriate Water Treatment Methods and Standardizing Methods for Assessing Various Process Waste Water Expelled from Works
- In light of current operating conditions, we finished considering the standardization of each Works' methods for assessing and treating effluent from new manufacturing processes. We have prepared manuals and are promoting the adoption of standardized methods at each Works.

Using Microbiota Analysis, Microbial Immobilization, and Other Proprietary Technology to Increase the Sophistication of Activated Sludge Treatment
- We use the latest genetic analysis methods to assess the biota comprising the activated sludge, which is processed at each Works independently. We are considering tying the operating requirements for activated sludge treatment to the biota that comprises the sludge. At some Works, for process wastewater that is difficult to break down we use an activated sludge treatment involving microbial immobilization to stabilize the process water and reduce treatment costs. We are still working on determining the relevant issues and responses with regard to activated sludge treatment using microbial immobilization technology.

Helping Create a Sustainable Society

◉

Promoting Sumika Sustainable Solutions
- We are promoting Sumika Sustainable Solutions, which are initiatives to internally designate products and technologies that contribute to global warming countermeasures and environmental impact reduction. A total of 48 products and technologies have been designated, with combined sales of ¥381.3 billion in fiscal 2018 (consolidated). They are projected to contribute to a collective 58 million tons CO_2 equivalent reduction in greenhouse gases throughout their life cycles in fiscal 2020.*3

Improving Energy Efficiency
- Unit energy consumption in fiscal 2018 improved 18.4% compared with fiscal 2005 but worsened 3.7% year on year.
  (Goal: Improve unit energy consumption 15% by fiscal 2020 compared to 2005 levels (Improve 1% per year on average))
- Unit CO_2 emissions from energy in fiscal 2018 improved 15.7% compared with fiscal 2005 and worsened 5.8% year on year.
  (Goal: Improve unit CO_2 emissions from energy use 15% by 2020 compared to 2005 levels (Improve 1% per year on average))

Holding Dialogues with Internal and External Stakeholders
- Explained to internal and external stakeholders the importance of the Company helping to create a sustainable society and the Company's related measures, thereby deepening mutual understanding through dialogue.

*1 Long-range Research Initiative:
Long-term support for research into the effects of chemical substances on human health and the environment

*2 Research Promotion Panel:
Commissioned expert research into the development of new risk methods, assessments, and related activities; held a meeting to report on the results of the research

*3 This value represents the amount contributed to the reduction of greenhouse gases over the life cycles of designated products expected to be sold in fiscal 2020, based on the guidelines of the Japan Chemical Industry Association and the ICCA.

Responsible Care

<Responsible Care (RC) Audits>
Basic Stance

The RC audit is a management system to verify that the RC activities such as ensuring safety and the environment, and maintaining and improving the quality of chemical products are properly implemented. It also promotes process enhancement if areas for improvements are found in those activities.

To promote the Sumitomo Chemical Group's RC global management, RC audit activities are used to study and evaluate duties executed in the course of business and the status of management and supervision from the perspectives of compliance, effectiveness, efficiency, and credibility of financial reporting. By offering advice and proposals for improvement and rationalization, we can prevent compliance violations, corruption, and errors as well as protect corporate assets and enhance operational efficiency. RC audits fulfill the functions of improving management at the Company and Group companies and aid in building, maintaining, and improving the internal control system (responsible audit rules) through the following four-step approach.

Step 1: Sharing Sumitomo's Business Principles and Philosophy
Step 2: Promoting an understanding of and sharing in the Corporate Policy on Safety, the Environment and Product Quality; Policy on Responsible Care Activities; RC management systems; and Group Responsible Care Standards
Step 3: Establishing and developing RC management systems at each Group company
Step 4: Carrying out modifications to the direction and adjusting levels of RC activities by undergoing RC audits

Through face-to-face communication through each of the aforementioned steps, we have successfully provided assistance so that the RC management system is set in place by taking the scale, type of business, and attributes of each Group company into consideration. Relationships built on trust with Group companies that have been nurtured through these RC audits are utilized in various initiatives including individual support and the lively exchange of opinions aimed at resolving a wide range of issues at the Group companies.

Responsible Care

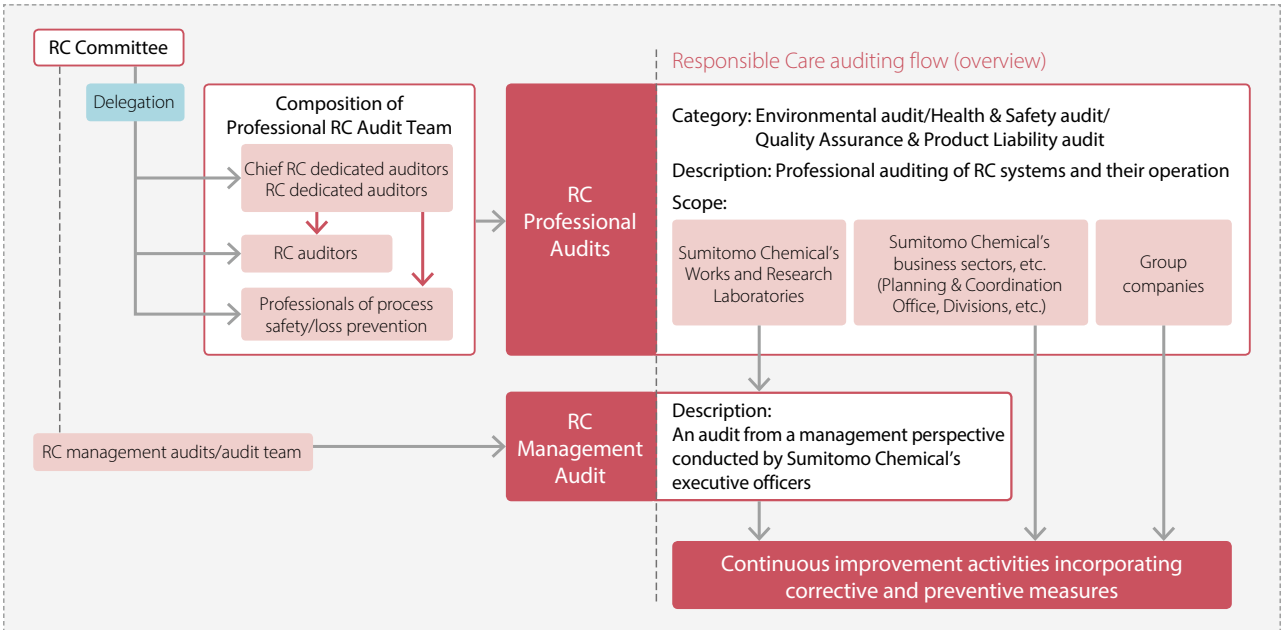
Management System

Sumitomo Chemical has an independent RC audit team. The auditors specially designated by the executive officers in charge of RC have a wealth of knowledge, experience, and technical expertise. Based on the RC audit policies and plans approved by the Responsible Care Committee every year, these auditors directly visit and conduct audits of internal organizations as well as Group companies in Japan and overseas (consolidated business companies that have been determined to need auditing, Group business companies for which auditing has been requested, and listed Group companies (including their subsidiaries)). In addition, RC audits of internal Works and research labs are conducted from a management perspective by an audit team comprising Sumitomo Chemical's executive officers in charge of RC. In line with the important direction provided during an RC audit, the Works and labs report their method for advancing corrective measures, the status of their Responsible Care activities, and important issues to the audit team for discussion.

The Scope and Cycle

In principle, RC audits are conducted every one or two years at Sumitomo Chemical's Works and business sectors, and every three years at Group companies.

■ Responsible Care Auditing Framework



Responsible Care

Goals and Results

Responsible Care Audit Results (Sumitomo Chemical Group)

Facilities		FY2016	FY2017	FY2018
Professional audits*1	Works	9	11	9
	Research laboratories	3	0	1
	Logistics centers	0	0	0
	Business sectors	6	5	4
	Group companies in Japan	18	10	14
	Group companies overseas	7	10	13
Management audits*2	Works and research laboratories	6	6	6
Total		49	42	47

Note: Refer to Responsible Care Auditing Framework on page 62 for more details.
*1 Audits of systems and operations by specialists in each field
*2 Audits from a management perspective by Sumitomo Chemical officers

Professional Audits for Facilities and Business Sectors (FY2018 Results)

Area	Facilities (Works, Research Laboratories)	Business Sectors (Head Office Business Sectors)	Total
Good	22	1	23
Needs improvement	20	4	24
Needs to be examined	82	15	97
Total	124	20	144

Looking Ahead

We continually work to prevent compliance violations, corruption, and errors as well as to improve the management of both Sumitomo Chemical and Group companies while building, maintaining, and improving their internal control systems as needed.

Information Security

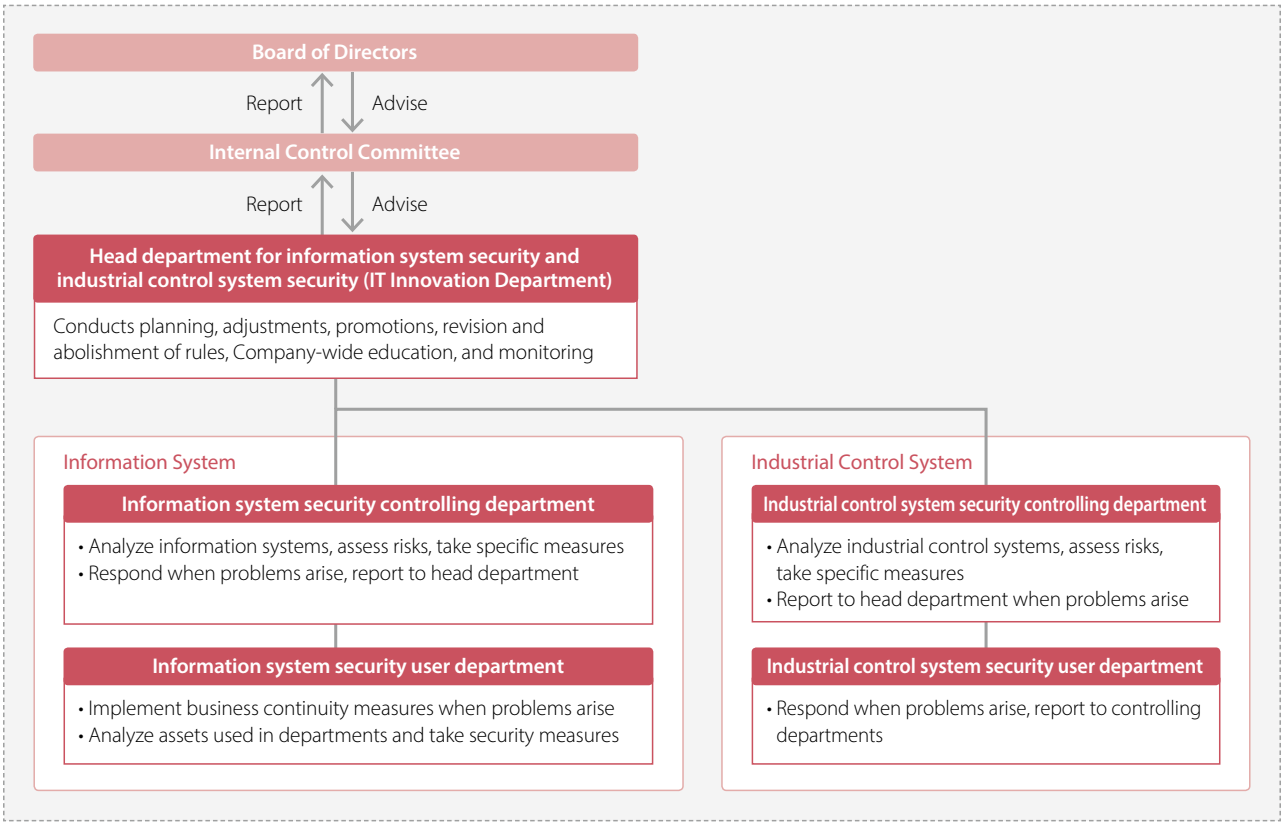
Basic Policy

The impact of advances in the business applications of digitization, including AI and IoT, on information systems has included a rise in such negative factors as increasingly sophisticated cyberattacks. The purpose of information security is to properly manage information, prevent leaks and loss, and minimize the effectiveness of threats to data integrity. We have therefore taken an approach that is multifaceted from the organizational, systems, personnel, technological, and physical points of view.

Management System

Sumitomo Chemical has built the following framework for information system and industrial control system security and implements PDCA cycles.

■ Security Framework for Information System and Industrial Control System



Information Security

Goals and Results

Based on the concept of an information security management system (ISMS), we established a security policy and took necessary measures.

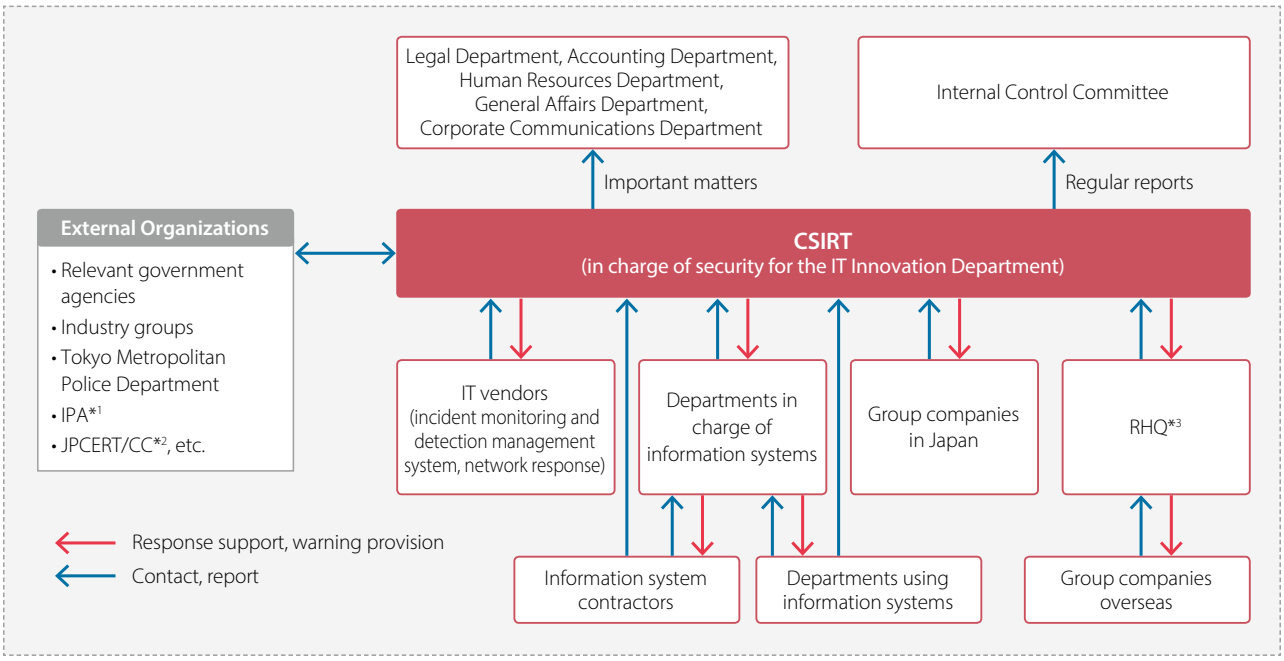
Our basic policy comprises multifaceted security measures (multilayered incident prevention and disaster mitigation), such as those outlined below.

Type of measure	Content of measure
Organizational measures	• Constructed an information system and industrial control system security framework • Constructed an information-sharing framework with inside and outside organizations to ensure preparedness against security incidents
Systematic measures	Periodically conduct security self inspections and conduct IT security internal audits that encompass Group companies
Personnel measures	Carry out various security education programs using e-learning systems (education for new hires, periodic education)
Technological measures	Implement a range of measures, including access restriction, malware measures, and vulnerability measures, for individual servers and computers as well as networks
Physical measures	Use cloud servers complete with entry/exit controls and other security features

Examples of Initiatives

We have established a Computer Security Incident Response Team (CSIRT) in information system security head department (IT Innovation Department). The team analyzes security information from external organizations, provides warnings to the Group, gathers information on security incidents that occur within the Group, and comprehensively manages the Group's response.

Security Incident Response Framework



*1 IPA: Information-Technology Promotion Agency, Japan
*2 JPCERT/CC: Japan Computer Emergency Response Team Coordination Center
*3 RHQ: Regional headquarters

Information Security

Looking Ahead

As an critical infrastructure operator, Sumitomo Chemical considers cyber security to be an essential management issue and will continue responding to growing threats. By taking appropriate system security measures, we will continue to create more value with the aim of supporting the global expansion of business, solving issues in the international community, and enhancing quality of life.

Governance: Supplementary Data

1 Corporate Governance

Board Composition

(Number of people)

Category		FY2017	FY2018	FY2019
Director	Male (Outside Directors)	11 (3)	12 (3)	12 (3)
	Female (Outside Directors)	0 (0)	1 (1)	1 (1)
	Total (Outside Directors)	11 (3)	13 (4)	13 (4)
Corporate Auditor	Male (Outside Corporate Auditors)	5 (3)	5 (3)	5 (3)
	Female (Outside Corporate Auditors)	0 (0)	0 (0)	0 (0)
	Total (Outside Corporate Auditors)	5 (3)	5 (3)	5 (3)

Note: As of July 1 of each fiscal year. All outside board members are independent and have no conflicts of interest with general shareholders.

Independent Board Members (FY2018)

Type of board member	Name	Reasons for appointment	Main activities
Outside Director	Koichi Ikeda	Mr. Koichi Ikeda was elected as an Outside Director of the Company in June 2015 and has since overseen the management of the Company, drawing on his broad experience and profound insight as a manager of a business corporation.	Mr. Ikeda attended all 13 Board of Directors meetings. He provides advice as necessary, mainly rooted in his broad experience as a manager.
	Hiroshi Tomono	Mr. Hiroshi Tomono was elected as an Outside Director of the Company in June 2015 and has since overseen the management of the Company, drawing on his broad experience and profound insight as a manager of a business corporation.	Mr. Tomono attended 12 of 13 Board of Directors meetings. He provides advice as necessary, mainly rooted in his broad experience as a manager.
	Motoshige Itoh	Mr. Motoshige Itoh was elected as an Outside Director of the Company in June 2018 and has since overseen the management of the Company, drawing on his broad experience and profound insight (mainly in the area of economics and social affairs) gained as a member of various government councils in addition to a wealth of professional knowledge accumulated over many years as a professor of economics at a leading university.	Mr. Itoh attended all 10 Board of Directors meetings held since his election. He provides advice as necessary, mainly rooted in his broad experience as a member of various government councils and in his professional knowledge pertaining to economics accumulated over his years as a university professor.
	Atsuko Muraki	Ms. Atsuko Muraki was elected as an Outside Director of the Company in June 2018 and has since overseen the management of the Company, drawing on her broad experience and profound insight (mainly in the area of legal and social affairs) regarding administration gained over many years as a government official.	Ms. Muraki attended all 10 Board of Directors meetings held since her election. She provides advice as necessary, mainly rooted in her broad experience and profound insight mainly in the area of legal and social affairs gained through her many years in administration as a government as a government official.
Outside Corporate Auditor	Mitsuhiro Aso	Mr. Mitsuhiro Aso was elected as an Outside Corporate Auditor of the Company and has since performed audits from an objective standpoint, applying his specialized knowledge and broad experience as a lawyer, including many years as a public prosecutor.	Mr. Aso attended all 13 Board of Directors meetings and all 14 Board of Corporate Auditors meetings. He provides advice as necessary, mainly rooted in his specialized knowledge as a lawyer.
	Yoshitaka Kato	Mr. Yoshitaka Kato was elected as an Outside Corporate Auditor of the Company and has since performed audits from an objective standpoint by applying his specialized knowledge and broad experience from many years as a certified public accountant.	Mr. Kato attended 12 of 13 Board of Directors meetings and all 14 Board of Corporate Auditors meetings. He provides advice as necessary, mainly rooted in his specialized knowledge as a certified public accountant.
	Michio Yoneda	Mr. Michio Yoneda was elected as an Outside Corporate Auditor of the Company and has since performed audits drawing on his broad experience and wide-ranging knowledge regarding industrial and social affairs gained from years of management experience in the Japanese financial and securities markets.	Mr. Yoneda attended all 10 Board of Directors meetings and all 10 Board of Corporate Auditors meetings since his election. He provides advice as necessary, mainly rooted in his extensive experience as a manager in financial and securities markets.

Note: All outside board members are independent and have no conflicts of interest with general shareholders.

Governance: Supplementary Data

2 Compliance

Number of Reports through the Internal Reporting System (Speak-Up Reporting System) (Sumitomo Chemical Group*1)

	FY2018
Number of reports through the Internal Reporting System	149

*1 Includes those listed companies in which the Company holds a stake of 50% or more

Number of Compliance Violations (Sumitomo Chemical and Group Companies)

	FY2018
Number of significant compliance violations	0
Significant violations of antitrust and monopoly legislations	0
Significant violations of anticorruption legislations	0
Significant violations of laws or regulations in the social and economic area besides those mentioned above	0

Training

(%)

			FY2018
Compliance seminars	Sumitomo Chemical		100.0*2 (Conducted at all worksites and departments)
	Group companies:	In Japan	79.5
		Overseas	70.8
Training related to antitrust laws	Sumitomo Chemical		100.0
	Group companies:	In Japan	97.4
		Overseas	89.6

*2 Compliance e-learning training
(Including training related to harassment, corruption prevention and data falsification/manipulation prevention and the dissemination of the Internal Reporting System)
(The Company also conducts training for newly promoted employees and individual training related to product quality, safety, logistics, information security, and other subjects for the relevant employees.)

3 Tax Transparency

The Sumitomo Chemical Group considers paying taxes one of the most fundamental and important social responsibilities of a company. We comply with the tax laws applicable to each country and properly pay taxes in accord with that spirit.

Environment

Contents

70 Environmental Activity Goals and Results
72 Addressing Climate Change
81 Environmental Protection
83 Protecting the Atmospheric Environment
84 Protecting the Aquatic Environment
85 Resource Saving and Waste Reduction
86 Biodiversity Preservation Initiatives
86 Appropriate Management of Chemical Substances
87 Protecting the Soil Environment
88 Environmental Activities: Supplementary Data
88 1 Addressing Climate Change
90 2 Environmental Protection

Contributing to the SDGs through Environmental Activities

Environmental Activity Goals and Results

Goal achieved or steadily progressing: ○ Goal not achieved: △

Items		Boundary	Fiscal 2018 Goals	Fiscal 2018 Results	Evaluation	Fiscal 2019 Goals	Page
Addressing Climate Change	Improve unit CO_2 emissions from energy use	Sumitomo Chemical	Improve 15% by fiscal 2020 compared to fiscal 2005 levels	Improved by 16.0% relative to fiscal 2005	△	Improve 15% by fiscal 2020 compared to fiscal 2005 levels	Pages 72–80
		Sumitomo Chemical and Group companies in Japan	Improve over 1% per year on average	Improved by 0.9% relative to fiscal 2015		Improve over 1% per year on average	
		Group companies overseas	Improve over 1% per year on average	Improved by 3.5% relative to fiscal 2015		Improve over 1% per year on average	
	Improve unit energy consumption	Sumitomo Chemical	Improve 15% by fiscal 2020 compared to fiscal 2005 levels	Improved by 18.4% relative to fiscal 2005	△	Improve 15% by fiscal 2020 compared to fiscal 2005 levels	
		Sumitomo Chemical and Group companies in Japan	Improve over 1% per year on average	Improved by 0.3% relative to fiscal 2015		Improve over 1% per year on average	
		Group companies overseas	Improve over 1% per year on average	Improved by 2.9% relative to fiscal 2015		Improve over 1% per year on average	
	Improve unit energy consumption in the logistics division	Sumitomo Chemical and Group companies in Japan*	Improve over 1% per year on average over five years	Improved by an annual average of 1.0% over five years	○	Improve over 1% per year on average over five years	

Note: Further details are provided in the supplementary data (pages 88–89).

* Within the scope of specified shippers according to the definition stipulated under the Act on the Rational Use of Energy

Environmental Activity Goals and Results

Goal achieved or steadily progressing: ○ Goal not achieved: △

Items		Boundary	Fiscal 2018 Goals	Fiscal 2018 Results	Evaluation	Fiscal 2019 Goals	Page
Environmental Protection	Severe environmental accidents	Sumitomo Chemical and consolidated subsidiaries in Japan and overseas	0	0	○	Severe environmental accidents = 0	
	Laws and regulations, etc.	Sumitomo Chemical	Properly respond to more stringent laws and regulations and proactively address trends in new environmental regulations	Studied and responded to amendments to the PRTR Act, WET, and the Air Pollution Control Act (asbestos). Thoroughly discussed legislation to ease or tighten regulations with the Diet.	○	Properly respond to more stringent laws and regulations and proactively address trends in new environmental regulations	
	Environmental protection management methods, etc.	Sumitomo Chemical	Provide individual support to Group companies for responding to environmental regulations	Provided individual support related to the Waste Management and Public Cleansing Law and the Act on Promotion of Global Warming Countermeasures	○	Provide individual support to Group companies for responding to environmental regulations	
	Prevention of air and water pollution	Sumitomo Chemical	Meet voluntary management criteria*1	There was one instance of the legal standard limit being exceeded and another instance where a limit agreed upon with a municipality was exceeded. We have investigated the causes and taken countermeasures.	△	Meet voluntary management criteria	
	Effective use of water resources	Sumitomo Chemical	Promote effective and efficient use of water resources	Unit water usage fell by 1.6% relative to fiscal 2017	○	Promote effective and efficient use of water resources	
		Group companies overseas	Improve unit water consumption by at least 1% on average per year	Unit water consumption improved by 5.6% relative to fiscal 2015		Improve unit water consumption by at least 1% on average per year	
	Response to PRTR	Sumitomo Chemical	Maintain 60% lower total emissions relative to fiscal 2008	Reduced emissions by 90.1% relative to fiscal 2008	○	Maintain 60% lower total emissions relative to fiscal 2008	
		Sumitomo Chemical and Group companies in Japan	Maintain total emissions of air and water pollutants at below fiscal 2015 levels to fiscal 2020	Reduced emissions by 15.9% relative to fiscal 2015		Maintain total emissions of air and water pollutants at below fiscal 2015 levels to fiscal 2020	
	Reduction of VOC emissions	Sumitomo Chemical	Maintain VOC emissions reductions at 30% relative to fiscal 2000	Reduced emissions by 41.7% relative to fiscal 2000	○	Maintain VOC emissions reductions at 30% relative to fiscal 2000	Pages 81–87
	Prevention of soil and groundwater contamination	Sumitomo Chemical and Group companies in Japan	Keep hazardous materials strictly within Company premises*2	Kept hazardous materials strictly within Company premises	○	Keep hazardous materials strictly within Company premises	
	Prevention of ozone layer depletion	Sumitomo Chemical and Group companies in Japan	• Eliminate the use of refrigeration units that use CFCs as coolants by fiscal 2025 • Eliminate the use of refrigeration units that use HCFCs as coolants by fiscal 2045	Systematically replaced refrigeration units that use CFCs and HCFCs as coolants	○	•Eliminate the use of refrigeration units that use CFCs as coolants by fiscal 2025 • Eliminate the use of refrigeration units that use HCFCs as coolants by fiscal 2045	
	Conservation of Biodiversity	Sumitomo Chemical	Ensure compliance with "Sumitomo Chemical's Commitment to the Conservation of Biodiversity"	Ensured compliance with "Sumitomo Chemical's Commitment to the Conservation of Biodiversity" and promoted detailed initiatives	○	Ensure compliance with "Sumitomo Chemical's Commitment to the Conservation of Biodiversity"	
	Reduce the amount of industrial waste sent to landfills	Sumitomo Chemical	Maintain 80% reduction compared to fiscal 2000 levels	Reduced emissions by 83.7% relative to fiscal 2000	○	Maintain 80% reduction compared to fiscal 2000 levels	
		Sumitomo Chemical and Group companies in Japan	Maintain waste volume at below fiscal 2015 levels to fiscal 2020	Reduced by 1.9% relative to fiscal 2015	○	Maintain waste volume at below fiscal 2015 levels to fiscal 2020	
	Properly treated PCB waste	Sumitomo Chemical and Group companies in Japan	• (High concentrations of PCB*3) Work toward appropriate storage and recovery of waste containing high concentrations of PCBs and complete PCB waste treatment at an early stage • (Minute amounts of PCB*4) Work toward appropriate storage and recovery of waste containing minute amounts of PCBs and complete PCB waste treatment by March 2025	• (High concentrations of PCB) Sumitomo Chemical: Completed treatment Group companies in Japan: Continuing treatment; continued to promote the storage and recovery of untreated waste • (Minute amounts of PCB) Implemented the treatment of waste containing minute amounts of PCBs at certain factories; continued to promote the storage and recovery of untreated waste	○	• (High concentrations of PCB) Work toward appropriate storage and recovery of waste containing high concentrations of PCBs and complete PCB waste treatment at an early stage • (Minute amounts of PCB) Work toward appropriate storage and recovery of waste containing minute amounts of PCBs and complete PCB waste treatment by March 2025	

Note: Further details are provided in the supplementary data (pages 90–108).

*1 Voluntary management targets that are stricter than the criteria of relevant laws and regulations, including agreements reached with local authorities.
*2 Keep hazardous materials strictly within Company premises: Controlled on the premises.
*3 High concentrations of PCB: Polychlorinated biphenyl (PCB) intentionally used as insulation oil in such items as electric appliances
*4 Minute amounts of PCB: PCB unintentionally mixed in as insulation oil in such items as electric appliances (over 0.5mg/kg)

Addressing Climate Change

Basic Stance

The Sumitomo Chemical Group considers climate change one of the most pressing challenges facing society. To address this problem, we are actively working to reduce greenhouse gases by utilizing the technology we have cultivated as a diversified chemical company. We are also taking action to respond to risks and to seize opportunities related to solving climate change-related problems that are having a major impact on people's lives on a global scale.

Management System

The Group is addressing climate change as one of its Responsible Care activities (refer to page 56 "Organization of Responsible Care"). Key matters are regularly discussed at Management Meetings, Sustainability Promotion Committee Meetings, and Responsible Care Committee Meetings, where the relevant measures to take are determined. The Responsible Care Committee also assesses and monitors risks related to climate change issues.

A wide range of specific issues related to energy and greenhouse gases are taken up for detailed discussion at Company-wide Science Based Targets (SBTs) GM Meetings, Company-wide Energy Manager Meetings, Department Liaison Meetings on Global Warming, Group Company Information Exchange Meetings, and other gatherings. Through the establishment of these various meetings, we have created a system capable of steadily and swiftly sharing important information in addition to managing energy and greenhouse gases for Works, research laboratories, business sectors, and Group companies.

Meeting	Coordinator	Members	Content
Company-wide SBTs GM Meeting	Managing executive officer (Responsible Care manager)	General managers in charge of SBTs at individual worksites	Discussing various measures aimed at achieving SBTs
Company-wide Energy Manager Meeting	Responsible Care general manager	Section managers in charge of Energy and GHGs at their worksites	Sharing and spreading information on initiatives at each worksite
Department Liaison Meeting on Global Warming	Responsible Care general manager	Section managers in charge of climate change action at the departmental and corporate levels	Sharing Company-wide policies and ESG issues
Group Company Information Exchange Meeting	Managing executive officer (Responsible Care manager)	Managers in charge of climate change action for Group companies	Sharing Group policies and issues and promoting best practices

Goals and Results

For goals and results for Addressing Climate Change, refer to Environmental Activity Goals and Results.

P.70 Addressing Climate Change

Addressing Climate Change

★: Assured by an independent assurance provider

Energy Consumption and Greenhouse Gas Emissions

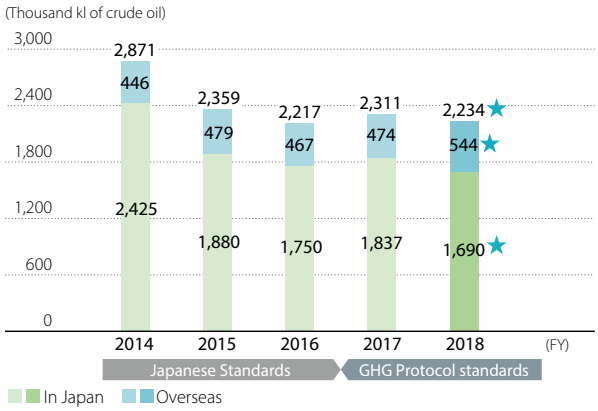
The Group's greenhouse gas emissions for fiscal 2017 onward are calculated in accordance with the GHG Protocol (refer to page 167 "Calculation Standards for Environmental and Social Data Indicators"). The boundary of calculation has been expanded to include principal consolidated Group companies, which account for up to 99.8% of consolidated net sales.

Greenhouse Gas Emissions ★

(Thousand tons of CO_2e)

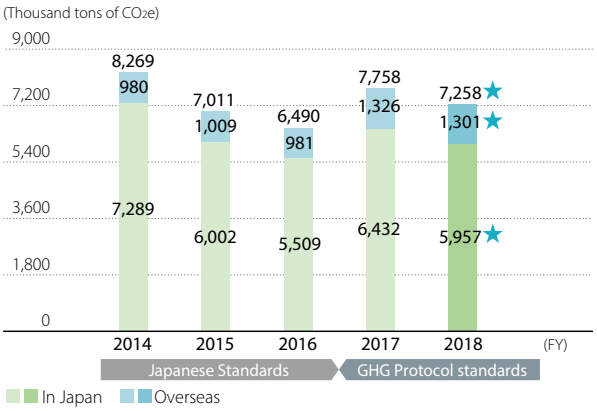
	Sumitomo Chemical and Group Companies in Japan	Overseas Group Companies	Total
Scope1	5,633	432	6,065
Scope2	324	869	1,193
Total	5,957	1,301	7,258

Energy Consumption



Notes: • Japanese Standards: Calculated based on the Act on the Rational Use of Energy.
• Having adopted the GHG Protocol standards for our GHG emission disclosures, we now include the following data previously excluded from calculations: amount of energy consumed in the production of power and steam sold to external parties by Sumitomo Chemical Group (the portion attributable to energy provider subsidiaries was included in years prior to fiscal 2016). The amount of energy consumed by Sumitomo Chemical's non-production sites and the Group's non-production sites is included from fiscal 2017 and fiscal 2018, respectively.

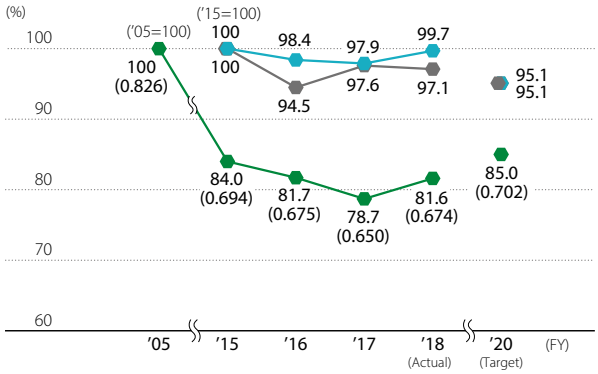
Greenhouse Gas Emissions



Notes: • Japanese Standards: Calculated based on the Act on the Rational Use of Energy and the Act on Promotion of Global Warming Countermeasures.
• Having adopted the GHG Protocol standards for our GHG emission disclosures, we now include the following data that was not included in previous calculations: CO_2 emissions from energy sold to external parties by the Group (the portion attributable to energy provider subsidiaries was included prior to fiscal 2016); CO_2 emissions from energy use attributable to Sumitomo Chemical's non-production sites; CO_2 emissions from non-energy sources not included in the scope of the Act on Promotion of Global Warming Countermeasures. CO_2 emissions from energy use attributable to Sumitomo Chemical's non-production sites and the Group's non-production sites is included from fiscal 2017 and fiscal 2018, respectively.

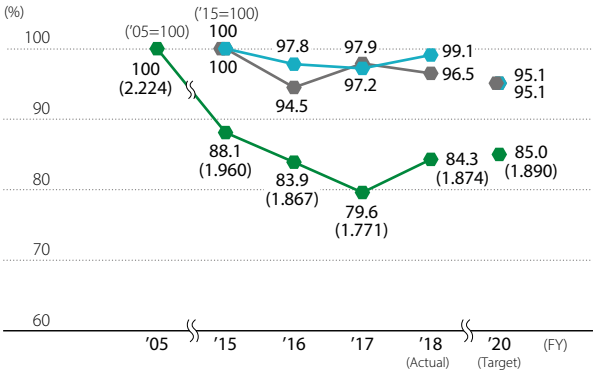
Unit Energy Consumption and Unit CO_2 Emissions (Production Bases)

Unit Energy Consumption Index



Notes: • The figures are indexed to energy consumption (kl) at production bases per production volume (tons).
• Values in parentheses are unit figures based on Sumitomo Chemical's results.
• Calculated based on the Act on Rational Use of Energy in order to show the Common Energy and Environmental Protection Targets of Sumitomo Chemical Group.

Unit CO_2 Emissions Index



Notes: • The figures are indexed to CO_2 emissions from energy use (tons) at production bases per production volume (tons).
• Values in parentheses are unit figures based on Sumitomo Chemical's results.
• Calculated based on the Act on Promotion of Global Warming Countermeasures in order to show the Common Energy and Environmental Protection Targets of Sumitomo Chemical Group.

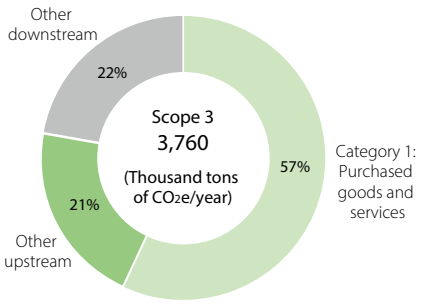
Addressing Climate Change

★: Assured by an independent assurance provider

Status of Scope 3 GHG Emissions

Category	Emissions (Thousand tons of CO_2e/year)
1. Purchased goods and services ★	2,132
2. Capital goods	394
3. Fuel- and energy-related activities not included in Scopes 1 and 2 ★	298
4. Upstream transportation and distribution ★	61
5. Waste generated in operations ★	30
6. Business travel	7
7. Employee commuting	9
8. Upstream leased assets	<1
9. Downstream transportation and distribution	<1
10. Processing of sold products	—
11. Use of sold products ★	44
12. End-of-life treatment of sold products	780
13. Downstream leased assets	—
14. Franchises	—
15. Investments	—

Notes: • For Scope 3 data, indirect greenhouse gas emissions from business activities throughout the supply chain are calculated separately by category and then added together.
• Calculated for Sumitomo Chemical and Group companies listed on stock indices in Japan (Sumitomo Dainippon Pharma Co., Ltd.; Koei Chemical Co., Ltd.; Taoka Chemical Co., Ltd.; and Tanaka Chemical Corporation).
• Category 4 does not include Taoka Chemical Co., Ltd., but includes Nippon A & L Inc.



Addressing Climate Change

Examples of Initiatives

Responding to Risks and Seizing Opportunities related to Climate Change

The Sumitomo Chemical Group identifies and analyzes the risks and opportunities posed by climate change issues to its business over the medium to long-term, including the size, scope of impacts, and other issues. In addition, we are implementing measures to respond to risks through initiatives for achieving our SBTs, and striving to seize new business opportunities through the development and spread of products and technologies designated as Sumika Sustainable Solutions. Concrete initiatives are reported to management meetings, the Sustainability Promotion Committee, the Responsible Care Committee, the Plant Managers' Meetings, and the Group-wide President Meetings.

Risks

Transition risks
- Increases in tax burden due to the introduction and increase of carbon prices
- Increases in manufacturing costs associated with the increase in energy taxes
- Higher logistics costs due to higher energy prices

Physical risks
- Damage to production facilities due to wind and flood damage caused by abnormal weather
- Decline in sales of related businesses due to changes in crop cultivation in various regions worldwide due to abnormal weather conditions

Opportunities

- Expanding the market for products that contribute to reducing GHG emissions
- Expanding the market for products that adapt to climate change impacts
- Expanding the market for low-carbon processes
- Fostering new businesses in the field of climate change countermeasures through R&D and digital innovation

Responding to Risks

- Initiatives for achieving our SBTs
  - Revision of the internal carbon price system to strengthen energy conservation and promote investment in GHG emissions reduction
  - Fuel conversion (Niihama LNG Station, renewable energy utilization, etc.)
  - Introduction of innovative low-carbon technologies
  - Initiatives to raise awareness within the Group and foster momentum
  - Approaching major suppliers about setting GHG emissions reduction targets
- Strengthening measures against wind and flood damage at production bases

Initiatives for Seizing Opportunities

- Expansion of sales of products designated as Sumika Sustainable Solutions
  - Products that contribute to reducing GHG emissions
  - Products, components, and materials used in connection with the creation of new forms of energy
  - Products that contribute to adaptation to climate change impacts
- Expanding licensing revenues for low-carbon process technologies
- Acquisition of investment funds through information disclosure

Science Based Target Initiative

Science-based targets (SBTs) are greenhouse gas emissions reduction targets set by companies, based on climate science, to meet the 2015 Paris Agreement goal of keeping the increase in global average temperatures to below 2°C compared to pre-industrial temperatures. In March 2018, medium to long-term plans for greenhouse gas (GHG) reductions were deliberated at our management meeting and we agreed to establish science-based targets (SBTs) in accordance with the Science Based Targets. Then in October 2018, Sumitomo Chemical gained approval from the Science Based Targets initiative for the company's Group-wide greenhouse gas emissions reduction targets. Sumitomo Chemical is the first diversified chemical company in the world to have obtained this approval.

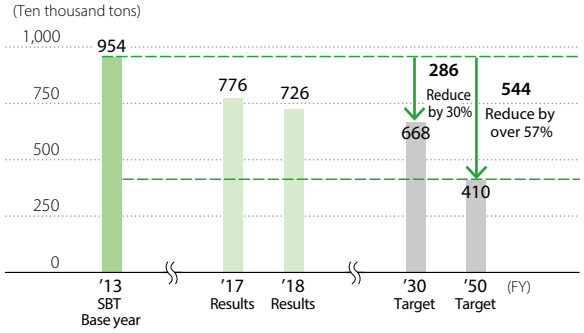
Addressing Climate Change

Our Approved GHG Emissions Reduction Targets

Scope 1+2*1		Scope 3*2
By FY2030 **Reduce by 30%** (vs. FY2013)	By FY2050 **Reduce by over 57%** (vs. FY2013)	By FY2024 **Have major suppliers set reduction targets*3**

*1 Scope 1: Direct emissions from factory operations, such as fuel use in manufacturing processes
Scope 2: Indirect emissions from purchases of power and heat from outside the factory
*2 Scope 3: Emissions from the manufacturing and transportation of purchased raw materials
*3 Covers suppliers accounting for 90% of procured raw materials and other items based on weight

Greenhouse Gas (GHG) Emission Volume and Reduction Targets



The baseline year for the Sumitomo Chemical Group's science-based targets is fiscal 2013, which is the same baseline year used by the Japanese government for GHG emissions reduction targets in accordance with the Paris Agreement. Our Group will focus on reducing its GHG emissions (Scope 1+2) by 57% or more from fiscal 2013 levels by fiscal 2050, while providing solutions for significant GHG reductions in the value chain.

Addressing Climate Change

Promoting Sumika Sustainable Solutions

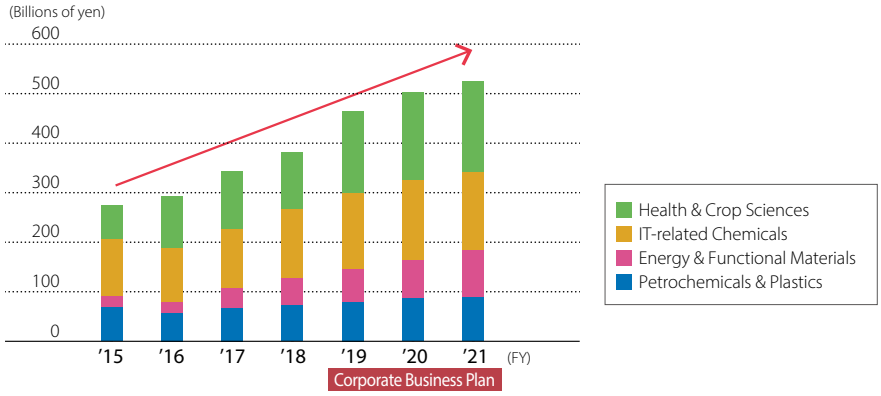
Through the initiative of Sumika Sustainable Solutions, which began in 2016, the Group has been working to develop and promote its products and technologies that help mitigate climate change*1 and facilitate adaptation to climate change.*2 (refer to page 15.)

*1 Reducing and absorbing greenhouse gases
*2 Working to stem or lessen the current effects of climate change as well as harnessing the new climatic conditions

Sumika Sustainable Solutions

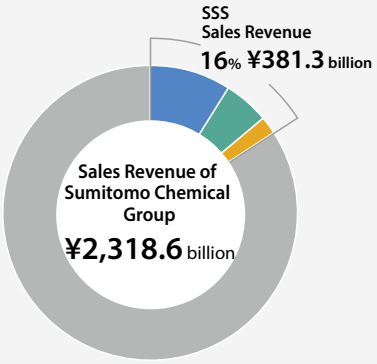
https://www.sumitomo-chem.co.jp/english/sustainability/sdgs/sss/

Sales Revenue of Designated Products and Technologies



A total of 48 products and technologies have been designated so far, and Sumitomo Chemical aims to quickly double their sales revenue compared with FY2015.

Breakdown by Designation Area (FY2018 Results)



- **Addressing Climate Change**
  Reduction in greenhouse gas emissions due to products and technologies designated in this area, across the life cycles of the products: Approximately 58 million tons (CO_2 equivalent, predicted total by FY2020)
- **Reducing Environmental Impact**
  FY2018 sales revenue of products and technologies designated in this area: 5% increase (compared with FY2017)
- **Effective Use of Resources**
  Reduction in water use per year due to products and technologies designated in this area: 50,000 tons

Addressing Climate Change

★: Assured by an independent assurance provider

Measures for Adaptation

Understanding that climate change must be addressed, people are paying more attention to the development of products and technologies that can facilitate adaptation to the changes. Under the banner of Sumika Sustainable Solutions, the Sumitomo Chemical Group has certified many of its products and technologies that promote adaptation. These include vector control products (to ward off infectious disease-carrying pests whose spread correlates with climate change), mycorrhizal fungi for use as a soil amendment product (to extend growing periods during droughts by 30% and improve crop yields), and clear acrylic windows for seawalls that protect against high tides and tsunami.

Of these products, the Company's malaria prevention mosquito net Olyset™ Net was introduced as a tool for helping prevent a rise in malarial infections due to climate change on the side event of COP22, which was held in Morocco in November 2016, and on the side event of COP23, which was held in Germany in November 2017. It was also introduced at Japan's Ministry of the Environment's Climate Change Adaptation Information Platform, Japan's Ministry of Economy, *Trade and Industry's Climate Change Adaptation Good Practices by Japanese Private Sector*, and other venues.

Japan's Ministry of the Environment's Climate Change Adaptation Information Platform

http://www.adaptation-platform.nies.go.jp/en/index.html

Japan's Ministry of Economy, *Trade and Industry's Climate Change Adaptation Good Practices by Japanese Private Sector*

http://www.adaptation-platform.nies.go.jp/en/lets/adaptationbiz/sumitomokagaku.html

Initiatives Aimed at Reducing Greenhouse Gas Emissions at Each Worksite

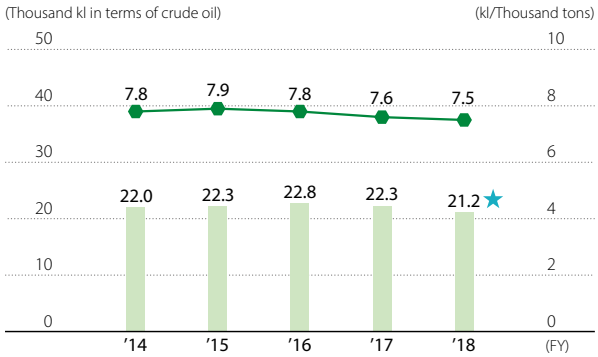
Each Sumitomo Chemical worksite helps reduce greenhouse gas emissions, including in the following ways: installing the latest highly efficient equipment; introducing rationalization and energy-saving measures in production processes; switching to lower-carbon fuels and other forms of energy; installing LED lighting; and soliciting employee suggestions on how to further improve our energy-saving efforts. Furthermore, regarding cleanrooms and other facilities where finding ways to save energy is difficult and requires a high level of expertise, we have launched initiatives in cooperation with experts. Information on the state of these activities is exchanged at Energy Manager Meetings, at which representatives from each worksite gather in one location to work on reducing the greenhouse gas emissions of the Company as a whole.

Logistics Initiatives

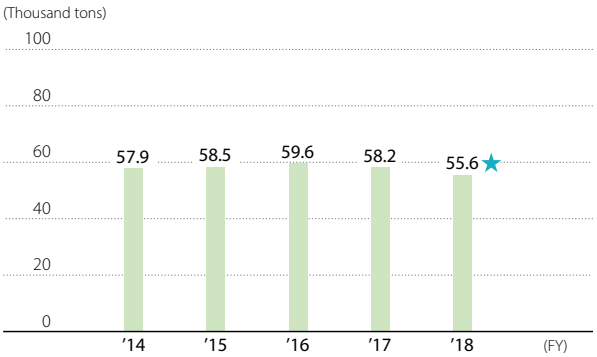
Sumitomo Chemical continues to promote modal shift, or transportation by more efficient and environmentally friendly modes, such as rail and ship instead of trucks. In fiscal 2018, unit energy consumption fell (improved) by 1.6% compared with fiscal 2017, an average of a 1% improvement over the past five years. We will continue to improve unit energy consumption by our target of 1% or more.

Reduction of Environmental Impact in Logistics Operations (Sumitomo Chemical and Group companies in Japan)

Energy Consumption



CO_2 Emissions



Energy consumption (left axis) Unit energy consumption (right axis)

Note: Calculated for Sumitomo Chemical and a Group company in Japan (specified consigner: Nippon A&L Inc.)

Addressing Climate Change

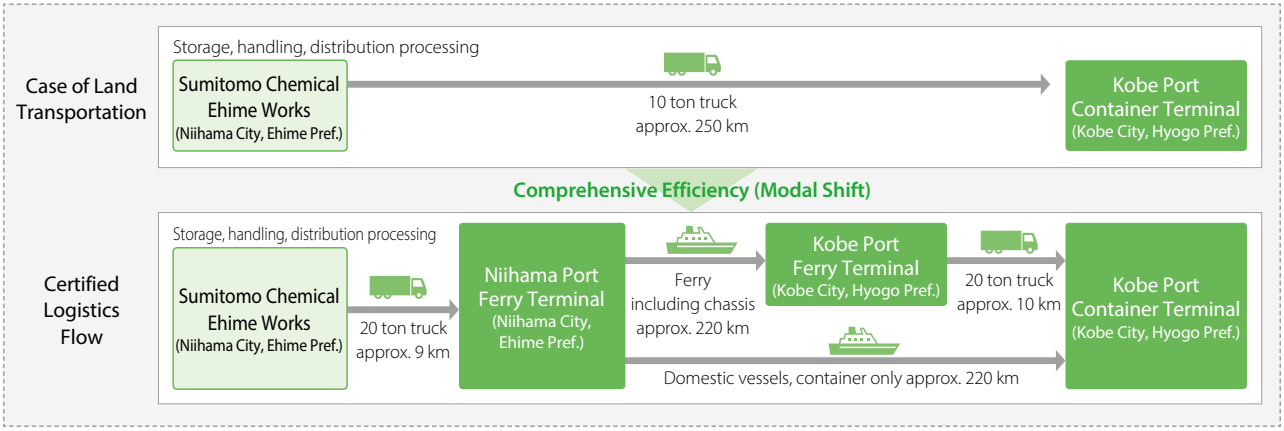
Feed Additive Methionine Logistics Operations Certified by Government as "Comprehensive Efficiency Plan"

In April 2019, Sumitomo Chemical, The Sumitomo Warehouse Co., Ltd., and Shikoku Kaihatsu Ferry Co., Ltd. jointly have received a "Comprehensive Efficiency Plan" certification from Japan's Ministry of Land, Infrastructure, Transport and Tourism with respect to the companies' certain business plan involving domestic transportation by ship in Japan of feed additive methionine produced at the Sumitomo Chemical's Ehime Works ("Ehime Works"). This certification is issued in accordance with "Act on Advancement of Integration and Streamlining of Distribution Business."

The Act stipulates, among others, certifying selected business projects or initiatives as "Comprehensive Efficiency Plan," along with the provision of related supportive measures, where rationalized transportation of materials will make their distribution operations more efficient while at the same time lessening environmental impact or reducing required manpower during the course of materials distribution. If the certification is granted, business operators are entitled to receive various benefits, including special tax treatment.

The tripartite business plan certified by the Ministry encompasses operations for transporting by ship nearly all the distance of methionine from the Ehime Works to Kobe Port with respect to the expanded production of methionine* as above. In granting the certification, the Ministry duly recognized the distinctive advantage resulting from the business plan that CO_2 emissions will lower by approximately 55%, truck transportation will decrease by approximately 94%, and truck drivers' working hours will drop by approximately 91%, all compared with equivalent instances of the methionine transported to Kobe Port entirely by land.

* Sumitomo Chemical expanded the production capacity of methionine at the Ehime Works in October 2018 from approximately 150,000 metric tons per annum to approximately 250,000 metric tons per annum. We plan to further increase the amount of methionine transported to Kobe port, a main export port.



Evaluating Water-Related Problems

The Group is evaluating water-related risks at each production base from the perspective of water supply and demand risks and water pollution susceptibility risks.

Evaluating Water Supply and Demand Risks

The Group evaluates the baseline water stress in communities where a plant is located as well as underground water stress, the severity of droughts caused by seasonal changes in the water supply, the water storage capacity of the drainage basin, projected changes in water stress, and the percentage of water resources in the drainage basin that are protected.

Evaluating Water Pollution Susceptibility Risks

The Group evaluates water supply and demand and its fragility in terms of access to drinking water, water pollution, protected downstream areas, and the presence of endangered species in bodies of fresh water identified by the International Union for Conservation of Nature (IUCN).

As a result of the evaluation results, we are taking specific actions to reduce risks going forward for plants evaluated to have high water-related risks.

Addressing Climate Change

The BioCarbon Fund*

Sumitomo Chemical finances afforestation projects in developing countries and poverty-stricken countries through the World Bank's BioCarbon Fund. These projects are geared to contribute to the restoration of abandoned land, the conservation of water resources, biodiversity conservation, and the reduction of greenhouse gases. Since participating for the first time in 2005, Sumitomo Chemical has been involved in multiple afforestation projects, which have led to a combined total of 229 thousand tons in reductions in CO_2 emissions.

* BioCarbon Fund:
This fund was established by the World Bank to finance projects to plant trees and preserve forests with the objective of acquiring CO_2 credits (emissions rights issued based on the volume of CO_2 reduced or absorbed as a result of projects designed to reduce greenhouse gases).

R&D Initiatives for Addressing Climate Change

One of the basic policies of the Medium-Term Corporate Business Plan (FY2019–2021) is accelerating the development of next-generation businesses. One priority area of that policy is reducing environmental impact. Sumitomo Chemical has identified energy storage, energy conservation, and carbon recycling as areas of strength that are indispensable to helping solve climate change problems and for which the Company can use the technologies it has cultivated to date.

In the field of energy storage, we are developing next-generation batteries and fully solid state battery materials that help reduce greenhouse gas emissions. In addition, in the field of energy conservation, we strive to develop water treatment processes with low environmental impact and CO_2 separation membranes to enhance energy efficiency. In the field of carbon recycling, we are currently working to develop bioprocesses that use synthetic biology and chemical production processes that use carbon capture and utilization (CCU).

Moreover, as an initiative to ensure next-generation energy, we are conducting a survey related to CO_2-free hydrogen manufacturing technologies that do not emit CO_2 during the manufacturing stage and their effective implementation.

In these fields, we are promoting research and development while actively installing external technologies in collaboration with academia and startup companies.

External Evaluations

Sumitomo Chemical was selected for the A List, the highest evaluation, in the CDP's climate change action survey. (January 2019)

https://www.sumitomo-chem.co.jp/english/news/detail/20190122e.html

Sumitomo Chemical was ranked first among 37 chemical companies in Japan in the 10th Corporate Climate Action Survey by the World Wide Fund for Nature Japan (WWF Japan), under the materials industry section. (May 2019) (Japanese only)

https://www.wwf.or.jp/activities/activity/3967.html

The Japan Chemical Industry Association awarded the Sumitomo Chemical Group the Examiner's Special Award at the 13th JCIA Responsible Care Awards (Japanese only) for the Group's initiatives aimed at realizing a low-carbon society. (June 2019)

Looking Ahead

The Sumitomo Chemical Group will continue actively working to solve climate change problems using the technological capabilities it has cultivated as a diversified chemical company.

Environmental Protection

Basic Stance

The Sumitomo Chemical Group is working in unison to reduce its environmental impact. Specifically, we have set out goals in each field, including protecting the atmosphere and aquatic environments, conserving resources and managing waste, properly managing chemical substances, protecting biodiversity, and protecting soil environments. Each worksite is striving to enhance its initiatives aimed at achieving these goals.

During the three years of the previous medium-term Corporate Business Plan (FY2016–2018) we emphasized initiatives to appropriately respond to laws and regulations and to reduce environmental impact and achieved some success.

Over the course of the three years of the new medium-term Corporate Business Plan (FY2019–2021) we aim to continue strengthening and enhancing our initiatives based on voluntary control and further enhance the level of activity undertaken by the consolidated Group. We also strive to more accurately and quickly disclose environmental performance indicators.

We are focusing on the following specific measures.

1. Appropriate Response to Laws and Regulations
   (1) By maintaining careful control of the execution and management of construction plans, we ensure appropriate response to notifications when changing the soil type of specified facilities that use hazardous substances and an expansion of opportunities for soil contamination surveys. (Soil Contamination Countermeasures Act)
   (2) We have enhanced the evaluation and management of environmental risks related to substances expected to become subject to PRTR Act surveys. (PRTR Act)
   (3) Regarding refrigeration units using CFCs and HCFCs, we are systematically upgrading to equipment that uses low-GWP HFCs or non-fluorocarbon refrigerants (Ozone Layer Protection Law). We are also minimizing fluorocarbon leaks into the atmosphere from refrigeration and air conditioning equipment. (Act for Rationalized Use and Proper Management of Fluorocarbons)
   (4) We will systematically remove all electronic equipment that uses PCBs (in storage or in operation) by March 2025. (Act on Special Measures against PCB Waste)

2. Reducing Environmental Impact
   Going forward, we will keep working to achieve our medium- to long-term voluntary management targets in the fields of air, water, soil, and waste, focusing our response on production sites.

Management System

The president and the executive officers in charge of Responsible Care serve as the coordinators of the Environment and Safety Group of the Responsible Care Department. This group is responsible for matters related to environmental protection for the Company as a whole and supports the environmental protection activities of Group companies.

Our worksites (head offices, Works, research laboratories) have established sections in charge of environmental protection operations, appointed coordinators, and execute specific duties. Regarding the execution of duties, the corporate department (Responsible Care Department) formulates Company-wide annual policies and Company-wide medium-term (three-year) policies every fiscal year. Then each worksite, in light of these policies and in consideration of its own characteristics and regional situation, formulates an action policy and launches specific activities from the new fiscal year.

Regarding amendments to laws and regulations, the Responsible Care Department vigilantly pays attention to national trends and, as appropriate, provides feedback to the national governments. In this way we strive to ensure the situation (details of the amendments, possible impacts, visualization of countermeasures, etc.) is within the Company's control. As for amendments that have a large impact, we access the necessary information in advance and notify worksites to prepare for meeting compliance requirements.

Note: "Organization of Responsible Care" is detailed on page 56.

Environmental Protection

★: Assured by an independent assurance provider

Goals and Results

The Sumitomo Chemical Group has established key environmental protection items as common goals. By following up on the results of each company, we are working to reduce our environmental impact in a systematic way.

P.71 Environmental Protection

Environmental Performance

Sumitomo Chemical collects and totals environmental data for the Company and Group companies in Japan, including data on energy and resource consumption, production quantities, and environmental impact (e.g., release of pollutants into the air and water).

PP.90-92 Environmental Performance (FY2016–2018)

Primary Environmental Performance (Fiscal 2018)

Figures in black: Sumitomo Chemical and Group companies in Japan
Figures in green: Sumitomo Chemical

INPUT Energy and Resources

Water ★

		(Million tons)
Industrial water	63.3	59.8
Drinking water, etc.	0.8	0.5
Seawater	848.1	166.5
Groundwater	22.7	20.0
Other water	2.4	2.4

Energy ★
Calculated as kl of crude oil

		(Thousand kl)
Fuel, heat, and electricity*1	1,690	992

Exhaustible Resources

		(Thousand tons)
Hydrocarbon compounds	1,676	1,383
Metals (excluding minor metals)*2	121	117
Minor metals*3	13.54	0.07

PCB/CFCs under Secure Storage

No. of electrical devices containing high concentrations of PCBs*4	10 units	0 units
PCB volume*4	0.1 kl	0 kl
No. of refrigeration units using specified CFCs as a coolant	32 units	4 units
No. of refrigeration units using HCFCs as a coolant	272 units	73 units

OUTPUT Product Manufacturing and Environmental Impact

Products ★

		(Thousand tons)
(Calculated on the basis of ethylene production)*5	2,490	1,343

Water Pollutant Emissions ★

			(Tons)
COD	Coastal waters/waterways	998	923
	Sewer systems	216	117
Phosphorus	Coastal waters/waterways	35	33
	Sewer systems	5	5
Nitrogen	Coastal waters/waterways	1,488	1,392
	Sewer systems	96	46
Substances subject to the PRTR Act*6		13	8

Waste Materials ★

		(Thousand tons)
Waste emissions*7	244	52
Landfill*7	23	4.0
(Breakdown)		
On-site landfill	0	0
External landfill	23	4

Atmospheric Emissions ★

		(Thousand tons of CO_2e)
Greenhouse gases (seven gases)*1	5,957	3,394
Emissions from energy use (CO_2)	5,172	2,734
CO_2 emissions from other than energy use	684	637
N_2O	101	23
HFC, PFC, CH_4, SF_6, NF_3 *8	—	—

		(Tons)
Others		
NOx	4,326	1,700
SOx	5,152	1,480
Soot and dust	222	96
Substances subject to the PRTR Act*6	458	233

*1 The energy (calculated as kl of crude oil) and greenhouse gas (all seven gases) indices were calculated in accordance with the GHG Protocol (refer to page 167 "Calculation Standards for Environmental and Social Data Indicators") for principal consolidated Group companies in Japan, which account for up to 99.8% of consolidated net sales.
• Having adopted the GHG Protocol standards for our GHG emission disclosures, we now include the following data that was not included in previous calculations: amount of energy used to produce electricity and steam sold to external parties by the Group and the resultant CO_2 emissions; amount of energy used by Sumitomo Chemical and Group companies in Japan non-production sites and the resultant CO_2 emissions; CO_2 emissions from non-energy sources not included in the scope of the Act on Promotion of Global Warming Countermeasures.
*2 Calculations include the following 12 metals: iron, gold, silver, copper, zinc, aluminum, lead, platinum, titanium, palladium, gallium, and lithium.
*3 Calculations include the following seven rare metals: nickel, chromium, tungsten, cobalt, molybdenum, manganese, and vanadium. The supply structure for each of these rare metals is extremely fragile. These rare metals are subject to national stockpiling.
*4 Fluorescent lamps and mercury lamp ballast as well as contaminated substances (wastepaper, etc.), including PCB waste, are not included in unit and volume data.
*5 Certain assumptions were made in calculations due to the difficulty of obtaining weight-based figures for some products.
*6 Calculated based on the amount released into water/the air of each substance subject to the Order for Enforcement of the PRTR Act.
In fiscal 2018, we revised the method for calculating the emissions of specified substances into water. Using the previous calculation method, emissions totaled 43 tons for both Sumitomo Chemical and Group companies in Japan and 38 tons for Sumitomo Chemical alone.
*7 The amount of coal ash generated at Sumitomo Joint Electric Power, which is included in "Waste emissions" and "Landfill" (Sumitomo Chemical and Group companies in Japan) is calculated on a dry-weight basis.
In addition, although the amount of waste generated at Group companies in Japan and reduced at Sumitomo Chemical's facilities is included in "Waste emissions" (Sumitomo Chemical and Group companies in Japan), the amount is insignificant.
*8 In reference to the Act on Promotion of Global Warming Countermeasures, companies that emit less than 3,000 tons of CO_2-equivalent per year for each type of greenhouse gas are outside the boundary of calculation.

Environmental Protection

Examples of Initiatives

Protecting the Atmospheric Environment

By strengthening our measures for fixed emission sources, we are working on reducing our various environmental impacts, including emissions of soot and dust from boilers, leaks of fluorocarbons from refrigeration equipment, emissions of mercury from industrial waste incinerators, emissions of hazardous air pollutants and VOCs from manufacturing plants, and airborne asbestos from the demolition of buildings.

1. Reining in PM2.5* Emissions

We conduct detailed surveys of boilers, gas turbines, heating furnaces, dry furnaces, cracking furnaces, waste incinerators, and other such equipment, testing for emissions of VOCs and other gaseous atmospheric pollutants, soot, SOx, NOx, and hydrogen chloride, which are also the source of secondary particles and PM2.5. We strive to further reduce emissions for each source.

* Particulate matter of up to 2.5 μm in diameter

2. Managing Fluorocarbon Refrigeration Equipment

As part of efforts to protect the ozone layer and combat global warming, we are systematically upgrading fluorocarbon refrigeration equipment (units that use CFCs, HCFCs, HFCs) employed in production processes to equipment that uses HFCs with a low global warming potential (GWP) or non-fluorocarbon refrigerants. Our goal is to complete these upgrades within the upgrade deadlines for the equipment.

Upgrade Deadlines for Each Type of Equipment

- CFC equipment: Eliminate use of these units by fiscal 2025 (currently a total of 32 units held by the Group)
- HCFC equipment: Eliminate use of these units by fiscal 2045 (currently a total of 272 units held by the Group)

We aim to dutifully adhere to this plan, which, in line with the Act for Rationalized Use and Proper Management of Fluorocarbons, includes devising ways of minimizing leaks when industrial refrigeration and air conditioning equipment is in use as well as taking thorough, swift action once problems related to equipment installation are uncovered.

3. Emissions of Mercury into the Atmosphere from Waste Incinerators

We measured concentrations of mercury (both gas and particles) emitted into the atmosphere by our waste incinerators, which we own as assets, and completed a study of the impact of these emissions. The results have confirmed that mercury is being effectively removed by emission gas removal equipment, including bag filters and scrapers installed at incinerators, and that the concentration of mercury released into the atmosphere from any of our incinerators does not exceed the emission guidelines set under the Air Pollution Control Act.

Environmental Protection

★: Assured by an independent assurance provider

Protecting the Aquatic Environment

In addition to our initiatives aimed at reducing overall water use, we have realized thorough purification of polluted water from manufacturing plants and other facilities by operating stable and sophisticated water treatment facilities.

1. Responding to Increasing Sophistication of Activated Sludge Treatment

At all Works, we are striving to develop management technologies for water treatment that will further reduce our environmental impact and apply these technologies to realize safe and secure wastewater treatment.

At some Works, for process wastewater that is difficult to break down we use an activated sludge treatment involving microbial immobilization to stabilize the process water and reduce treatment costs. We are still considering applying this treatment to a wider scope of water.

2. Responding to Water Quality Standards

By strengthening our voluntary management, we are meeting reduction goals for continual emissions of COD, nitrogen, and phosphorus emitted into the ocean and waterways from drains, including public water resources. In addition, we have realized stable water treatment by enhancing the management technologies used in water treatment facilities. We are continually working to reduce the impact of water emissions from our plants on Tokyo Bay and other closed coastal waters where regulations are in place for reducing the total water emissions of COD, nitrogen, and phosphorus.

3. Promoting the Effective Use of Water

We uncover various issues related to the use of fresh water on the worksite level and assess and manage the associated risks. In addition, we strive to reduce the amount of water we use by examining more effective ways to use water by application, while continuing to maintain and improve the quality of water released from our business sites into public water resources such as the ocean and waterways.

Water Usage (Sumitomo Chemical Group)

(Million tons)

	FY2016	FY2017	FY2018
Sumitomo Chemical ★	243	253	249
Sumitomo Chemical Group	982	1,024	944
(Breakdown)			
Sumitomo Chemical and Group companies in Japan ★	975	1,017	937
Overseas Group companies	7.09	7.19	7.34

Note: Water usage volume includes seawater

Environmental Protection

Resource Saving and Waste Reduction

We are systematically working to reduce the amount of exhaustible raw materials used, quickly and properly dispose of PCB waste, and reduce the amount of industrial waste sent to landfills.

1. Promoting Resource Saving

We are striving to enhance the economic benefits gained from resource saving activities, such as improving the throughput yield of exhaustible raw materials and product yield.

■ Exhaustible Raw Material Use (Sumitomo Chemical, Group Companies in Japan)

(Thousand tons)

	FY2016		FY2017		FY2018	
	Sumitomo Chemical and Group Companies in Japan	Sumitomo Chemical	Sumitomo Chemical and Group Companies in Japan	Sumitomo Chemical	Sumitomo Chemical and Group Companies in Japan	Sumitomo Chemical
Hydrocarbon compounds	1,779	1,525	1,835	1,593	1,676	1,383
Metals (excluding minor metals)	116	111	120	115	121	117
Minor metals	0.17	0.05	10.17	0.02	13.54	0.07

Note: Economic effects are detailed on page 107 of the Data Book.

2. Thoroughly Managing Waste and Reducing Landfill Waste

We have achieved a major reduction in industrial landfill waste by reducing the amount of industrial waste generated and promoting recycling. In addition, as a specified resource industry identified by the Act on Promotion of Effective Use of Resources, we are also working to systematically limit the generation of industrial byproducts (sludge).

3. Moving up the Schedule for Comprehensive Treatment of Waste with Minute Amounts of PCBs before Legal Disposal Deadline

We winnowed the external operators jointly contracted to dispose of waste by main Group companies down to just one. Regarding the waste with minute amounts of PCBs (transformers, condensers, etc.) being stored or used by each company, we formulated a plan to comprehensively treat the waste over multiple years and are promoting proper management. We plan to dispose of all such waste by March 2025. (We expect to dispose of a total of around 500 pieces of equipment and around 1,800 tons of waste.)

Environmental Protection

Biodiversity Preservation Initiatives

Taking biodiversity into consideration is one of Sumitomo Chemical's most important pillars as it strives toward building a sustainable society. Since formulating Sumitomo Chemical's Commitment to the Conservation of Biodiversity, we have actively participated in a private-sector biodiversity partnership and promoted initiatives while giving considerable thought to what we should be mindful of as a chemical company.

Sumitomo Chemical's Commitment to the Conservation of Biodiversity

1. We position the conservation of biodiversity as one of our most important management issues and strive to help protect the global environment.
2. We work to continuously reduce environmental impact in our production operations and our development and supply of products and services and in cooperation with third parties in the supply chain and thereby contribute to the conservation of biodiversity.
3. By regularly implementing education programs, we ensure that employees fully recognize and understand the importance of biodiversity and promote our commitment to its conservation.
4. We continuously engage in corporate social responsibility activities that contribute to environmental protection and lead to greater trust and confidence from society.
5. We disclose the results of these efforts and maintain effective communication with the general public.

(Formulated December 2011)

Examples of Initiatives

1. Promoting "Sumika Sustainable Solutions"
2. Improving energy efficiency, recycling resources, promoting the 3Rs, encouraging CSR procurement
3. Undertaking environmental impact assessments at the planning stage for new plant construction and implementing countermeasures
4. Implementing environmental protection projects jointly with NGOs
5. Complying with internal safety management regulations pertaining to the use of genetically modified organisms
6. Undertaking proper management of chemical substances

Appropriate Management of Chemical Substances

Regarding class 1 specified chemical substances (PRTR Act) and VOCs, we conduct environmental risk analyses regardless of the amount emitted into the environment. We are also taking measures to reduce use and emissions.

Examples of Initiatives

1. Meeting Voluntary Environmental Targets

   At the boundaries of plant premises and at final drainage exits, we have set voluntary environmental targets for the concentration of pollutants in air and water and work to meet those targets.

2. Reducing Atmospheric Emissions (FY2018 results: atmospheric emissions accounted for around 97% of total emissions (air and water))

   We are, of course, taking measures to reduce emissions mainly by sealing facilities and improving operation methods. But we are also working to intently and systematically reduce atmospheric emissions primarily by additionally taking such disposal measures as recovering emissions through absorption, purification, and stronger cooling; incinerating emissions; and suppressing emissions through internal floating roofs for tanks.

3. Operating Company-wide PRTR Calculation Systems

   Using the Company's proprietary calculation system, Sumitomo Chemical is striving to increase the accuracy and level of detail of the data on emission amounts and transfer amounts for each substance.

Environmental Protection

Protecting the Soil Environment

We quantify the soil environments of worksites, strictly prevent the diffusion of pollutants, and actively work to prevent contamination.

Examples of Initiatives

1. Regularly Monitoring Groundwater

   We analyze the groundwater at the boundaries of our worksites to confirm that levels of hazardous materials are below those stipulated by standards.

2. Preventing Soil Contamination

   We have established rules regarding the construction standards and the content of regular inspections for various equipment, including the gutters, floors, plumbing, and bund walls of facilities handling chemical substances. We are working to prevent soil contamination from leaks by thoroughly complying with these rules.

Looking Ahead

The focus of Sumitomo Chemical Group's basic policy on protecting the environment has shifted since the early 2000s from responding to laws and regulations toward strengthening voluntary management. As pressure increases to protect the environment on a global scale and to improve the efficacy of the measures taken at each worksite, we think it is necessary to understand international environmental protection trends better than ever and take forward-looking action.

From the perspective of continued risk management, we will focus our efforts on issues that are assessed as being high risk over the medium to long term and take appropriate action that enhances voluntary management.

Environmental Activities: Supplementary Data

1 Addressing Climate Change

Reducing Greenhouse Gas Emissions

■ Greenhouse Gas Emissions (All Seven Gases) (Sumitomo Chemical (All Facilities))

(Thousand tons of CO_2e)

		FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
CO_2	Energy sources	3,190	3,357	3,347	2,559	2,405	2,454	2,543
	From other than energy use	62	63	65	55	50	93	155
Methane (CH_4)		—	—	—	—	—	—	—
Nitrous oxide (N_2O)		67	63	76	65	45	35	23
Hydrofluorocarbon (HFC)		—	—	—	—	—	—	—
Perfluorocarbon (PFC)		—	—	—	—	—	—	—
Sulfur hexafluoride (SF_6)		—	—	—	—	—	—	—
Nitrogen trifluoride (NF_3)		—	—	—	—	—	—	—

Notes: • CH_4, HFC, PFC, SF_6, and NF_3 are outside the scope of reporting.
• Calculated based on the Act on the Rational Use of Energy and the Act on Promotion of Global Warming Countermeasures.

Environmental Activities: Supplementary Data

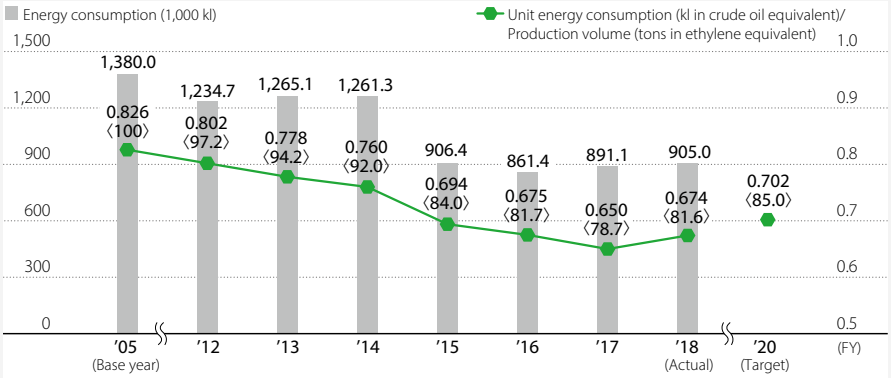
Energy Saving

Breakdown of Unit Energy Consumption (Sumitomo Chemical (All Works))

	Energy consumption (1,000 kl in crude oil equivalent) (a)	Production (1,000 tons in ethylene equivalent) (b)	Unit energy consumption (a/b)
Ehime Works	463.8	728.9	0.636
Chiba Works	312.0	371.4	0.840
Osaka Works	23.6	17.9	1.318
Oita Works*	60.3	62.8	0.960
Misawa Works	10.6	8.6	1.233
Ohe Works	34.8	153.1	0.227
Total	905.1	1,342.7	0.674

Note: Calculated based on the Act on the Rational Use of Energy and the Act on Promotion of Global Warming Countermeasures.
* Data for the Oita Works includes data for the Gifu and Okayama plants.

Energy Consumption and Unit Energy Consumption (Sumitomo Chemical (All Works))



Note: Calculated based on the Act on the Rational Use of Energy and the Act on Promotion of Global Warming Countermeasures.

Target	Improve unit energy consumption for fiscal 2020 by 15% compared with fiscal 2005.
Results	Energy consumption totaled 905 thousand kl in crude oil equivalent in fiscal 2018. In fiscal 2018, unit energy consumption worsened 3.7% compared with fiscal 2017 and improved 18.4% compared with fiscal 2005.

Energy Consumption and CO_2 Emissions (Sumitomo Chemical and Group Companies in Japan (All Facilities))

	Energy consumption (1,000 kl in crude oil equivalent)	CO_2 emissions from energy use (1,000 tons)
Sumitomo Chemical	918	2,543
Works	905	2,516
Non-manufacturing sites including the Head Offices and Research Laboratories	13	27
Sumitomo Chemical and Group companies in Japan	1,677	4,966
Works	1,651	4,911
Non-manufacturing sites including the Head Offices and Research Laboratories	25	55

Notes: • Calculated based on the Act on the Rational Use of Energy and the Act on Promotion of Global Warming Countermeasures.
• The boundary of calculation covers the same participating companies listed on page 3.

Environmental Activities: Supplementary Data

★: Assured by an independent assurance provider

2 Environmental Protection

Environmental Performance

Sumitomo Chemical collates and totals environmental data for the Company and Group companies in Japan and overseas, including data on energy and resource consumption, production quantities, and environmental impact (e.g., release of pollutants into the air and water).

Environmental Performance (Fiscal 2016–2018), Boundary: Sumitomo Chemical and Group Companies in Japan

INPUT Energy and Resources

Water

(Million tons)

	FY2016	FY2017	FY2018★
Industrial water	66.1	68.8	63.3
Drinking water	0.8	0.9	0.8
Seawater	888.4	926.9	848.1
Groundwater	16.7	17.6	22.7
Other water	2.7	2.5	2.4

Energy
Calculated as kl of crude oil

(Thousand kl)

	FY2016	FY2017	FY2018★
Fuel, heat, and electricity*1	1,750	1,837	1,690

Exhaustible Resources

(Thousand tons)

	FY2016	FY2017	FY2018
Hydrocarbon compounds	1,779	1,835	1,676
Metals (excluding rare metals)*2	116	120	121
Minor metals*3	0.17	10.17	13.54

PCB/CFCs under Secure Storage

	FY2016	FY2017	FY2018
No. of electrical devices containing high concentrations of PCBs*4	61	58	10
PCB volume (pure equivalent) (kl)*4	1.0	1.0	0.1
No. of refrigeration units using specified CFCs as a coolant	45	48	32
No. of refrigeration units using HCFCs as a coolant	235	262	272

Note: The number of companies included in the boundary of calculation for the environmental performance data on page 90 is as follows for each year.
FY2016: Sumitomo Chemical and Group companies in Japan: 19 companies
FY2017: Sumitomo Chemical and Group companies in Japan: 21 companies
FY2018: Sumitomo Chemical and Group companies in Japan: 21 companies

*1 From fiscal 2017, the energy (calculated as kl of crude oil) indices were calculated in accordance with the GHG Protocol (refer to page 167 "Calculation Standards for Environmental and Social Data Indicators").
- Having adopted the GHG Protocol standards for our GHG emission disclosures, we now include the following data previously excluded from calculations: amount of energy used to produce power and steam sold to external parties by Sumitomo Chemical and Group companies in Japan (the portion attributable to energy provider subsidiaries was included in years prior to fiscal 2016). In addition, the amount of energy used by Sumitomo Chemical's non-production sites is included from fiscal 2017, and the amount of energy used by the Group companies in Japan non-production sites is included from fiscal 2018. From fiscal 2018, the boundary of calculation has been expanded to include principal consolidated Group companies in Japan, which account for up to 99.8% of consolidated net sales.

*2 Calculations include the following 12 metals: iron, gold, silver, copper, zinc, aluminum, lead, platinum, titanium, palladium, gallium, and lithium.
*3 Calculations include the following seven minor metals: nickel, chromium, tungsten, cobalt, molybdenum, manganese, and vanadium. The supply structure for each of these minor metals is extremely fragile. These minor metals are subject to national stockpiling.
*4 Fluorescent lamps and mercury lamp ballast as well as contaminated substances (wastepaper, etc.), including PCB waste, are not included in unit and volume data.

Environmental Activities: Supplementary Data

★: Assured by an independent assurance provider

OUTPUT Product Manufacturing and Environmental Impact

Products

(Thousand tons)

	FY2016	FY2017	FY2018★
(Calculated on the basis of ethylene production)*1	1,517	2,602	2,490

Water Pollutant Emissions

(Tons)

		FY2016	FY2017	FY2018★
COD	Coastal waters/waterways	977	998	998
	Sewer systems	185	234	216
Phosphorus	Coastal waters/waterways	34	32	35
	Sewer systems	5	6	5
Nitrogen	Coastal waters/waterways	1,478	1,442	1,488
	Sewer systems	36	72	96
Substances subject to the PRTR Act*2, 3		52	45	13

Water Discharge

(Million tons)

	FY2016	FY2017	FY2018
Total amount of water discharge	953	987	911

Note: Includes seawater emissions of Sumitomo Joint Electric Power Co., Ltd.

Waste Materials

(Thousand tons)

	FY2016	FY2017	FY2018★
Waste emissions*4	255	261	244
Landfill*4	21	21	23
(Breakdown)			
On-site landfill	0	0	0
External landfill	21	21	23

Note: The number of companies included in the boundary of calculation for the environmental performance data on page 91 is as follows for each year.
FY2016: Sumitomo Chemical and Group companies in Japan: 19 companies
FY2017: Sumitomo Chemical and Group companies in Japan: 21 companies
FY2018: Sumitomo Chemical and Group companies in Japan: 21 companies

*1 Certain assumptions were made in calculations due to the difficulty of obtaining weight-based figures for some products.
*2 Calculated based on the amount released into water/the air of each substance subject to the PRTR Act. From fiscal 2018, we revised the calculation method for specified substances released into water. Using the previous method, water pollutant emissions for Sumitomo Chemical and Group companies in Japan would be 43 tons.
*3 From fiscal 2018, as a result of revising the calculation method for specified substances released into water, water pollutant emissions decreased compared with the previous method.
*4 The amount of coal ash generated at Sumitomo Joint Electric Power, which is included in "Waste emissions" and "Landfill" (Sumitomo Chemical and Group companies in Japan) is calculated on a dry-weight basis. Moreover, although the amount of waste emissions from Sumitomo Chemical and Group companies in Japan includes the amount of waste reduced at Sumitomo Chemical's facilities, the reduced amount is insignificant.

Environmental Activities: Supplementary Data

★: Assured by an independent assurance provider

Atmospheric Emissions

(Thousand tons of CO_2e)

	FY2016	FY2017	FY2018★
Greenhouse gases (seven gases)*1	5,509	6,432	5,957
Emissions from energy use (CO_2)	5,323	5,611	5,172
CO_2 emissions from other than energy use	61	711	684
N_2O	125	110	101
HFC*2	—	—	—
PFC*2	—	—	—
CH_4*2	—	—	—
SF_6*2	—	—	—
NF_3*2	—	—	—

(Tons)

	FY2016	FY2017	FY2018★
Others			
NOx	4,736	4,703	4,326
SOx	4,920	5,023	5,152
Soot and dust	166	247	222
Substances subject to the PRTR Act*3	454	438	458

Note: The number of companies included in the boundary of calculation for the environmental performance data on page 92 is as follows for each year.
FY2016: Sumitomo Chemical and Group companies in Japan: 19 companies
FY2017: Sumitomo Chemical and Group companies in Japan: 21 companies
FY2018: Sumitomo Chemical and Group companies in Japan: 21 companies

*1 From fiscal 2017, the greenhouse gas (all seven gases) indices were calculated using the GHG Protocol for greenhouse gas emissions (refer to page 167 "Calculation Standards for Environmental and Social Data Indicators") for principal consolidated Group companies in Japan, which account for up to 99.8% of consolidated net sales.
- Having adopted the GHG Protocol standards for our GHG emission disclosures, we now include the following data that was previously excluded from calculations: CO_2 emissions from energy sold to external parties by Sumitomo Chemical and Group companies in Japan (the portion attributable to energy provider subsidiaries was included in years prior to fiscal 2016); CO_2 emissions from energy use attributable to Sumitomo Chemical's non-production sites; and CO_2 emissions from non-energy sources not included in the scope of the Act on Promotion of Global Warming Countermeasures. In addition, from fiscal 2018, we include energy use attributable to the Group companies in Japan non-production sites.

*2 Outside the scope of reporting under the Act on Promotion of Global Warming Countermeasures.
*3 Calculated based on the amount released into water/the air of each substance subject to the PRTR Act.

Compliance with Environmental Laws and Regulations

(Yen)

	FY2016	FY2017	FY2018
Total fines	0	0	0

Note: **Sumitomo Chemical and Group companies in Japan are included in the boundary of calculation.**
[The production sites of the 21 Group companies in the boundary are listed below]
Sumika-Kakoushi Co., Ltd.; Sumika Color Co., Ltd.; Sumika Plastech Co., Ltd.; Nippon A&L Inc.; Nihon Methacryl Monomer Co., Ltd.; Asahi Chemical Co., Ltd.; Ceratec Co., Ltd.; Sumika Assembly Techno Co., Ltd.; SanTerra Co., Ltd.; Sumika Agro Manufacturing Co., Ltd.; SC Environmental Science Co., Ltd.; Sumika Agrotech Co., Ltd.; Sumitomo Chemical Garden Products Inc.; Nihon Medi-Physics Co., Ltd.; Sumitomo Joint Electric Power Co., Ltd.; Koei Chemical Co., Ltd.; Taoka Chemical Co., Ltd.; Tanaka Chemical Corporation; SCIOCS COMPANY LIMITED; Sumitomo Dainippon Pharma Co., Ltd.; and SN Kasei Co., Ltd.

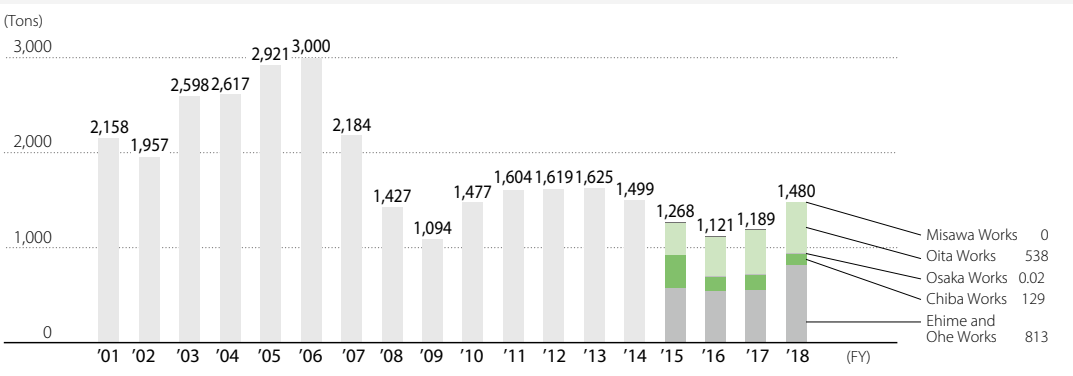
Environmental Activities: Supplementary Data

Preventing Pollution: Atmospheric Emissions of SOx, NOx, Soot, and Dust

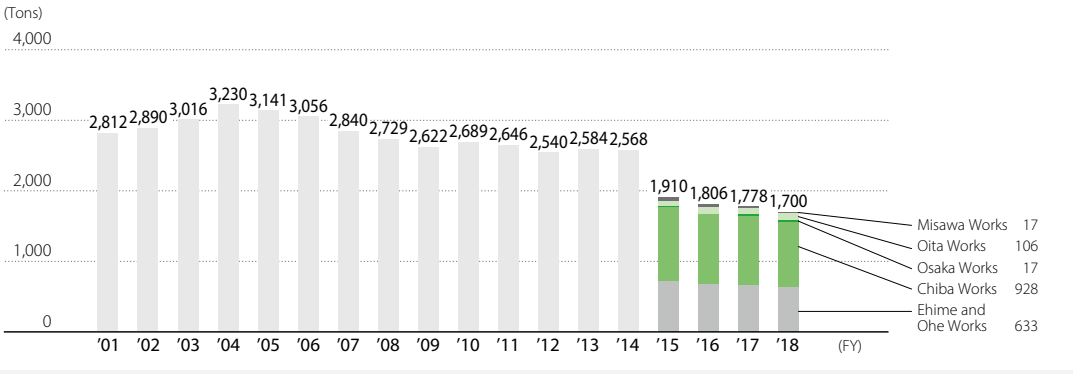
In 1970, Sumitomo Chemical achieved a marked reduction in the release of SOx, NOx, soot, and dust into the atmosphere, and continued to maintain low levels of emissions from 1980 to the present. Furthermore, the Company has concluded cooperative agreements with local municipal governments at each of its Works, establishing voluntary control levels that are stricter than the standards given under applicable laws and regulations.

Note: Data for the Gifu Plant and Okayama Plant from fiscal 2004 to fiscal 2012 is included in Osaka Works.
Data for the Gifu Plant and Okayama Plant from fiscal 2013 is included in Oita Works.

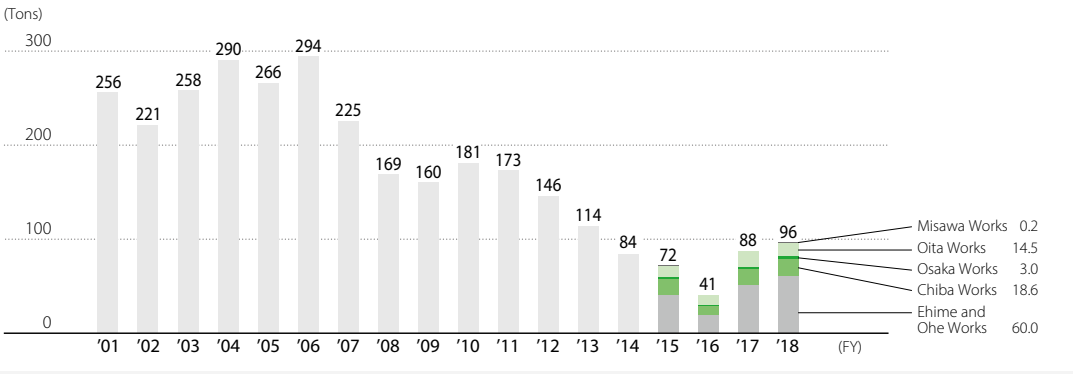
SOx Emissions (Sumitomo Chemical (All Works))



NOx Emissions (Sumitomo Chemical (All Works))



Soot and Dust Emissions (Sumitomo Chemical (All Works))



Target	Continue to sustain levels below voluntary control standard values.

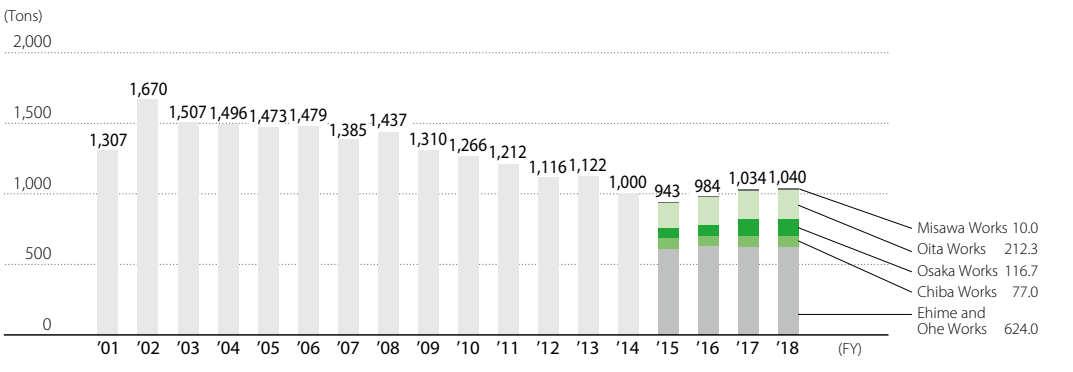
Environmental Activities: Supplementary Data

Water Emissions of COD, Nitrogen, and Phosphorus

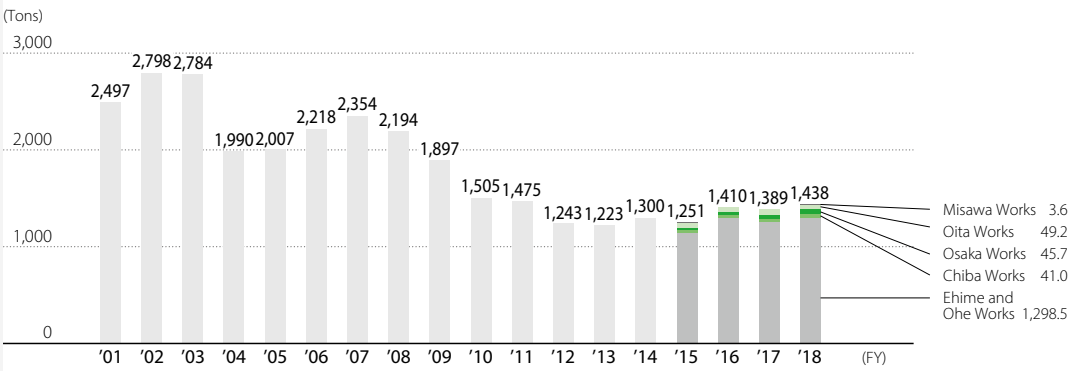
A number of measures have been implemented to cut emissions, in line with fifth-generation Water Quality Standards, and emissions of COD, nitrogen, and phosphorus into waterways have been significantly reduced since fiscal 2004. Sumitomo Chemical has also concluded cooperative agreements with local municipal governments to establish voluntary control levels for COD, nitrogen, and phosphorus released into waterways at each Works. These standards are also stricter than those established under applicable laws and regulations.

Note: Data for the Gifu Plant and Okayama Plant from fiscal 2004 to fiscal 2012 is included in Osaka Works. Data for the Gifu Plant and Okayama Plant from fiscal 2013 is included in Oita Works.

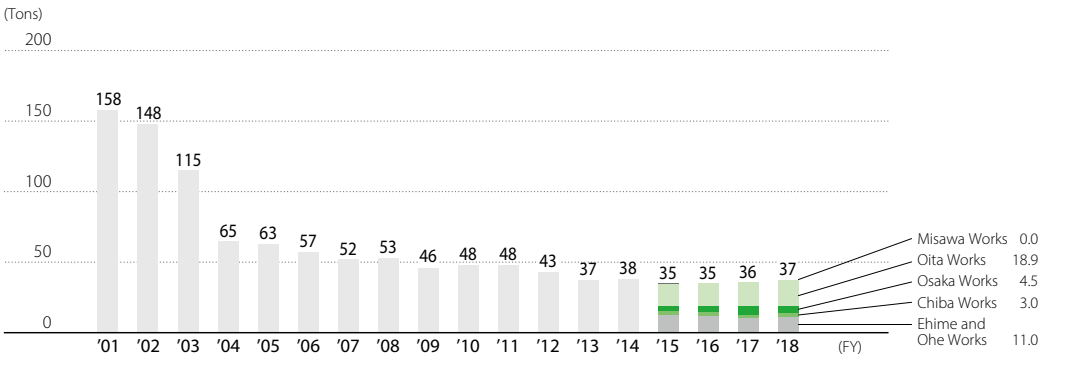
COD Emissions (water emissions include water discharge to sewage systems) (Sumitomo Chemical (All Works))



Nitrogen Emissions (Sumitomo Chemical (All Works))



Phosphorus Emissions (Sumitomo Chemical (All Works))



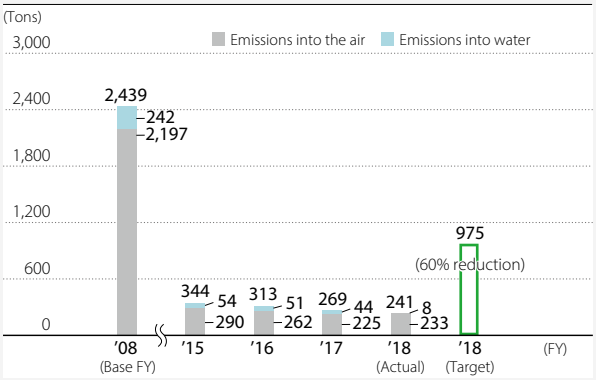
Target	Continue to sustain levels below voluntary control standard values.

Environmental Activities: Supplementary Data

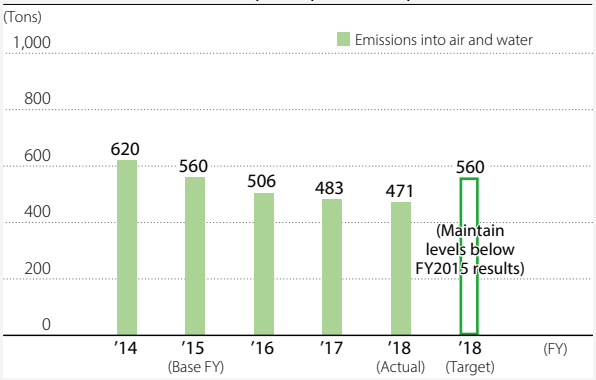
Addressing PRTR and VOCs

Trends in Emissions of Substances Subject to the PRTR Act

Sumitomo Chemical (All Works)



Sumitomo Chemical and Group Companies in Japan



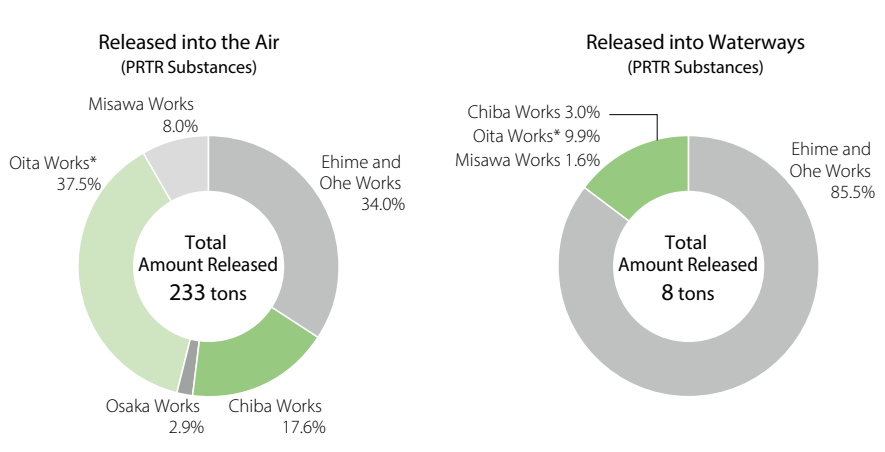
Note: From fiscal 2018, we revised the calculation method for specified substances released into water. Using the previous method, emissions into water for Sumitomo Chemical (all Works) would be 38 tons, and emissions into air and water for Sumitomo Chemical and Group companies in Japan would be 501 tons.

Release and Transfer of PRTR Substances (Sumitomo Chemical and Group Companies in Japan)

(Tons)

	Released			Transferred		
	Air	Water	Subtotal	Sewage	Waste	Subtotal
PRTR substances						
Sumitomo Chemical (118 substances)	233	8	241	5	4,616	4,621
Sumitomo Chemical and Group companies in Japan	458	13	471	9	7,676	7,684

PRTR Substances Released by Works (Sumitomo Chemical (All Works))

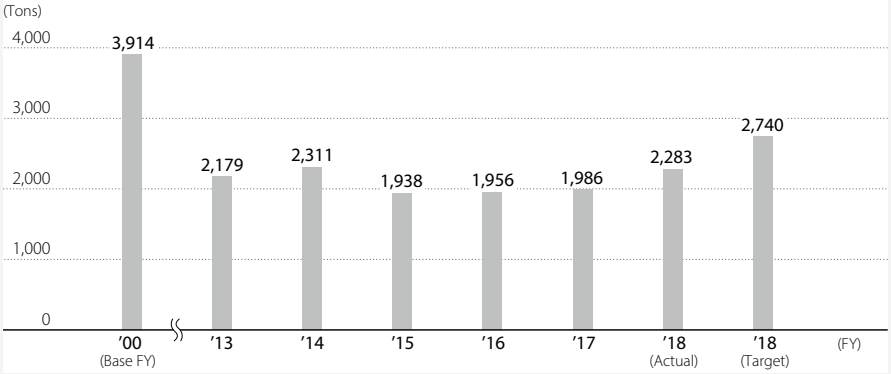


* Data for the Oita Works includes data for the Gifu and Okayama plants.

Target	Reduce the total release of PRTR substances by 60% compared with fiscal 2008 by fiscal 2018.
Results	Reduced the total release of PRTR substances to 241 tons, by 90.1%, compared with fiscal 2008 by fiscal 2018, achieving the target.

Environmental Activities: Supplementary Data

Initiatives to Reduce Emissions of Volatile Organic Compounds (VOCs) (Sumitomo Chemical (All Works))



Target	Maintain a 30% reduction in VOC emissions compared with fiscal 2000.
Results	Reduced emissions by 2,283 tons, or 41.7%, compared with fiscal 2000 by fiscal 2018, achieving the target.

Prevention of Ozone Layer Depletion

Number of Refrigeration Units That Use Specified CFCs and HCFCs as Coolants (As of the End of Fiscal 2018)

(Number of units)

	Sumitomo Chemical	Sumitomo Chemical and Group companies in Japan
CFC11	3	3
CFC12	1	26
CFC113	0	1
CFC114	0	0
CFC115	0	2
HCFC22	60	249
HCFC123	13	21
HCFC142b	0	2

Target	• Eliminate the use of refrigeration units that use specified CFCs as coolants by fiscal 2025. • Eliminate the use of refrigeration units that use HCFCs as coolants by fiscal 2045.

Environmental Activities: Supplementary Data

Response to the Pollutant Release and Transfer Register Ordinance(Issued on November 21, 2008)

Release and Transfer of PRTR Substances in Fiscal 2018 (Sumitomo Chemical (All Works))

(Tons, Dioxins: mg-TEQ)

No.	Name of Chemical Compound	Amount Released					Amount Transferred		
		Air	Water	Soil	Landfill	Total	Sewage	Waste	Total
1	Zinc compounds (water-soluble)	0.0	3.5	0.0	0.0	3.5	<0.1	93.2	93.3
2	Acrylic acid and its water-soluble salts	<0.1	0.0	0.0	0.0	<0.1	0.0	0.0	0.0
3	Methyl acrylate	1.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0
4	Acrylonitrile	4.9	0.0	0.0	0.0	4.9	0.0	0.0	0.0
5	Acrolein	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Acetaldehyde	0.3	<0.1	0.0	0.0	0.3	0.0	0.0	0.0
7	Acetonitrile	2.5	0.0	0.0	0.0	2.5	0.0	14.9	14.9
8	o-Anisidine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Aniline	0.7	0.0	0.0	0.0	0.7	0.0	49.5	49.5
10	2-Aminoethanol	<0.1	0.2	0.0	0.0	0.2	0.0	27.7	27.7
11	m-Aminophenol	0.0	<0.1	0.0	0.0	<0.1	0.0	3.8	3.8
12	Allyl alcohol	<0.1	0.0	0.0	0.0	<0.1	0.0	0.0	0.0
13	Antimony and its compounds	0.0	0.0	0.0	0.0	0.0	0.0	3.1	3.1
14	Isobutyraldehyde	0.6	0.0	0.0	0.0	0.6	0.0	0.0	0.0
15	O-ethylO-6-nitro-meta-tolyl-sec-butylphosphoramidothioate (also known as Butamifos)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	O-ethylO-4-nitrophenyl phenylphosphonothioate (also known as EPN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	Ethylbenzene	3.2	<0.1	0.0	0.0	3.3	0.1	75.8	75.9
18	Epichlorohydrin	0.4	0.0	0.0	0.0	0.4	0.0	0.0	0.0
19	1,2-Epoxypropane (also known as propylene oxide)	0.0	<0.1	0.0	0.0	<0.1	0.0	0.0	0.0
20	Cadmium and its compounds	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1
21	ε-Caprolactam	0.3	1.3	0.0	0.0	1.5	0.0	0.0	0.0
22	Xylene	4.0	<0.1	0.0	0.0	4.0	0.1	81.2	81.3
23	Quinoline	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	Cumene	3.3	<0.1	0.0	0.0	3.3	0.0	0.0	0.0
25	Cresol	<0.1	0.0	0.0	0.0	<0.1	0.0	0.0	0.0
26	Chromium and chromium(III) compounds	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1
27	Chromium(VI) compounds	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1
28	Chloroaniline	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	Chloroacetic acid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	Chlorodifluoromethane (also known as HCFC-22)	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0
31	2-chloro-4,6-bis(ethylamino)-1,3,5-triazine (also known as simazine or CAT)	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1
32	3-Chloropropene (also known as allyl chloride)	1.7	0.0	0.0	0.0	1.7	0.0	0.0	0.0
33	Chlorobenzene	2.9	<0.1	0.0	0.0	2.9	0.0	126.4	126.4
34	Chloroform	<0.1	0.0	0.0	0.0	<0.1	<0.1	325.1	325.1
35	Cobalt and its compounds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36	Vinyl acetate	13.9	<0.1	0.0	0.0	13.9	0.0	0.0	0.0
37	Salicyl aldehyde	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	Inorganic cyanide compounds (excluding complex salts and cyanates)	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1
39	S-4-chlorobenzyl N,N-diethylthiocarbamate (also known as thiobencarb or benthiocarb)	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1
40	Tetrachloromethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Environmental Activities: Supplementary Data

(Tons, Dioxins: mg-TEQ)

No.	Name of Chemical Compound	Amount Released					Amount Transferred		
		Air	Water	Soil	Landfill	Total	Sewage	Waste	Total
41	1,4-Dioxane	<0.1	0.0	0.0	0.0	<0.1	<0.1	119.0	119.0
42	Cyclohexylamine	0.0	<0.1	0.0	0.0	<0.1	0.0	2.5	2.5
43	1,2-dichloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44	1,1-Dichloroethylene (also known as vinylidene chloride)	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1
45	Cis-1,2-dichloroethylene	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1
46	2,2-Dichloro-1,1,1- trifluoroethane (also known as HCFC-123)	1.6	0.0	0.0	0.0	1.6	0.0	0.0	0.0
47	1,2-Dichloropropane	<0.1	0.0	0.0	0.0	<0.1	0.0	400.0	400.0
48	1,3-Dichloropropene (also known as D-D)	0.5	0.0	0.0	0.0	0.5	0.0	260.0	260.0
49	Dichlorobenzene	0.0	0.0	0.0	0.0	0.0	0.0	44.2	44.2
50	Dichloromethane (also known as methylene chloride)	4.4	0.0	0.0	0.0	4.4	<0.1	36.3	36.3
51	Dicyclopentadiene	<0.1	0.0	0.0	0.0	<0.1	0.0	5.3	5.3
52	2,4-Dinitrophenol	0.0	0.0	0.0	0.0	0.0	0.0	37.9	37.9
53	1,3-Diphenylguanidine	0.0	0.5	0.0	0.0	0.5	0.0	12.2	12.2
54	2,6-Di-tert-butyl-4-cresol (also known as BHT)	0.0	<0.1	0.0	0.0	<0.1	0.0	0.0	0.0
55	2,4-Di-tert-butylphenol	<0.1	0.0	0.0	0.0	<0.1	0.0	0.0	0.0
56	N,N-Dimethylacetamide	<0.1	0.0	0.0	0.0	<0.1	0.0	7.3	7.3
57	2,4-dimethylaniline	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6
58	N,N-Dimethylaniline	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0
59	Dimethylamine	0.0	0.1	0.0	0.0	0.1	0.0	1.6	1.6
60	N,N-Dimethylformamide	<0.1	<0.1	0.0	0.0	<0.1	0.0	117.4	117.4
61	Mercury and its compounds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62	Styrene	2.2	0.0	0.0	0.0	2.2	0.0	2.2	2.2
63	Selenium and its compounds	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1
64	Dioxins	3.5	5.0	0.0	0.0	8.6	0.1	5.1	5.2
65	Thiourea	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
66	O,O-Dimethyl O-(3-methyl-4- nitrophenyl) phosphorothioate (also known as Fenitrothion or MEP)	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
67	Tetrachloroethylene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	2,3,5,6-Tetrachloro-para-benzoquinone	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
69	Tetramethylthiuram disulfide (also known as thiuram or thiram)	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1
70	Terephthalic acid	0.0	0.0	0.0	0.0	0.0	0.0	394.0	394.0
71	Water-soluble copper salts (excluding complex salts)	0.0	<0.1	0.0	0.0	<0.1	0.4	0.0	0.4
72	Triethylamine	1.1	0.6	0.0	0.0	1.7	0.8	51.0	51.8
73	1,1,1-trichloroethane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74	1,1,2-trichloroethane	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1
75	Trichloroethylene	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1
76	2,4,6-Trichloro-1,3,5-triazine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77	Trichlorofluoromethane (also known as CFC-11)	0.7	0.0	0.0	0.0	0.7	0.0	0.0	0.0
78	1,2,3-Trichloropropane	<0.1	0.0	0.0	0.0	<0.1	0.0	9.3	9.3
79	1,2,4-Trimethylbenzene	0.4	0.0	0.0	0.0	0.4	0.0	0.0	0.0
80	Toluidine	0.0	0.0	0.0	0.0	0.0	0.0	7.3	7.3
81	Toluene	140.5	0.3	0.0	0.0	140.8	0.4	1,854.2	1,854.6
82	Naphthalene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83	Lead compounds	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1
84	Nickel compounds	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.5
85	Nitrobenzene	0.6	0.6	0.0	0.0	1.2	0.0	44.3	44.3
86	Vanadium compounds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Environmental Activities: Supplementary Data

(Tons, Dioxins: mg-TEQ)

No.	Name of Chemical Compound	Amount Released					Amount Transferred		
		Air	Water	Soil	Landfill	Total	Sewage	Waste	Total
87	Arsenic and its inorganic compounds	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1
88	Hydrazine	<0.1	<0.1	0.0	0.0	<0.1	0.0	11.7	11.7
89	Hydroquinone	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90	Pyridine	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9
91	1,3-Butadiene	0.0	0.0	0.0	0.0	0.0	0.0	3.4	3.4
92	Bis(2-ethylhexyl)phthalate	0.0	0.0	0.0	0.0	0.0	0.0	3.6	3.6
93	tert-Butyl hydroperoxide	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94	2-tert-Butyl-5-methylphenol	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
95	Hydrogen fluoride and its water-soluble salts	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1
96	2-Propyn-1-ol	<0.1	0.0	0.0	0.0	<0.1	0.0	217.4	217.4
97	2-Bromopropane	0.0	0.0	0.0	0.0	0.0	0.0	4.7	4.7
98	Hexadecyltrimethylammonium chloride	<0.1	0.0	0.0	0.0	<0.1	0.0	0.0	0.0
99	n-Hexane	27.2	<0.1	0.0	0.0	27.3	0.0	115.5	115.5
100	Water-soluble salts of peroxydisulfuric acid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101	Benzyl chloride	<0.1	0.0	0.0	0.0	<0.1	0.0	0.0	0.0
102	Benzaldehyde	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103	Benzene	0.3	0.2	0.0	0.0	0.5	0.0	0.0	0.0
104	Boron compounds	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1
105	Polychlorinated biphenyls (also known as PCBs)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
106	Poly (oxyethylene) alkyl ether (alkyl C=12–15) and its mixture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107	Formaldehyde	<0.1	<0.1	0.0	0.0	<0.1	2.5	0.0	2.5
108	Manganese and its compounds	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1
109	Phthalic anhydride	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110	Maleic anhydride	0.0	0.0	0.0	0.0	0.0	0.0	<0.1	<0.1
111	2,3-Epoxypropyl methacrylate	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0
112	Methyl methacrylate	8.8	0.0	0.0	0.0	8.8	0.0	43.7	43.7
113	(Z)-2′-Methylacetophenone= 4,6-dimethyl-2-pyrimidinyl hydrazone (also known as Ferimzone)	0.0	0.6	0.0	0.0	0.6	0.0	0.0	0.0
114	Methylamine	0.3	0.0	0.0	0.0	0.3	0.0	2.1	2.1
115	3-Methylthiopropanal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116	Methylnaphthalene	2.6	0.0	0.0	0.0	2.6	0.0	0.0	0.0
117	Morpholine	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.0
118	Triphenyl phosphate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		232.7	8.5	0.0	0.0	241.1	4.9	4,616.4	4,621.3

Environmental Activities: Supplementary Data

Industrial Waste Reduction

PCB Waste (Sumitomo Chemical and Group Companies in Japan (All Works)

Storage and Control of High Concentrations of PCB Waste (As of the End of Fiscal 2018)

	Number of units of PCB waste			Volume of PCBs (kl)
	Total	Storage	Usage	
Sumitomo Chemical	0	0	0	0
Sumitomo Chemical and Group Companies in Japan	10	10	0	0.06

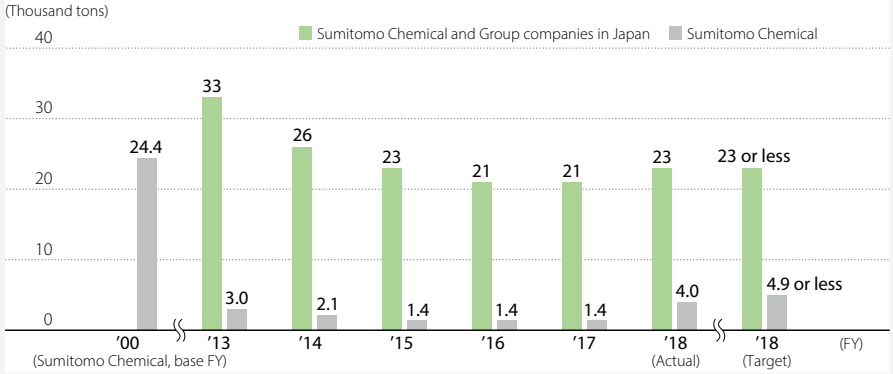
Note: The volume of PCBs does not include minute amounts of PCB waste in the PCB net conversion amount. High concentrations of PCBs in such classes of materials as fluorescent lamps, mercury lamp ballast, and contaminated substances (wastepaper, etc.) fall outside the scope of collation.

Target	Properly collect and store high-concentration PCB-containing waste and complete treatment of this waste at an early date.
Results	As of the end of fiscal 2018, Sumitomo Chemical has completed treatment of the high-concentration PCB waste that had been in storage or use.

In accordance with the Act on Special Measures against PCB Waste, Sumitomo Chemical properly collects high-concentration polychlorinated biphenyl (PCB)-containing waste.* The Company then stores this industrial waste, which is subject to special controls, in specified areas within the Company's waste storage facilities, subsequently ensuring strict control of this waste. Sumitomo Chemical has completed treatment of all PCB waste ahead of the deadline specified under the Act.

* Transformers, capacitors, and other electronic devices that contain PCB insulating oil.

Landfill Disposal Amount



Target	We aim to maintain a landfill disposal amount of less than the fiscal 2000 level of 4,900 tons for Sumitomo Chemical and the fiscal 2015 level of 23,000 tons for Sumitomo Chemical and Group companies in Japan.
Results	Targets were achieved for Sumitomo Chemical as well as Sumitomo Chemical and Group companies in Japan.

Environmental Activities: Supplementary Data

Digitization of Manifests to Be Prepared Pursuant to the Waste Management and Public Cleansing Act (Sumitomo Chemical (All Works))

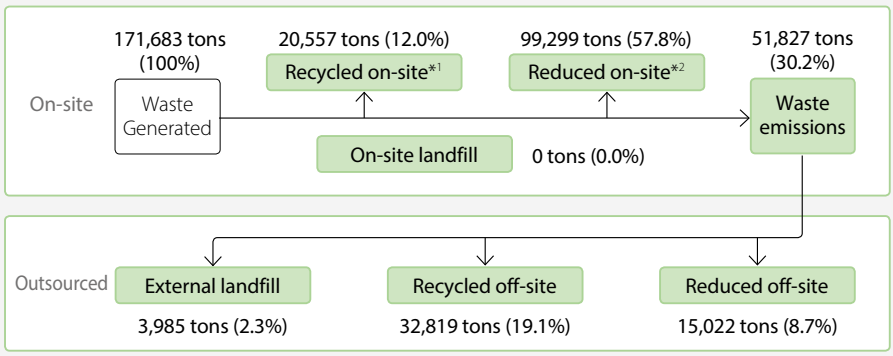
	Number of manifests issued	Number of manifests digitized	Digitization rate (%)
FY2013	19,389	15,329	79
FY2014	18,662	14,930	80
FY2015	18,973	16,337	86
FY2016	19,868	19,594	99
FY2017	19,858	19,585	99
FY2018	20,598	20,355	99

Sumitomo Chemical has been fostering the digitization of manifests to improve operational efficiency and ensure compliance with the law and transparency of data.

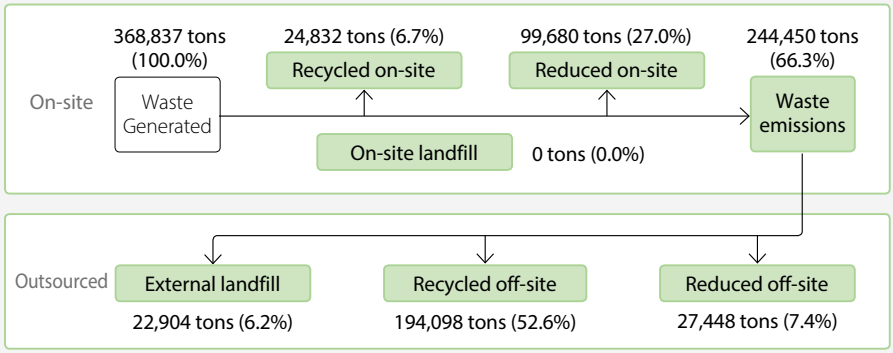
Environmental Activities: Supplementary Data

Waste Disposal Flow Chart and Results

(Sumitomo Chemical (All Works))



(Sumitomo Chemical and Group Companies in Japan (All Works))



*1 Recycled waste: Total amount of waste that was reused, recycled, or thermally recycled
*2 Reduced waste: Total amount of waste reduced through incineration, etc.

List of Results by Item in connection with the Disposal of Waste (Sumitomo Chemical (All Works))

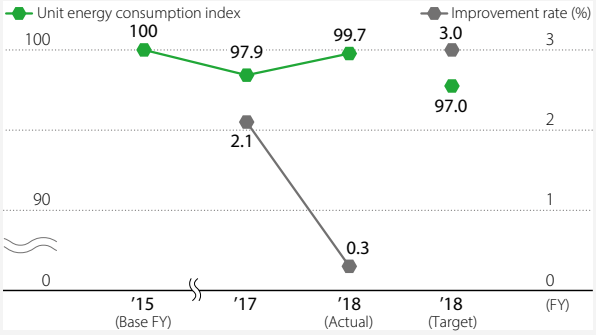
(Tons)

Type	Waste	Recycled on-site		Reduced on-site		Waste emissions	On-site landfill	Reduced off-site	Recycled off-site		External landfill
	Generated	Reused, recycled	Thermally recycled	Incineration	Other				Reused, recycled	Thermally recycled	
Burnt residue	4,959.4			0.0		4,959.4			4,782.0		177.4
Sludge	52,846.5		3,553.4	34,126.6	2,724.9	12,441.6		2,976.0	9,265.6	0.2	199.8
Oil waste	39,145.5	4,069.2	8,348.0	15,995.4		10,732.9		4,072.0	5,550.2	1,061.4	49.2
Waste acid	7,820.4		30.9	5,511.4	774.0	1,504.0		1,199.1	204.1	0.4	100.4
Waste alkali	54,390.4	8.0	4,299.8	38,150.3		11,932.3		5,347.5	5,331.4	1,184.9	68.7
Waste plastic	5,495.3		159.9	1,101.9		4,233.5		464.7	3,130.2	98.6	539.3
Waste paper	1,113.3		78.5	809.1		225.8		17.7	207.8		0.2
Wood waste	995.9			73.0		922.9		36.2	614.7	264.2	7.8
Textile waste	46.8			32.0		14.8		12.6	2.2		
Animal and plant residues	9.4					9.4		9.4			
Metal waste	878.2			0.4		877.8		437.5	423.1		17.2
Glass and pottery waste	666.9					666.9		155.3	471.1		40.6
Slag											
Debris	682.7					682.7		294.3	227.0		161.5
Soot and dust	30.7		9.0			21.7					21.7
Asbestos waste	2,601.5					2,601.5					2,601.5
Total	171,683.0	4,077.2	16,479.6	95,800.1	3,499.0	51,827.2	0.0	15,022.3	30,209.3	2,609.8	3,985.3

Environmental Activities: Supplementary Data

Sharing Environmental Protection and Management Targets (Japan)

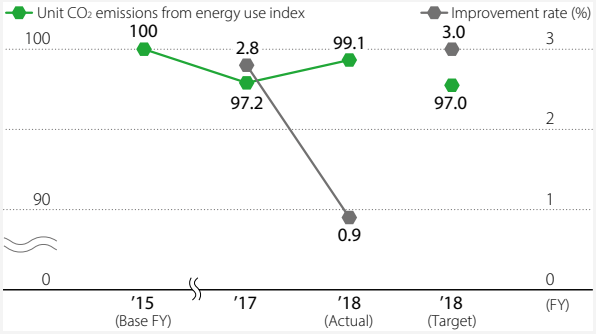
Unit Energy Consumption Indices (2015 = 100)



Improvement in Unit Energy Consumption

Target	Improve unit energy consumption by at least 1% annually on average.
Results	Unit energy consumption in fiscal 2018 improved by 0.3% compared with fiscal 2015, failing to achieve the target.

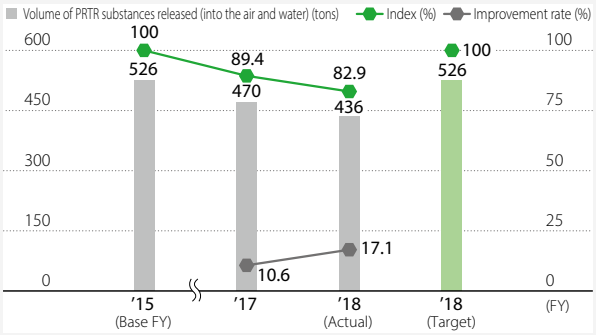
Unit CO_2 Emissions from Energy Use Indices (2015 = 100)



Improvement in Unit CO_2 Emissions from Energy Use

Target	Improve unit CO_2 emissions by at least 1% annually on average.
Results	Unit CO_2 emissions in fiscal 2018 improved by 0.9% compared with fiscal 2015, failing to achieve the target.

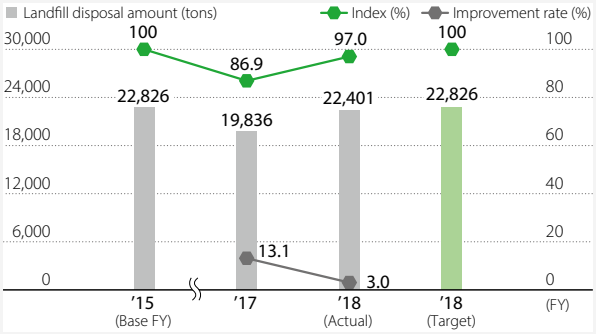
Volume of PRTR Substances Released (into the Air and Water) and PRTR Substance Emissions Indices (2015 = 100)



Reduction of Volume of PRTR Substances Released

Target	Maintain the total volume of PRTR substances released (into the air and water) at or below fiscal 2015 levels.
Results	The total volume in fiscal 2018 was reduced by 17.1% compared with fiscal 2015, achieving the target.

Landfill Disposal Amount and Landfill Disposal Indices (2015 = 100)



Reduction of landfill disposal amount

Target	Maintain landfill disposal amount at or below fiscal 2015 levels.
Results	The amount in fiscal 2018 was reduced by 3.0% compared with fiscal 2015, achieving the target.

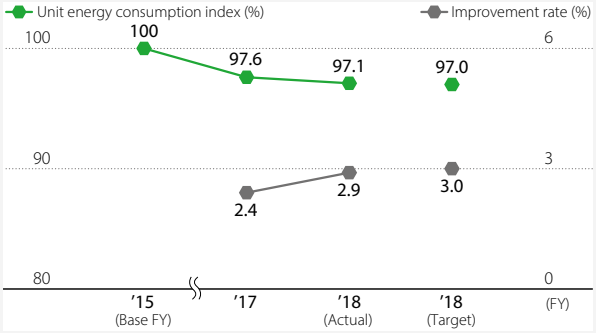
Note: **Sumitomo Chemical and the 15 Group companies listed below are included in the boundary of calculation.**

Sumika-Kakoushi Co., Ltd.; Sumika Color Co., Ltd.; Sumika Plastech Co., Ltd.; Nippon A&L Inc.; Nihon Methacryl Monomer Co., Ltd.; Asahi Chemical Co., Ltd.; Ceratec Co., Ltd.; Sumika Assembly Techno Co., Ltd.; SanTerra Co., Ltd.; Sumika Agro Manufacturing Co., Ltd.; SC Environmental Science Co., Ltd.; Sumika Agrotech Co., Ltd.; Sumitomo Chemical Garden Products Inc.; Nihon Medi-Physics Co., Ltd.; Sumitomo Joint Electric Power Co., Ltd.

Environmental Activities: Supplementary Data

Sharing Environmental Protection and Management Targets (Overseas)

Unit Energy Consumption Indices (2015 = 100)

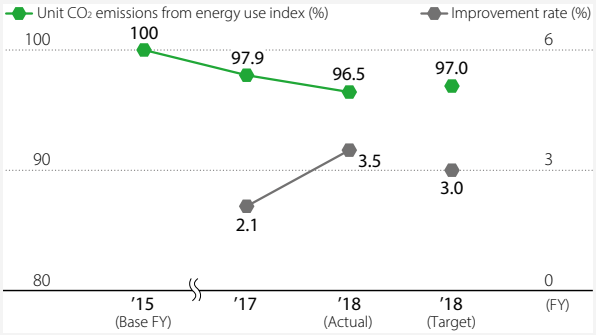


Improvement in Unit Energy Consumption

Target Improve unit energy consumption by at least 1% annually on average.

Results Consumption in fiscal 2018 improved by 2.9% compared with fiscal 2015, failing to achieve the target.

Unit CO_2 Emissions from Energy Use Indices (2015 = 100)

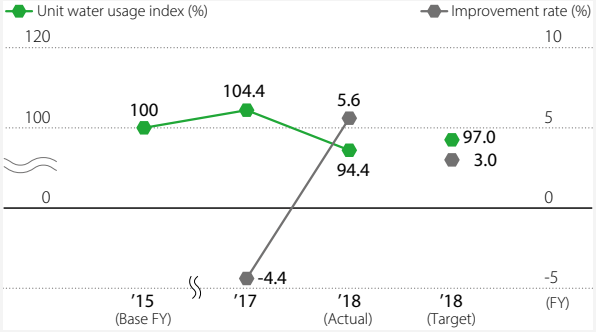


Improvement in Unit CO_2 Emissions

Target Improve unit CO_2 emissions by at least 1% annually on average.

Results Emissions in fiscal 2018 improved by 3.5% compared with fiscal 2015, achieving the target.

Unit Water Usage Indices (2015 = 100)



Improvement in Unit Water Usage

Target Improve unit water usage by at least 1% annually on average.

Results Usage in fiscal 2018 improved by 5.6% compared with fiscal 2015, achieving the target.

Note: **The following 20 Group companies overseas are included in the boundary of calculation:**

Singapore	• The Polyolefin Company (Singapore) Pte. Ltd. • Sumitomo Chemical Asia Pte Ltd
Thailand	• Sumipex (Thailand) Co., Ltd. • Bara Chemical Co., Ltd. • Sumika Polymer Compounds (Thailand) Co., Ltd.
China	• Dalian Sumika Chemphy Chemical Co., Ltd. • Sumika Electronic Materials (Wuxi) Co., Ltd. • Sumika Electronic Materials (Hefei) Co., Ltd. • Sumika Huabei Electronic Materials (Beijing) Co., Ltd. • Sumika Electronic Materials (Shanghai) Co., Ltd. • Sumika Electronic Materials (Xi'an) Co., Ltd. • Sumika Polymer Compounds Dalian Co., Ltd. • Zhuhai Sumika Polymer Compounds Co., Ltd. • Dalian Sumika Jingang Chemicals Co., Ltd.
Taiwan	• Sumika Technology Co., Ltd. • Sumipex Techsheet Co., Ltd.
India	• Sumitomo Chemical India Private Limited
South Korea	• Dongwoo Fine-Chem Co., Ltd. • SSLM Co., Ltd.
United States	• Sumitomo Chemical Advanced Technologies LLC

Environmental Activities: Supplementary Data

Environmental Management System

Between 1997 and 2001, ISO 14001:1996 certification was obtained at all Works and continually maintained thereafter. Updated ISO 14001 certification was obtained later and all Works have been inspected on a continual basis to ensure the certification does not expire.

Acquisition of ISO 14001 Certification (Sumitomo Chemical (All Works) (Acquisition Rate: 100%))

Works	Certificate Number	Certification Date
Ehime Works (including Ohe Works)	JCQA-E-018	April 1998
Chiba Works (including the SCIOCS Chiba Facility)	KHK-97ER, 004R6-05	June 1997
Osaka Works	JQA-E-90072	November 1997
Oita Works (Gifu Plant)	JCQA-E-0206	December 2000
Oita Works (Okayama Plant)	JCQA-E-0218	January 2001
Oita Works	JQA-E-90152	March 1998
Misawa Works	JQA-EM0355	March 1999

Environmental Activities: Supplementary Data

Evaluation of Environmental Protection Costs and Economic Effects through Environmental Accounting

Sumitomo Chemical continuously gathers and evaluates data on environmental protection-related expenses, investments, and economic results in line with the Company's environmental accounting system introduced in fiscal 2000.

◆ Items Pertaining to Environmental Accounting

(1) Period: April 1, 2018 to March 31, 2019
(2) Boundary: Sumitomo Chemical and 21 major consolidated subsidiaries (16 in Japan and 5 overseas)*
(3) Composition (Classification): Based on Ministry of the Environment (Japan) guidelines
(4) Outline of the results (investment and expenses): Consolidated investment increased year on year by 8.2 billion yen, and consolidated expenses increased by 5.4 billion yen.

* Sumitomo Dainippon Pharma Co., Ltd.; Koei Chemical Co., Ltd.; Taoka Chemical Co., Ltd.; Asahi Chemical Co., Ltd.; Sumitomo Joint Electric Power Co., Ltd.; Sumika Color Co., Ltd.; Nihon Medi-Physics Co., Ltd.; Nippon A&L Inc.; SanTerra Co., Ltd.; Sumika-Kakoushi Co., Ltd.; Sumika Agrotech Co, Ltd.; Ceratec Co., Ltd.; SC Environmental Science Co., Ltd.; SN Kasei Co., Ltd.; Sumika Agro Manufacturing Co., Ltd.; Sumika Plastech Co., Ltd.; Dongwoo Fine-Chem Co., Ltd.; Sumitomo Chemical Asia Pte Ltd; The Polyolefin Company (Singapore) Pte. Ltd.; Sumika Technology Co., Ltd.; and Sumika Electronic Materials (Wuxi) Co., Ltd.

Environmental Protection Cost

(Billion yen)

Classification		Details of Major Initiatives	FY2017				FY2018			
			Non-Consolidated		Consolidated		Non-Consolidated		Consolidated	
			Investment	Expenses	Investment	Expenses	Investment	Expenses	Investment	Expenses
Facility Area Costs			1.6	16.8	3.5	28.2	5.3	18.7	11.7	30.9
Breakdown	Pollution Prevention Costs	Prevention of air pollution, water pollution, soil contamination, noise pollution, odors, ground subsidence, etc.	(1.2)	(11.8)	(2.6)	(16.5)	(4.9)	(13.6)	(7.9)	(18.5)
	Global Environmental Protection Costs	Energy saving, prevention of global warming, ozone layer depletion, and other measures	(0.1)	(0.2)	(0.4)	(3.4)	(0)	(0.2)	(3.3)	(3.9)
	Resource Recycling Costs	Resource saving, water saving and rainwater usage, waste reduction/disposal treatment, recycling, etc.	(0.3)	(4.8)	(0.5)	(8.3)	(0.4)	(4.9)	(0.5)	(8.5)
Upstream/ Downstream Costs		Green purchasing, recycling, recovery, remanufacturing and appropriate treatment of products, recycling costs associated with containers and packaging, environmentally friendly products and services, etc.	0	0	0	0.3	0	0	0	0.3
Administrative Costs		Costs associated with environmental education, environmental management systems, the monitoring and measuring of the environmental impact of business activities and products, environmental organization operations, etc.	0	0.7	0	1.3	0	0.7	0	1.4
R&D Costs		Development of products with attention to environmental safety, research into energy-saving processes, etc.	0.1	3.9	0.1	4.0	0.1	6.6	0.1	6.7
Social Activities Costs		Protection of the natural environment and enhancement of its scenic beauty and greenery, support for community initiatives aimed at environmental protection, support for environmental preservation groups, environment-related paid contributions and surcharges, etc.	0	0.5	0	0.8	0	0.5	0	0.7
Environmental Remediation Costs		Environmental rehabilitation of contaminated environments and other environmental damage, reserve funds to cover environmental recovery, etc.	0	0	0	0	0	0	0	0
Total			1.7	21.9	3.6	34.6	5.4	26.5	11.8	40.0

Environmental Activities: Supplementary Data

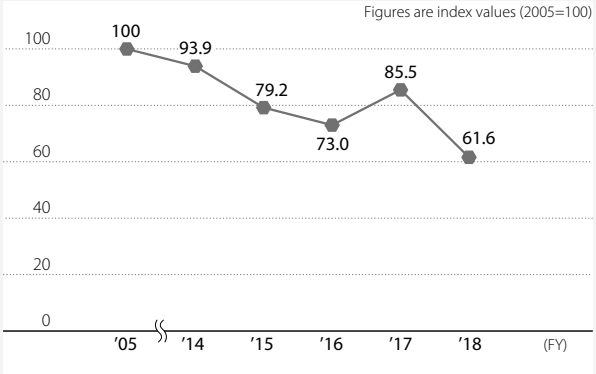
Economic Effects

(Billion yen)

Results	FY2017		FY2018	
	Non-Consolidated	Consolidated	Non-Consolidated	Consolidated
Reduced costs through energy saving	0.6	1.7	0.3	1.2
Reduced costs through resource saving	0.5	6.7	0.1	5.6
Reduced costs through recycling activities	2.2	3.7	2.6	2.8
Total	3.3	12.1	3.0	9.6

Economic effects are the rationalization value of per-unit improvement in such areas as energy and resource saving. In fiscal 2018, economic effects worsened year on year ¥0.3 billion on a non-consolidated basis and ¥2.5 billion on a consolidated basis.

Cost Efficiency of Environmental Protection Measures (Sumitomo Chemical (All Worksites))

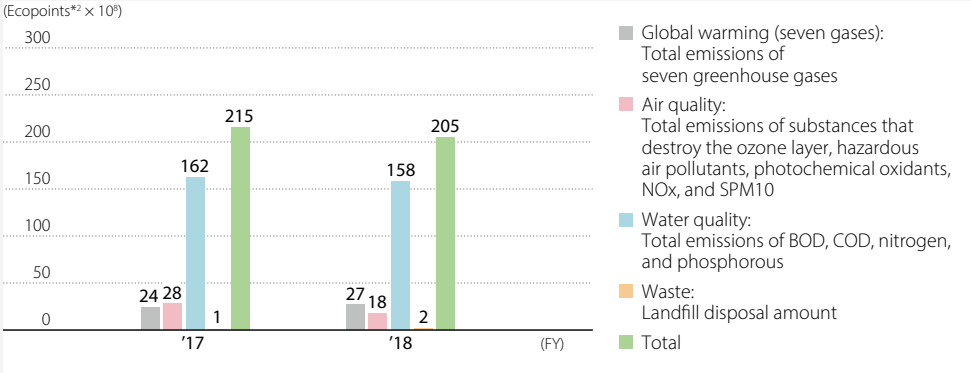


In fiscal 2009, we began implementing measures to improve the cost efficiency of our environmental protection measures by making sure that all activities were as cost effective as possible. We will implement more effective measures by analyzing and studying the breakdown of our environmental protection costs and reviewing each item to determine its importance. We calculate the cost efficiency of our environmental protection as the ratio of annual total production value to total environmental protection costs, in order to better reflect actual production activities in the calculation.

Environmental Activities: Supplementary Data

Examining the Practical Use of Environmental Efficiency Indicators and Environmental Management Accounting Methods

Breakdown of Aggregate Values for Environmental Impact (Sumitomo Chemical (All Works)) by JEPIX*1



Assessing the Environmental Impact of Each Group Company Using JEPIX

In fiscal 2018, as in the previous fiscal year, we undertook environmental impact assessments using JEPIX, in order to evaluate the effectiveness of this index as a strategic management indicator, and continued with relevant analyses.

Assessing the Environmental Impact of Each Product by LIME*3

For more practical use of LCA*4 data both internally and externally, we use LCA software (MiLCA) from the Japan Environmental Management Association for Industry to undertake environmental impact assessments of our major products using the LIME method.

Trial Evaluation of Material Flow Cost Accounting (MFCA)*5

We are continuing to evaluate the effectiveness of this tool and also are performing examinations for the simplification and standardization of the method and procedures in order to foster their use. MFCA, which focuses on the loss of energy and resources, helps minimize loss and cost and reduces environmental impact.

*1 Environmental Policy Priorities Index for Japan (JEPIX):
This method, which employs a uniform single indicator called "Ecopoints" to evaluate environmental impact, is derived from the Swiss LCIA Eco Scarcity methodology. The current method evaluates the discrepancy between targets (e.g., laws and environmental policies) and actual conditions based on material flow data.

*2 Ecopoints:
An indicator for total environmental impact—the smaller the value, the lower the environmental impact.

*3 Life-cycle Impact assessment Method based on Endpoint modeling (LIME)
A life-cycle impact assessment method developed in Japan as a cornerstone for measuring Japan's environmental conditions.

*4 Life Cycle Assessment (LCA):
A method for evaluating the environmental impact of products and services throughout their life cycles.

*5 Material Flow Cost Accounting (MFCA):
An environmental cost accounting method that identifies input costs of materials, processing, electricity, fuel, and others, and compares them with the energy and resources lost in manufacturing processes.

Society (Social Activities)

Contents

110 Social Activity Goals and Results
112 Respect for Human Rights
117 Procurement
121 Human Resources Management
123 Human Resources Development
127 Diversity and Inclusion
132 Healthcare
134 Occupational Safety and Health / Industrial Safety and Disaster Prevention
141 Product Stewardship / Product Safety / Quality Assurance
147 Responsibility to Our Customers
148 Initiative for Access to Healthcare
149 Local Communities
156 Social Activities: Supplementary Data
156 1 Human Resources
160 2 Occupational Safety and Health / Industrial Safety and Disaster Prevention
164 3 Product Stewardship / Product Safety / Quality Assurance
165 4 Social Contributions

Contributing to the SDGs through Social Activities

Social Activity Goals and Results

Goal achieved or steadily progressing: ○ Goal not achieved: △

Items		Boundary	Fiscal 2018 Goals	Fiscal 2018 Results	Evaluation	Fiscal 2019 Goals	Page
Procurement		Sumitomo Chemical Group	Thoroughly ensure compliance	Promote thorough compliance among relevant internal and external parties	○	Thoroughly ensure compliance	Pages 117–120
		Sumitomo Chemical and consolidated subsidiaries in Japan and overseas	Promote CSR procurement by strengthening collaboration with business partners through CSR surveys related to raw materials and packaging materials	Promoted CSR procurement by strengthening collaboration with business partners through monitoring and feedback (Sumitomo Chemical results)	○	Promote CSR procurement by strengthening collaboration with business partners through CSR surveys related to raw materials and packaging materials	
HR Management		Sumitomo Chemical Group	Further promote global human resources initiatives and human resources development	Held global manager meetings, systematically conducted global human resources development	○	Employ human resources and greatly strengthen hiring capabilities	Pages 121–133
		Sumitomo Chemical	Employ human resources and work on workforce management that is responsive to business expansion	Secured personnel by strengthening and updating our hiring practices and appropriately placed personnel in response to business expansion	○	Manage global human resources and work on workforce management that is responsive to business expansion	
		Sumitomo Chemical Group	Develop personnel and run HR systems to promote employee growth and development	Built and ran HR systems that encourage employee growth and development and revised training systems	○	Develop personnel and run HR systems to promote employee growth and development	
		Sumitomo Chemical	Promote diversity and inclusion and work-life balance	Promoted diversity and inclusion after designating it a material issue for management to address, held meetings about highly productive working styles, acquired certification as a 2019 Health & Productivity Management Outstanding Company (White 500)	○	Promote sustainability, diversity and inclusion and work-life balance	
Occupational Safety and Health / Industrial Safety and Disaster Prevention	Lost-workday injuries	Sumitomo Chemical	0	3	△	0	Pages 134–140
		Partner companies*1	0	2	△	0	
	Frequency rate of lost-workday injuries*2	Sumitomo Chemical Group*3	Less than 0.1	0.58	△	Less than 0.1	
	Severe accidents*4	Sumitomo Chemical Group*3	0	2	△	0	
	Severe industrial accidents*5	Sumitomo Chemical Group*3	0	0	○	0	
	Lost-workday injuries in logistics	Logistics	0	1	△	0	

Note: Further details are provided in the supplementary data (pages 156–163).

*1 A partner company injury is defined as one suffered within a Sumitomo Chemical worksite by an employee of a company affiliated with a logistics or construction subcontractor.

*2 The Responsible Care Department determines if accidents that occur at overseas consolidated subsidiaries are considered to be lost-workday injuries or non lost-workday injuries based on how the accidents are handled in Japan.

*3 For the purposes of occupational safety and health/industrial safety and disaster prevention, the Group is defined as Sumitomo Chemical (including its partner companies and others) and consolidated subsidiaries in Japan and overseas.

*4 Severe accidents are defined as those that result in a fatality or those that result in severe lost-workday injuries, including blindness or loss of a limb.

*5 Severe industrial accidents are defined as industrial accidents resulting in any of the below conditions.

- The local residents suffer injuries requiring at least regular hospital visits or treatment.
- Employees at the facility suffer injuries that require at least one lost workday.
- The damage to the facilities totals more than ¥10 million.

Social Activity Goals and Results

Goal achieved or steadily progressing: ○ Goal not achieved: △

Items		Boundary	Fiscal 2018 Goals	Fiscal 2018 Results	Evaluation	Fiscal 2019 Goals	Page
Product Stewardship / Product Safety / Quality Assurance	Laws and regulations	Sumitomo Chemical	Continue to act precisely in accordance with domestic and overseas laws and regulations	Acted precisely in accordance with relevant laws and regulations	○	Continue to act precisely in accordance with domestic and overseas laws and regulations	Pages 141–146
	Chemicals management and information disclosure	Sumitomo Chemical	Continue to promote risk-based chemicals management and information disclosure	Systematically put in place risk assessment methods	○	Continue to promote risk-based chemicals management and information disclosure	
	Chemical management system	Sumitomo Chemical	Continue to promote utilization of the comprehensive chemical management system (SuCCESS) and develop concrete plans for expansion to Group companies	As part of our efforts to promote utilization of SuCCESS, one additional Group company began using the system, bumping the total to 11. We began using a substance volume tracking (SVT) system to report the manufacture / import volume (to government) under the chemical substances control law.	○	Continue to promote utilization of SuCCESS and develop concrete plans for expansion to Group companies	
	Risk assessment	Sumitomo Chemical	Steadfastly perform product safety risk reassessments	Performed 61 product safety risk assessments, including 22 reassessments	○	Steadfastly perform product safety risk assessments	
	Logistics quality-related incidents	Sumitomo Chemical*1	No Rank A or Rank B incidents, two or fewer Rank C incidents	No Rank A or Rank B incidents, one Rank C incident	○	No Rank A or Rank B incidents, two or fewer Rank C incidents	
Local Communities		Sumitomo Chemical Group	Provide support to achieve the United Nations Sustainable Development Goals	Provided support for tree-planting activities and education through Matching Gift programs (includes support for education in Africa)	○	Provide support to achieve the United Nations Sustainable Development Goals	Pages 149–155
		Sumitomo Chemical Group	Provide prompt and precise support in response to emergencies and disasters in Japan and overseas	Provided support in response to areas affected by the July 2018 torrential rains	○	Provide prompt and precise support in response to emergencies and disasters in Japan and overseas	
		Sumitomo Chemical Group	Promote social contribution activities distinctive to the Sumitomo Chemical Group by leveraging the strengths of each workplace	Participated in and cooperated with local events, held science workshop classes, held plant tours, etc.	○	Promote social contribution activities distinctive to the Sumitomo Chemical Group by leveraging the strengths of each workplace	
		Sumitomo Chemical Group	Continue to expand information disclosure using SDGs and promote interactive dialogue	Continued to expand information disclosure using SDGs and promote interactive dialogue	○	Continue to expand information disclosure using SDGs and promote interactive dialogue	

Note: Further details are provided in the supplementary data (pages 164–165).

*1 Includes some Group companies in Japan that have Works within a Sumitomo Chemical worksite.

Respect for Human Rights

Basic Stance

Under the three-year Corporate Business Plan launched on April 1, 2019, Sumitomo Chemical regards respect for human rights as one of the foundations for ensuring sustainability of its business. In April 2019, Sumitomo Chemical established the "Sumitomo Chemical Group Human Rights Policy" and the "Human Rights Promotion Committee," a committee tasked to promote human rights, based on the Universal Declaration of Human Rights, the International Labor Organization Declaration on Fundamental Principles and Rights at Work, the Ten Principles of the United Nations Global Compact, and the United Nations Guiding Principles on Business and Human Rights. In order to ensure that the Group as a whole is committed to respecting human rights, Sumitomo Chemical makes every effort to ensure that all Group companies in Japan and overseas are fully aware of our basic policies.

Sumitomo Chemical Group Human Rights Policy (Effective April 1, 2019)

This policy was formulated based on the advice of outside human rights experts with practical experience.

Sumitomo Chemical Group (Sumitomo Chemical Co., Ltd. and its Group Companies) has put in place this Human Rights Policy ("Policy") to demonstrate its commitment to international standards on human rights. All directors, executive officers and employees ("Personnel") of the Sumitomo Chemical Group will uphold this Policy.

1. Our Position on Human Rights

(1) Compliance with Standards, Laws and Regulations

We support and respect international standards on human rights, such as the Universal Declaration of Human Rights, International Labor Organization (ILO) Declaration on Fundamental Principles and Rights at Work, and promote respect for human rights in line with the United Nations Guiding Principles on Business and Human Rights. Sumitomo Chemical Co., Ltd. is a signatory to the United Nations Global Compact and supports its Ten Principles, which include human rights and labor.

We comply with applicable laws and regulations in countries and regions where we operate, and where local laws and regulations conflict with international standards, we will seek ways to honor the principles of internationally recognized human rights.

(2) Respect for Human Rights in Our Business Activities

We do not discriminate against individuals based on employment status, age, sex, ethnic or social origin, ancestry, nationality, disability, religion, beliefs, marital status, or any other status. We do not tolerate any form of harassment, including sexual harassment or workplace bullying. We also respect fundamental labor rights including freedom of association and the right to collective bargaining, and prohibit forced labor or child labor.

We are committed to respecting human rights in our business activities and also strive to avoid contributing to infringement of human rights. In order to prevent and mitigate human rights risks related to our business activities, we will take necessary measures, including ensuring compliance with the Compliance Manual (the Sumitomo Chemical Code of Business Conduct) and other relevant policies and guidelines. We are also committed to understanding our impact on local communities and aim for harmonious coexistence with these communities.

We expect our business partners, including our suppliers, and other relevant stakeholders to act in line with the principles in this Policy, and we will seek ways to work with them to promote respect for human rights.

Respect for Human Rights

2. Our Approach to Human Rights Issues

(1) Providing Education and Raising Awareness

We will provide appropriate education and training to our Personnel so that this Policy is understood and effectively implemented.

(2) Human Rights Due Diligence

We will identify adverse human rights impacts, and seek to prevent or mitigate such impacts though our human rights due diligence framework.

(3) Responding to Identified Human Rights Impacts

We will engage with relevant stakeholders in order to address actual or potential adverse human rights impacts.

(4) Remedy

Where we identify that we have caused or contributed to adverse human rights impacts, we will endeavor to remediate such impacts through appropriate processes.

(5) Grievance Mechanisms

We have grievance mechanisms in place in the form of the Speak-Up Reporting System (whistle-blowing channels) in order to address concerns about activities that may adversely impact human rights or any other concerns raised about our business activities. These channels are available for anyone having involvement in Sumitomo Chemical Group's business activities, including their business partners as well as Sumitomo Chemical Group Personnel and their families. We will continuously seek to optimize our grievance mechanisms.

(6) Disclosure

We will report on our efforts to respect human rights including through our website, integrated report, Sustainability Data Book, and other relevant channels.

Respect for Human Rights

Management System

Human Rights Promotion Committee

In order to fulfill its responsibility to respect human rights throughout the value chain, Sumitomo Chemical has established the Human Rights Promotion Committee as the organization to promote activities in accordance with its policies. Since this committee is an initiative that spans the entire value chain, representatives from a wide range of relevant departments are called into the committee.

The Executive Officer in charge of corporate sectors is the committee's Chairman, and the Executive Officers in charge of the Planning & Coordination Offices in each business sector participate as committee members to ensure the effectiveness of the committee.

Roles of the Committee

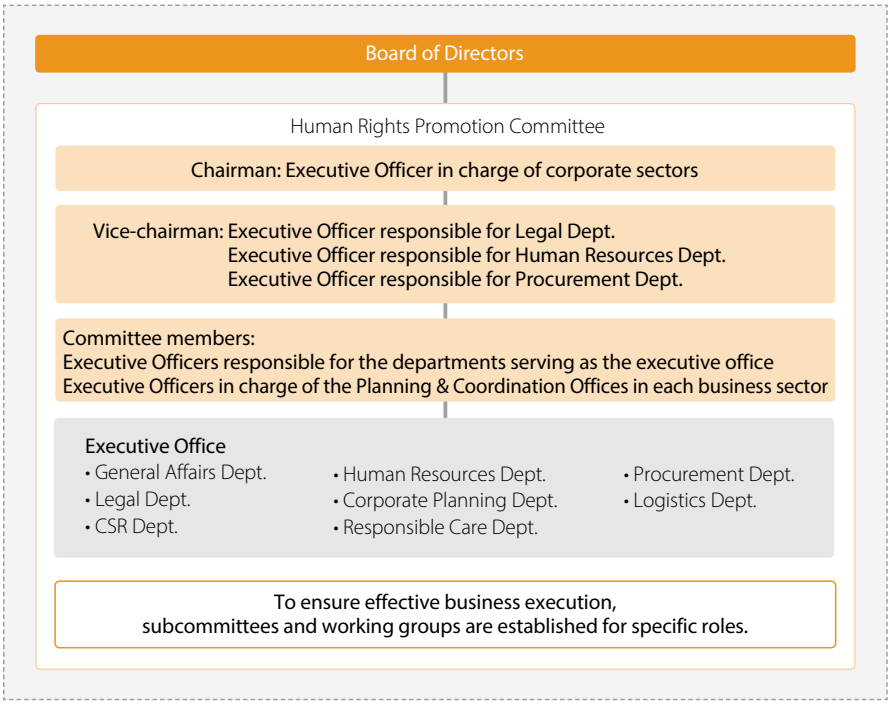
(1) Promotion of Human Rights Awareness

(2) Formulation and implementation of the following proposals regarding respect for human rights throughout the value chain of the entire Sumitomo Chemical Group:

— Formulation and publication of policies required by the Guiding Principles on Business and Human Rights and relevant national laws

— Identification of human rights issues by conducting risk assessments across the entire value chain; and taking appropriate actions, including remedial measures that are commensurate with the specific issue or risk (human rights due diligence and remedy)

■ Promotion System



The Sumitomo Chemical Group's System

Based on the basic policy on human rights, Sumitomo Chemical strives to put together and take actions on specific measures to promote respect for human rights, in collaboration with domestic and overseas Group companies and urging our business partners to cooperate.

In particular, at overseas, Sumitomo Chemical has set up the regional headquarters in the United States, Belgium, Singapore and China that have established the compliance systems in accordance with the respective local legal system and are working to ensure and promote compliance of each of the local companies' operations in the region, including initiatives to protect human rights.

Respect for Human Rights

Examples of Initiatives

Sumitomo Chemical has outlined its basic policy on human rights in its *Compliance Manual* (Sumitomo Chemical Code of Business Conduct). Sumitomo Chemical is raising awareness of this policy through the intranet.

Under this policy, Sumitomo Chemical makes it clear that, in line with the principle of respect for individuals, Sumitomo Chemical has completely rooted out speech and behavior that manifests as harassment and bullying, such as that which disparages another's character based on personal opinions or values without respecting their individualities.

In addition, Sumitomo Chemical prohibits all forms of harassment, including power harassment and sexual harassment (including LGBT-related and that directed at people of the same gender).

Regarding the prohibition of unfair discrimination, Sumitomo Chemical does not conduct any discriminatory acts that impugn people's dignity based on employment type, age, gender, birthplace, ancestry, nationality, race, disability, religion, beliefs, marital status, or other such attribute. Sumitomo Chemical also prohibits discrimination based on a person's physical gender or perceived gender due to a difference in gender identity or sexual orientation, and discrimination against people with disabilities.

Raising Employees' Awareness of Human Rights

To educate employees on human rights issues, Sumitomo Chemical incorporates human rights-related education into not only the introductory training all employees take after joining Sumitomo Chemical but also all internal training programs, including those for newly promoted employees.

In addition, Sumitomo Chemical implements training and other measures at each workplace to protect human rights.

■ Initiatives to Raise Awareness of Human Rights (Sumitomo Chemical) (FY2018)

	Sessions	Participants	Percentage
Seminars and lectures on human rights	107 (Company-wide)	5,639 (running total)	92.5% of all employees

Consultation Office

Aiming to establish a system wherein employees are able to receive counseling for various kinds of harassment, including power harassment, sexual harassment, and maternity harassment, Sumitomo Chemical has set up a harassment consultation office staffed with counselors. In fiscal 2018, as in the past, there were no cases recognized as discrimination.

Human Rights Initiatives in the Supply Chain

Since 2009, we have been promoting the Sumitomo Chemical Supply-Chain CSR Deployment Guidebook as an initiative for responsible procurement throughout the entire supply chain. The guidebook asks suppliers to respect human rights, prohibit harassment and other forms of unethical treatment, root out discrimination when advertising open positions and when hiring, realize equality in opportunities and fair compensation, comply with legal standards regarding working hours, respect the rights of labor to organize, prohibit forced labor and child labor, and comply with minimum wage requirements.

Furthermore, once again demonstrating our commitment to ensuring that human rights are respected throughout the entire supply chain and to ensure executive officers' strict compliance with related initiatives, the Group announced its support for the Joint Declaration on Rectifying Business Practices That Lead to Long Working Hours, which the Japan Business Federation and around 110 other business and economic associations have ratified. In addition, we set up a website especially for the Compliance Manual's human rights initiatives in the value chain, including the supply chain. We ensure that the Group's executives and employees comply with our efforts.

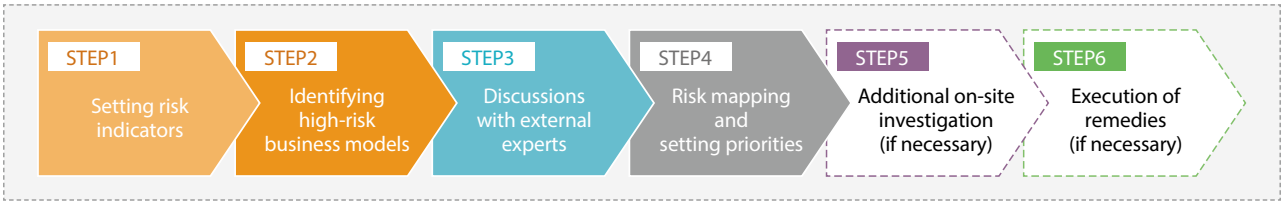
Respect for Human Rights

Human Rights Due Diligence and Remedy

The Sumitomo Chemical Group has established a human rights due diligence framework in accordance with the Guiding Principles on Business and Human Rights, in addition to its previous initiatives for CSR procurement, with the aim of ensuring respect for human rights through business activities. Human rights due diligence is a continuous effort to identify potential adverse human rights impact throughout the value chain through our Group's business activities, to prevent and remediate such adverse impacts, and to disclose information on the details of responses and results to the public. The CSR Dept., Legal Dept., Procurement Dept., and Logistics Dept. are working together to ensure that the entire value chain is thoroughly checked under this human rights due diligence framework.

In fiscal 2019, in addition to previous initiatives, we plan to identify risks by establishing risk indicators based on the nature of our business and the regional characteristics of the Sumitomo Chemical Group's business activities and conducting investigations. In addition, we plan to identify risks through investigations involving external experts, including additional on-site investigations when necessary. If, through this human rights due diligence process, it is determined that the Group's business activities are causing or contributing on adverse human rights impact, we will engage with relevant stakeholders and endeavor to rectify and remediate such impact through appropriate processes.

Overview of Human Rights Due Diligence Initiatives



Looking Ahead

Sumitomo Chemical and its Group company, under the initiative of the Human Rights Promotion Committee, will continue to promote respect for human rights in accordance with the Sumitomo Chemical Group Human Rights Policy.

Procurement

Basic Stance

Policy on Responsible Procurement

The Sumitomo Chemical Group is committed to building mutually beneficial and sound relationships with business partners. In addition to, ensuring fairness, equitability, and transparency in our transactions with business partners, we are promoting responsible procurement activities throughout the supply chain with an emphasis on compliance and respecting human rights, which will encourage our partners to also engage in CSR activities. Furthermore, Sumitomo Chemical's stance toward and policy on responsible procurement is clarified in the Basic Procurement Principles and the Group Business Standards of Procurement, which provide guidelines for procurement operating activities for Group companies in Japan and overseas.

Basic Procurement Principles (Outline)

1. The Procurement Section shall strive to conduct procurement transactions on the basis of fair, equitable, transparent and free competition without involving personal interests or arbitrary considerations.
2. The Procurement Section shall strive to select suppliers to transact with in accordance with the most appropriate and economically rational methods and shall pursue the maintenance of sound business relationships with suppliers, aiming for mutual growth and development.
3. The Procurement Section shall strive to provide corporate services globally throughout the entire Group.
4. In its procurement, the Procurement Section shall give preference to those suppliers that are active in CSR initiatives, with the aim of fulfilling its corporate social responsibilities and building sound relationships with suppliers.
5. The Procurement Section shall strive always to meet the quality requirements of Sumitomo Chemical's internal sections that request purchases of Goods and Services.
6. In performing Procurement Operations, the highest priority shall be given to safe and stable operations in order to realize zero-accident and zero-injury operations.
7. In performing Procurement Operations, the highest consideration shall be given to customer satisfaction.
8. The Procurement Section shall ensure the transparency of Procurement Operations.

Policy Related to Conflict Minerals

The Sumitomo Chemical Group is working to ensure responsible procurement to build sound relationships with suppliers and fulfill its corporate social responsibility regarding procurement activities.

There is a social expectation of compliance to a U.S. rule* on conflict minerals from a CSR and compliance perspective, and we are therefore promoting responsible raw material procurement.

* Rule on conflict minerals: A final rule applying to companies that are publicly listed in the United States that was adopted by the U.S. government in August 2012 pursuant to Section 1502 of the Dodd Frank Wall Street Reform and Consumer Protection Act, which is known as the Conflict Minerals provision. The rule requires companies to disclose and report to the U.S. Securities and Exchange Commission the use in their products or production processes of conflict minerals, including tantalum, tin, gold, or tungsten, originating from the Democratic Republic of Congo or adjoining countries.

Detailed Information

https://www.sumitomo-chem.co.jp/english/sustainability/society/partners/

Procurement

Management System

In line with the policy on responsible procurement, we formulate and implement plans related to responsible procurement, share these plans with Group companies, and carry out these plans in cooperation with Business Sectors. Furthermore, Sumitomo Chemical's stance toward and policy on responsible procurement is clarified in the Group Business Standards of Procurement, which provide guidelines for procurement operating activities for Group companies in Japan and overseas. We are promoting relevant initiatives across the entire Group.

Goals and Results

FY2018 Group-wide Initiatives

Main Initiatives	Details
Group purchasing information exchange meetings (Japan) 2 times	• Participating companies: 21 • Shared information and held discussions regarding the importance of sustainability measures, including those related to human rights and the environment; our stance toward and policy on responsible procurement; and specific initiatives
Group purchasing information exchange meeting (overseas) 1 time	• Participating companies: 5 (Group companies forming the base in various regions like Asia and the United States participated in the meeting) • Gave an introduction to sustainability measures and Group companies' responsible procurement initiatives
Company-wide procurement liaison meetings 2 times	• Participants: Representatives responsible for procurement of Business Sectors • Discussed the importance of sustainability measures, including those related to human rights and the environment; our stance toward and policy on responsible procurement; and specific initiatives
Procurement staff education	• Participants: All procurement staff (including new employees and transferees) • Learned about the importance of sustainability measures, including those related to human rights and the environment; our stance toward and policy on responsible procurement; and specific initiatives

FY2018 Initiative for Business Partners

Main Initiatives	Details
Business Partner Dialogues 4 times	• Participating companies: 32 • Gave introductions on sustainability initiatives and shared information regarding human rights (child labor, etc.) and occupational safety
Using the CSR Deployment Guidebook and Check Sheets	New business partners: • Acquisition rate: 100% • Business partners who were rated "good" and with whom business began: 100% Established business partners: • Conducted monitoring and solicited feedback mainly in line with quality assurance audit plans

Procurement

Examples of Initiatives

Responsible Procurement Activities

Sumitomo Chemical has added a webpage about CSR procurement to its Procurement Information page on its official website to inform more stakeholders of its responsible procurement initiatives. The webpage features the *Sumitomo Chemical Supply-Chain CSR Deployment Guidebook*, which explains those CSR promotion items that the Company asks suppliers to follow. Moreover, Sumitomo Chemical has formulated the *Sumitomo Chemical Supply-Chain CSR Deployment Check Sheets* to enable suppliers to conduct self-evaluations regarding all items. Suppliers can now download the guidebook and check sheets and report the results of their self-evaluations.

Sumitomo Chemical Supply-Chain CSR Deployment Check Sheets (CSR Criteria Explanation)

0 Overall Promotion of Corporate Social Responsibility (CSR)

The questionnaire begins with a confirmation of the company's performance regarding: clearly declaring the importance of CSR as a business policy; designating an organization and manager responsible for CSR promotion; publicly announcing the status of its CSR promotion efforts; having a system in place; and deploying its own CSR program to suppliers.

Ⅰ Compliance with Laws and Ethics

Questions in this chapter focus on whether the company properly: ensures compliance with various business laws (including laws and regulations in Japan and overseas, such as REACH); prohibits impediments to free competition; prohibits abuse of a superior position; prohibits corruption and bribery; prohibits the offering and receiving of inappropriate profits and advantages; ensures respect for intellectual property; detects and prevents injustice promptly; and prevents the leakage of personal information as well as customer and third-party confidential information.

Ⅱ Human Rights and Labor

Questions in this chapter focus on whether the company properly: ensures respect for human rights; prohibits discrimination; regulates working hours; respects the rights to freedom of association; prohibits forced labor; prohibits child labor; and pays appropriate wages.

Ⅲ Accident Prevention and Occupational Health and Safety

Questions in this chapter focus on whether the company properly: ensures proper disaster and accident management; applies safety measures for equipment and instruments; promotes safety in the workplace; promotes hygiene in the workplace; and promotes health maintenance programs for employees.

Ⅳ Environmental Conservation

Questions in this chapter focus on whether the company properly: establishes and implements an environmental management system; controls hazardous chemicals in manufacturing; obtains environmental and government permits; minimizes environmental pollution (water, soil, air); promotes waste reduction; and promotes resource and energy saving by reducing, reusing, and recycling (3Rs).

Ⅴ Product Quality and Safety

Questions in this chapter focus on whether the company properly: establishes and implements a quality management system; controls hazardous chemicals in products; provides accurate information on products and services; and furnishes prior consultation on manufacturing process change and compliance with standards and specifications.

Procurement Information, "*Sumitomo Chemical Supply-Chain CSR Deployment Guidebook*"

https://www.sumitomo-chem.co.jp/english/sustainability/files/docs/cp_csr_guidebook_e.pdf

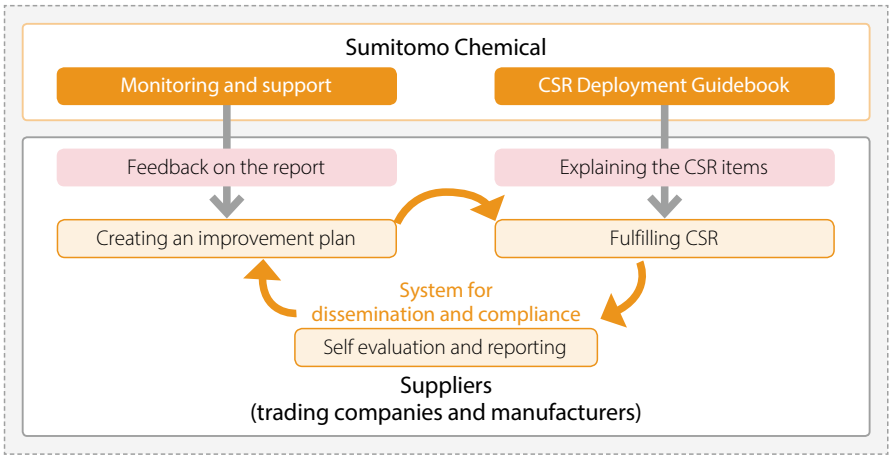
Procurement Information, "*Sumitomo Chemical Supply-Chain CSR Deployment Check Sheets*"

https://www.sumitomo-chem.co.jp/english/sustainability/files/docs/cp_csr_check_list_e.pdf

Procurement

Promoting Responsible Procurement throughout the Supply Chain

We have every new supplier gain a better understanding of Sumitomo Chemical's policies and stances through the *Sumitomo Chemical Supply-Chain CSR Deployment Guidebook*. We also have them fill out and submit the *Sumitomo Chemical Supply-Chain CSR Deployment Check Sheets*. This enables us to do our due diligence regarding their compliance status, and, upon confirmation of satisfactory evaluation results, we begin doing business with them. Following that, we regularly monitor their compliance status and strive to prioritize procurement from those suppliers who are working hard to ensure responsible procurement. We manage the data from the monitoring and periodically assess the content. For suppliers who need to follow-up on problems revealed by the monitoring, we furnish feedback to raise awareness of and cooperation in ensuring responsible procurement.



Initiatives Related to Conflict Minerals

There is a social expectation of compliance to a U.S. rule on conflict minerals from a CSR and compliance perspective, and we are therefore confirming that the minerals in the raw materials we procure are conflict-free. We do this through cooperation between relevant internal sectors and the periodic distribution and collection of questionnaires to all suppliers of raw materials that contain these substances.

If we determine there is a problem after confirming the results with the supplier, we take appropriate measures, which could be a request for improvement or the suspension of procurement of conflict minerals.

Promoting Responsible Procurement throughout the Group

We periodically hold Group purchasing information exchange meetings that gather together responsible purchasing representatives from each Group company in Japan and overseas to discuss promoting responsible procurement throughout the Group. In addition, to ensure smooth communication, we set up a website with the Group companies to reciprocally share information as we strive to promote and encourage responsible procurement as a unified Group.

Information exchange meeting at Group companies in Japan and overseas

Looking Ahead

In line with the Basic Principles for Promoting Sustainability, the Sumitomo Chemical Group will continue to strengthen cooperation with business partners and promote responsible procurement in the spirit of respecting human rights and ensuring compliance.

Human Resources Management

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Basic Policy

'People' are a major source of corporate competitiveness, and securing highly motivated and capable personnel is the foundation of business operations.

In addition, our business environment has become more complex and sophisticated due to the recent expansion of our business domains and advances in technological innovation. In these circumstances, it has become extremely important to secure personnel with broad knowledge and diverse skills, and to focus on training so that employees can maximize their abilities.

Against this backdrop, the current Corporate Business Plan sets forth employing, developing, and leveraging human resources to support sustainable development as one of its basic policies.

Based on this policy, we are strengthening our recruitment capabilities dramatically and effectively promoting the current personnel and training systems based on the basic philosophy of "development and growth." We are also working to create an environment in which diverse personnel can work healthily and energetically.

Number of Employees (Sumitomo Chemical Group)

	FY 2016	FY 2017	FY 2018★
Male	24,232	24,015	24,483
Female	8,304	7,822	8,059
Total	32,536	31,837	32,542

Note: The above figures are as of March 31 for each fiscal year. Employee numbers do not include temporary employees, part-time staff, dispatch employees, and staff assigned to other companies not included in the scope of consolidation, but do include staff assigned from other companies not included in the scope of consolidation.

Human Resources System Initiatives

Sumitomo Chemical has introduced a human resources system in which employee treatment is based on the content of each person's work, the magnitude of their responsibilities, and the achievements they have accomplished, as well as the abilities and activities they have displayed and undertaken. Through this system, employees with motivation and abilities are able to take on the challenge of a higher role as soon as possible, thereby fostering their willingness to grow voluntarily.

Accordingly, our evaluation system is not limited to evaluating how well each employee is able to perform the duties their position and role entails; it evaluates how well said employee demonstrates their ability to deliver real results and acquire the knowledge and skills needed to do so. The system thus encourages individual development and growth without overly focusing on short-term achievements.

Managers talk with their subordinates on a regular basis to help increase their motivation and abilities with feedback on their performance, objectives, behavioral advantages, and areas for improvement. In the interviews, they also discuss workplace policies, job expectations, and career paths. Furthermore, we have adopted the same performance evaluation system for managers at overseas Group companies as for Sumitomo Chemical's managerial employees.

Human Resources Management

Characteristics of Our HR Systems

(1) Career Development Field (CDF)

To encourage development and growth amid the current climate of diversifying ideas about career trajectories, we have incorporated Career Development Fields (CDF) (professional categories) into our HR systems. We decided to do this because we understand the importance of determining the details of medium- to long-term placements and training in line with each employee's ability and suitability as well as based on their career goals. Planned placements and training are conducted in line with each employee's career goals, and employees' experience of their own development and growth serves to further encourage them to take the reins when thinking about their careers.

■ CDF

Field X	A career in which the employee takes on a specified role, while also working on tasks that support the maintenance and development of Sumitomo Chemical's business over the medium- to long-term.
Field Y	A career in which the employee works on tasks that contribute to the development of business as a professional, within a role with a defined scope.
Field Z	A career in which the employee works on a variety of tasks supporting things like the development of new technology and the increasing sophistication and complexity of business.

(2) Careers for Specialists

We offer more than the conventional path, which assumes a largely vertical progression in rank from manager to general manager, and so on. To reflect the increasingly advanced and complex nature of operational and R&D fields, we have introduced a mechanism that provides appropriate compensation so that personnel with sophisticated abilities in their specialization can unleash their full potential and rack up accomplishments.

■ Careers for Specialists

Associates	Fellows
Associates refers to those who have particularly outstanding expert knowledge or capabilities, who are hard to replace in specific fields, and who can be expected to continue to make significant contributions in their field using that expertise	Fellows refers to those who, among the Sumitomo Chemical researchers who have produced particularly outstanding research results on the basis of their high-level expertise, and who are also recognized for their achievements outside the company, are expected to contribute significantly to the research activities of Sumitomo Chemical in the future

Human Resources Management

<Human Resources Development>

Basic Policy

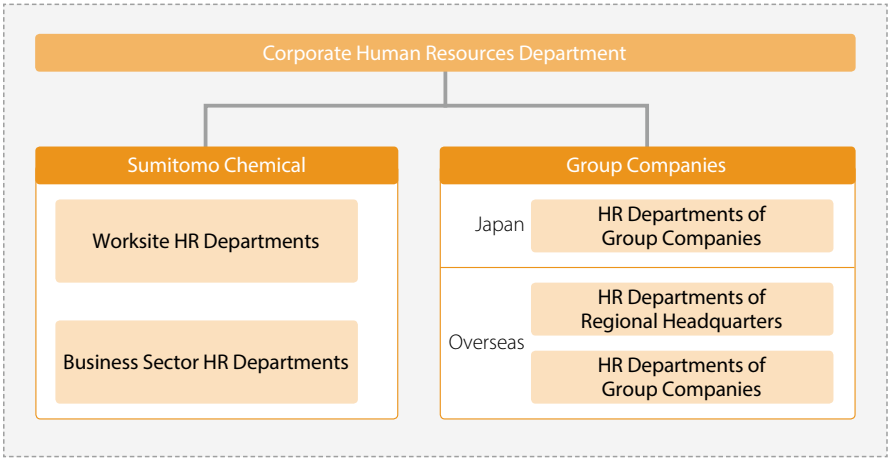
Based on the policy of developing human resources to support sustainable growth, Sumitomo Chemical is promoting various measures that contribute to the growth of each and every employee.

As concrete measures for human resources development, employees are rotated through job assignments that match with their career field under the aforementioned CDF in order to encourage employee development and grow. As for education measures, the Company is developing various educational programs based on an educational system organized from the perspectives of fostering awareness of the development of subordinates and their own growth awareness, strengthening the links between education and practical work, strengthening global human resource development measures, and fostering management personnel in digitization. In addition, we provide IT literacy education to all employees to improve the productivity of each employee.

Management System

The Corporate Human Resources Department works closely with the HR departments of worksites, business sectors, regional headquarters, and Group companies in Japan and overseas to promote and roll out various programs. In addition, employees are rotated through job assignments based on each person's specific training plans while sharing information with the production, administration, and HR departments.

■ Promotion and Rollout of Company-wide Training Programs Overseen by HR Departments

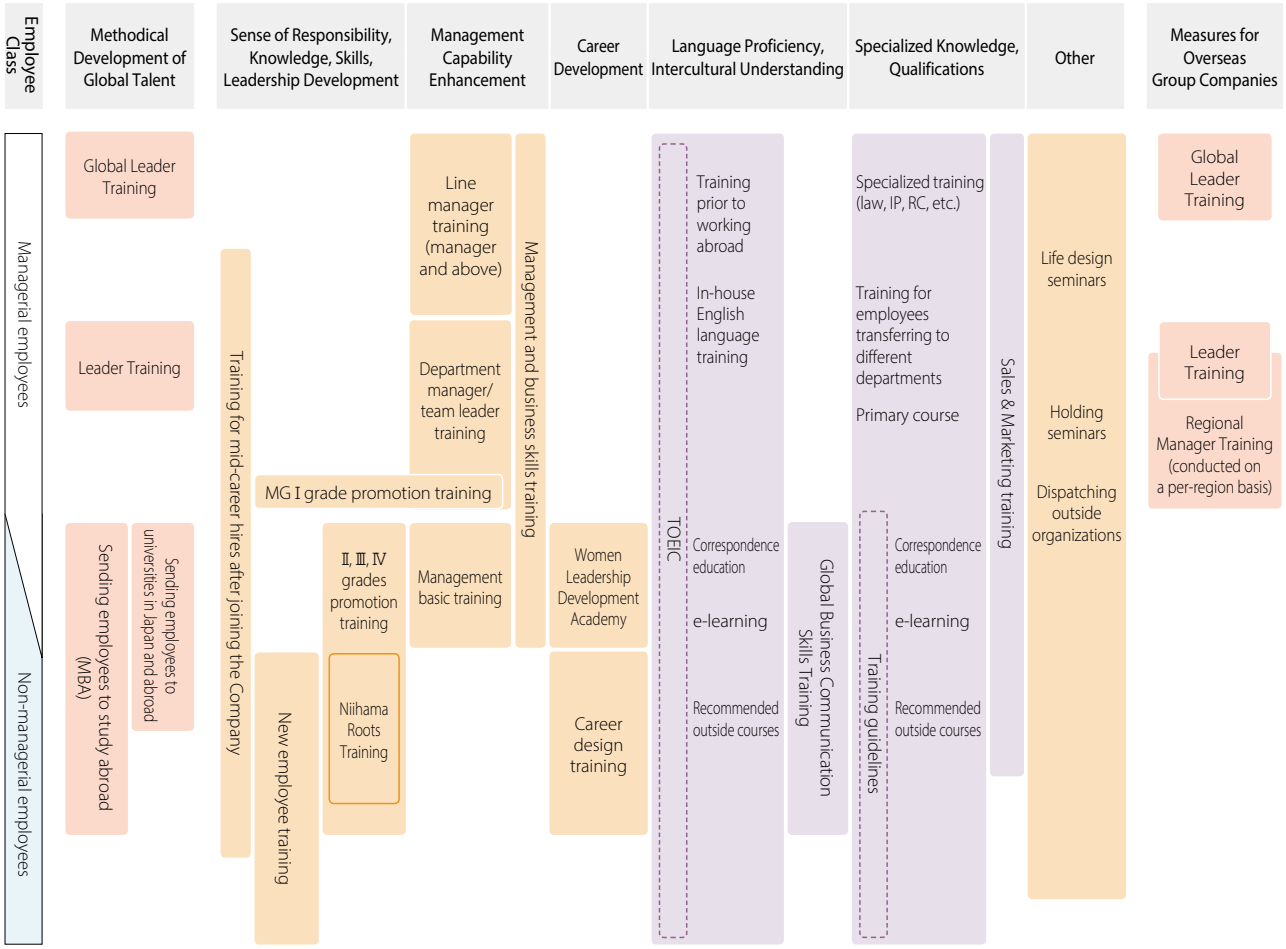


Human Resources Management

Targets and Results / Examples of Initiatives

We are working to enhance employee capabilities and develop human resources by implementing various training programs and measures for different purposes and employee classes.

Organization of Training Programs



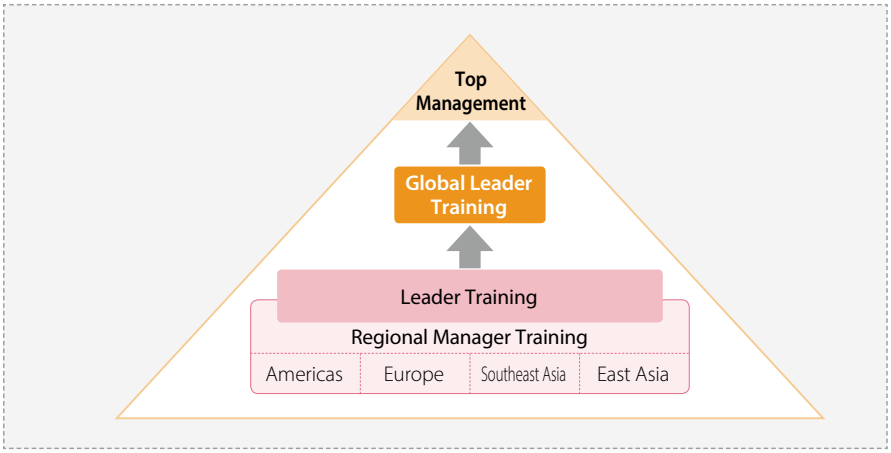
Note: The Company conducts in-house training courses in the areas of compliance, human rights, CSR, and health maintenance and improvement

Human Resources Management

Methodical Development of Global Talent

Sumitomo Chemical is carrying out a staged training program in human resource development for employees both in Japan and at overseas Group companies, in order to discover and develop next-generation leaders in a systematic way, emphasizing the creation of Global Leaders who can take on the role of core management.

Next-Generation Leader Development System



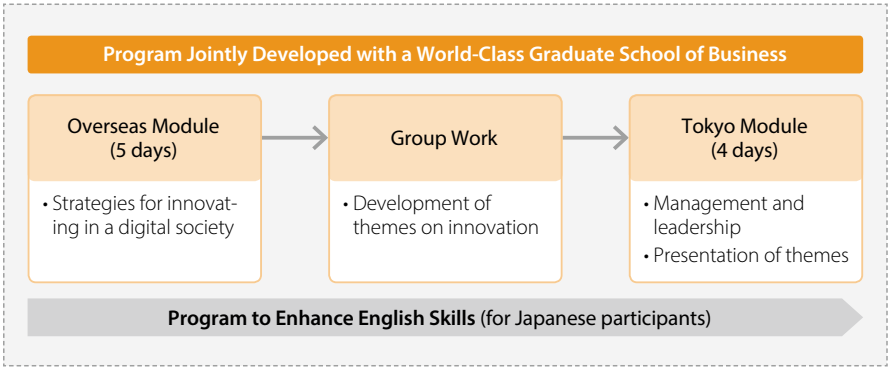
(1) Global Leader Training

In our Global Leader Training for general managers inside and outside of Japan, participants learn about management perspectives and insights through lectures and discussions featuring executive officers and external executives. They decide on their own topics and provide advice on the content of these specific initiatives to the president and others in management.

(2) Leader Training

In Sumitomo Chemical's Leader Training for managerial employees both inside and outside of Japan, Sumitomo Chemical has worked with an overseas graduate school of business to carry out a program in both Singapore and Japan, held completely in English, with the goal of developing the employees' conceptual strength and abilities to propose strategies for the creation of new value.

Leader Training Program



Human Resources Management

Recruitment, Human Resources Development and Human Resources System

(No. of people)

Name	Approach	FY2016	FY2017	FY2018
Trainer System	Highly skilled employees who have an aptitude for teaching provide instruction and advice to younger employees to facilitate their development.	57	65	42
Senior Training Advisor System	Supervisors and potential supervisors are provided OJT to develop core personnel for manufacturing departments	5	5	4
Development of Global Talent	In order to create global leaders who will play a central role in management and to develop talent that supports our global business operations, we systematically conduct various training programs.			
(1) Global Leader Training	Our global leader training program focuses on action learning.	21	23	21
(2) Leader Training	Held in Singapore and Japan to develop the next generation of leaders, we conduct training programs in English.	28	28	27

Training for Development of Global Talent

FY2018 Results

Participants
48

Average time
88 hours per person

Leadership and Management Skills Enhancement Training, Career Development Training

FY2018 Results

Participants
839

Average time
15 hours per person

Human Resources Management

<Diversity and Inclusion>

Basic Policy

Sumitomo Chemical has set forth the promotion of diversity and inclusion as one of its seven material issues based on the Basic Principles for Promoting Sustainability. The Group is working to realize its own sustainable growth while helping realize a sustainable society through its business.

Sumitomo Chemical is working to provide all employees with motivating workplaces where they can fully demonstrate their skills and abilities in a variety of situations.

Management System

In 2010, Sumitomo Chemical established a labor-management committee to promote diversity and inclusion, work-life balance. To this end, the committee shares information and exchanges opinions in addition to checking on the progress of efforts undertaken by labor and by management.

■ Labor-Management Committee for Diversity and Inclusion, Work-Life Balance

Company	Labor Union
Head Office HR Department executives HR Department GM HR Department managers, etc.	**Headquarters** Executive committee chair General secretary Executive committee members
Worksites Worksite HR GMs	**Branch Offices** Branch office representatives

Human Resources Management

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Targets and Results / Examples of Initiatives

Promoting the Active Advancement of Women

We have focused on promoting the active advancement of women as a part of our diversity and inclusion promotion efforts. We are actively taking measures to create an environment where even more women can thrive. Sumitomo Chemical has outlined the following targets in line with the Act on Promotion of Women's Participation and Advancement in the Workplace and is implementing the specific initiatives detailed below.

Target 1 Women accounting for at least 10% of positions equivalent to manager or above

- Continue to provide training for workplace managers to promote understanding and raise awareness about promoting the active advancement of women
- Continue to send employees for outside training to sharpen their skills and expand their knowledge

Target 2 At least 50% of male employees taking cessation from work for childcare

- Put out press releases and otherwise raise awareness about programs that enable employees to flexibly respond to life events
- Work to establish an environment that enables flexible workstyles and improves productivity by promoting a better work-life balance
- Draft and implement measures to promote the use of these programs mainly through the Labor-Management Committee for Work-Life Balance

Achievements in Diversity and Inclusion (Sumitomo Chemical)

Name	Concept	FY2016	FY2017	FY2018	FY2019
Number of female managers*1	In order to promote the success of female employees, Sumitomo Chemical sets quantitative targets regarding the ratio of female managers and systematically promotes female employees to management positions.	80	85	96 ★	99
Percentage of female managers (%)*1		4.2	4.5	5.1 ★	5.2
Employment rate for people with disabilities (%)*2	Sumika Partners Co., Ltd., a special subsidiary, began operations in April 2018, and we are working to expand employment opportunities for persons with disabilities who are motivated to work, including four of our group companies receiving approval as special affiliated companies as of June 2019.	2.10	2.06	2.24 ★	2.41
Reemployment rate (%)*3	Sumitomo Chemical has established a retiree reemployment system that enables a variety of work styles while appropriately reflecting the motivation and abilities of each person.	92.1	92.1	92.6	TBD*4

*1 Number and percentage of employees holding positions equivalent to sectional manager or above; as of April 1 of each fiscal year
*2 As of June 1 of each fiscal year since the base date of calculation has been changed, the data has been retroactively revised in previous fiscal years
*3 As of March 31 of each fiscal year
*4 Calculation is slated at March 31, 2020

Human Resources Management

Promoting Work-Life Balance

We aim to raise productivity by ensuring each employee feels greater motivation and a deeper sense of fulfillment while maintaining a better work-life balance.

Formulation of the Action Plan to Reform Workstyles

In March 2018, Sumitomo Chemical formulated an action plan to reform workstyles with the aim of raising productivity. In this action plan, we established key performance indicators (KPIs) along with three main targets: ①correcting long working hours, ②encouraging employees to take paid annual leave, and ③promoting flexible workstyles. We then set out the following measures to achieve these targets.

Action Plan to Reform Workstyles

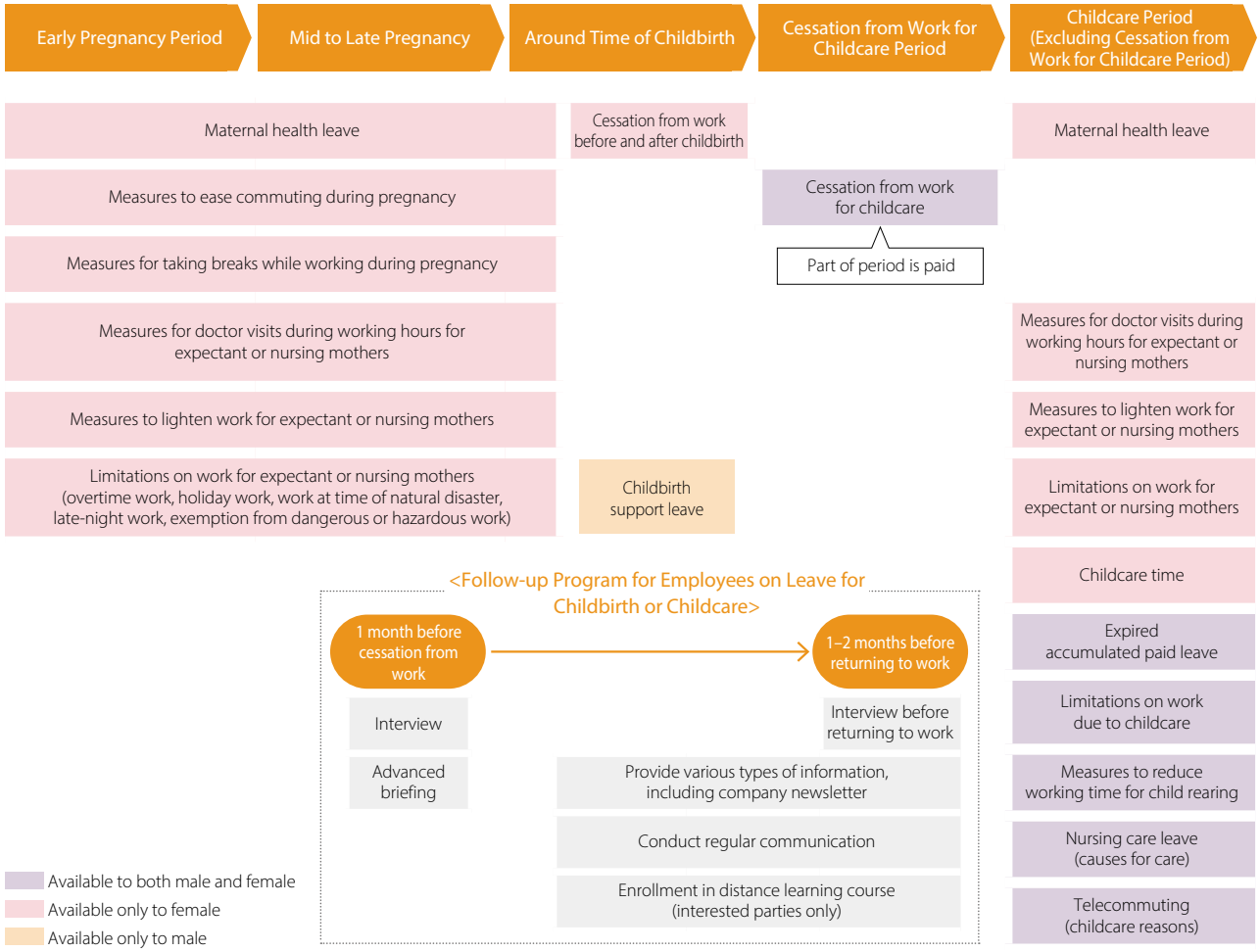
	KPI	Measures
① Correct Long Working Hours	Reduce the annual percentage of people working long hours (at least 35 hours/month worked after regular hours and on weekends and holidays) to below 10% by fiscal 2020. (Fiscal 2018 results: 15.8%)	**A. Employ the Internet of Things (IoT) to reform workstyles and revolutionize operations** Digitize plant-related operational processes and data, make office operations more efficient by actively using cloud sourcing and the latest technologies (including AI and sensors), etc. **B. Improve productivity by promoting a better work-life balance** Regularly convene the Labor-Management Committee for Work-Life Balance with labor and management representatives, take various measures to improve productivity in each workplace, hold lectures to promote better work-life balance, etc.
② Encourage Employees to Take Paid Annual Leave	Realize an average of 70% of paid leave taken annually by 2020. (Fiscal 2018 results: 71.8%)	**A. Create an annual leave chart that covers several fiscal years** Every year create an annual leave chart that covers several fiscal years to make it easier to plan far into the future and help encourage employees to take paid leave **B. Encourage employees to take paid leave** • Encourage employees to take paid leave during Golden Week and other similar periods • Encourage employees to create four-day weekends by adding days of paid leave to either side of weekends and promote taking time off in the September–November period • Encourage senior employees to take paid leave **C. Continue to systematically provide paid leave** Systematically provide around five paid-leave days every year (does not include statutory leave)
③ Promote Flexible Workstyles	Realize 50% of male employees taking cessation from work for childcare by 2020. (Fiscal 2018 results: 37.6%) Regarding the below questions in the employee awareness survey, achieve the target figures by the time of the next survey. • Realize at least 60% affirmative responses to the question: "Is the general consensus in your workplace that both men and women can easily take paid or unpaid leave for childcare or caregiving and use the reduced working-hour system?" • Realize at least 75% affirmative responses to the question: "Are the programs and working environment at the Company conducive to easily working after giving birth, raising children, or caregiving?"	**A. Issue PRs and raise awareness about programs** Continually issue PRs and raise awareness about various programs that enable employees to flexibly adjust for their individual needs, including those related to life events involving childcare and caregiving. In addition, encourage male employees with newborns to take cessation from work for childcare. **B. Foster an environment that allows the realization of flexible workstyles** By taking the measures outlined above for correcting long working hours, create an environment where it is easy to improve the productivity of employees and their workplaces and to realize flexible workstyles. **C. Encourage use of programs** Through the Labor-Management Committee for Work-Life Balance and other such meetings, identify the specific usage needs and improvement requests for the various programs. Use this information to help draft and implement measures to encourage wider use of programs.

Sumitomo Chemical is taking the following actions with regard to the target of correcting long working hours.

①	From April 2017, we reduced the upper limit on overtime work to 80 hours per month and 720 hours per year.
②	Regarding the occupational physician interviews for people working long hours mandated by the Industrial Safety and Health Act, we established and are enforcing our own guidelines, which are harsher than the law, requiring interviews for people who work 70 hours or more of overtime in one month or 150 hours or more in a three-month period
③	From March 2018, we established an even more appropriate work management system by displaying computer logon and logoff times when reporting work hours in addition to the existing system for reporting work hours.

Human Resources Management

Systems and Measures for Better Work-Life Balance and for Use at Time of Pregnancy, Childbirth and Childcare



Human Resources Management

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Results of Systems for Work-Life Balance (Sumitomo Chemical)

(No. of people)

System/Measure			FY2016	FY2017	FY2018
Childcare/Nursing Support	Cessation from work for childcare ★	Total	248	304	336
		Male	142	175	233
		Female	106	129	103
	Cessation from work for nursing care		3	3	1
	Nursing care leave		134	153	180
	Childbirth support leave		204	237	188
	Maternal health leave		55	48	52
	Expired accumulated paid leave*1		62	72	110
	Reduced working hours system		118	134	162
	Telecommuting*2		15	16	21
	Reemployment system*3		12	8	10
	In-house childcare facilities*4		161(108)	167(118)	171(123)
	Mutual aid association support money for childcare*5		195	211	242
Other	Suspension from work for special reasons for employees accompanying spouses going on overseas transfer*6		7	9	6
	Employee survey*7		Conducted in August	—	—

Note: Employee numbers do not include temporary employees, part-time staff, or dispatch employees.

*1 Only for childcare and nursing care
*2 Number certified at the end of each fiscal year
*3 Number registered as of the end of each fiscal year
*4 Number of users on April 1 each fiscal year. Includes users other than Sumitomo Chemical. The figures in parentheses are the number of Sumitomo Chemical users.
*5 Aggregate number of people at end of each fiscal year
*6 Number of applicants as of the end of each fiscal year
*7 Conducted once every three years

Kurumin Mark

In September 2015, Sumitomo Chemical was certified for the third time as a company that supports childcare and received the next-generation Kurumin certification mark. Under this system, business operators who successfully carry out action plans based on the Act on Advancement of Measures to Support Raising Next-Generation Children and meet all the certification criteria receive certification from the Minister of Health, Labour and Welfare.

This certification was in recognition of our third round of initiatives covering the period between June 2012 and March 2015. The first certification covered the period between April 2005 and May 2007, and the second one covered the period between June 2007 and May 2012. The Company was commended for its initiatives to help promote work-life balance, such as expanding in-house childcare facilities and encouraging employees to take various forms of leave. (We are currently applying for our fourth certification.)

Next-generation Kurumin certification mark

Looking Ahead

To promote diversity and inclusion across the Group, going forward we will set relevant KPIs, check progress made under the Corporate Business Plan, and actively work to achieve the goals laid out.

Human Resources Management

<Healthcare>

Basic Policy

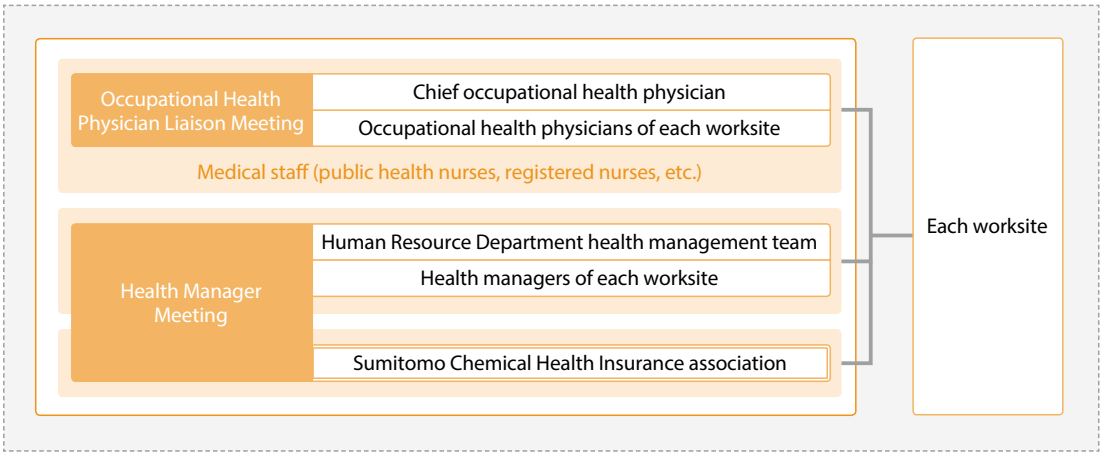
Sumitomo Chemical is implementing a range of health support measures to enable employees to live fuller lives and to actively maintain and promote their own physical and mental health with the assistance of the Company's chief occupational health physician, beginning with medical staff providing health-related guidance to employees.

Management System

At the annual occupational health physician liaison meeting, the chief occupational health physician and the occupational health physicians of each worksite hold discussions and decide on Company-wide measures and targets. In addition, the occupational health physicians, medical staff (public health nurses, registered nurses, etc.), and health managers of each worksite work together to implement measures to maintain and promote health in collaboration with the Company and its health insurance association.

Furthermore, at Health Manager Meetings, the measures taken at each worksite are shares and the results are assessed. The Health Management Promotion Committee shares financial information, including that related to medical fees and the healthcare business of the health insurance association.

■ Promotion System for Health Maintenance and Promotion Measures (Chart)



Targets and Results

After analyzing medical examination results and medical interview responses, we set quantifiable targets, such as improving the rate of positive findings, and take various measures to maintain and promote health.

In addition, Sumitomo Chemical was certified as a Health & Productivity Management Outstanding Organization (White 500) for the second year in a row. The Certified Health & Productivity Management Outstanding Organization Recognition Program was created in 2016 by the Ministry of the Economy, Trade and Industry. The program recognizes companies that practice outstanding health and productivity management based on the health promotion efforts of the Japan Health Council. The Company's various measures and systems related to health and productivity management received a positive evaluation.

2018
健康経営優良法人
Health and productivity
ホワイト500

Human Resources Management

Examples of Initiatives

Mental Health

We have been cooperating with medical staff to properly implement the stress checks required by law for companies. We are working to prevent mental health problems by encouraging employees to take care of themselves and encouraging superiors to look after their subordinates. Employees are able to receive counseling from the Company's medical staff.

We are involved in employees' mental healthcare. We conduct group analyses of stress checks and analyze trends at worksites and workplaces to provide feedback to workplaces and set themes for lectures and other meetings.

In addition, during the new employee training and the grade-based promotion training, we hold appropriate mental health-care training for participants eligible for training encouraging employees to take care of themselves and encouraging superiors to look after their subordinates.

Physical Health

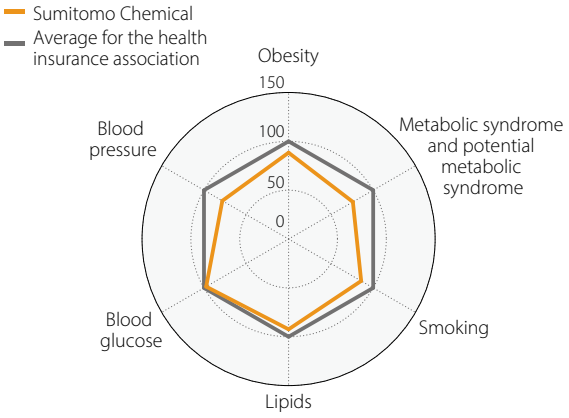
Sumitomo Chemical implements in cooperation with its health insurance associations specified health checkups and specified health guidance which are required of the health insurance associations to implement by law and periodical medical examination. We analyze these results and questionnaire responses to study trends in employee health. As a result, the Company has expanded the eligible age range for specified health guidance for lifestyle disease to include all ages as we work to prevent such diseases.

Furthermore, the Company and its health insurance association work together to raise employee awareness, such as by jointly holding lectures on lifestyle habits (including those related to eating, sleeping, and exercising) and on diseases (including cancer).

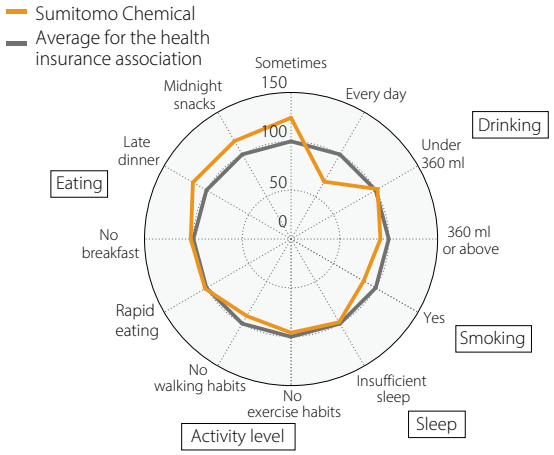
In addition, the Company dispatches its chief occupational health physician to provide overseas medical counseling and evaluate medical service environments to support employees working overseas and their accompanying families. In fiscal 2018, medical counseling and environmental evaluations were implemented twice in Saudi Arabia, twice in China, and once each in the United States, Taiwan, and Singapore.

■ Analysis of Health Checkup Results and Questionnaire Responses (FY2017)

Lifestyle Disease Risks



Lifestyle Habits



Looking Ahead

Sumitomo Chemical will continue creating and implementing various initiatives to maintain and promote the health of employees. In addition, we will assess the results of these initiatives, make improvements, and implement PDCA cycles in our continuing efforts to develop better measures and support employee health.

Occupational Safety and Health / Industrial Safety and Disaster Prevention

<Occupational Safety and Health>

Basic Stance

Reflecting the principle of "Making safety our first priority," Sumitomo Chemical has formulated five fundamental and personal safety principles that each employee is expected to follow as well as guidelines based on the core principle. All Sumitomo Chemical employees and all involved parties, including partner companies, are thus united in promoting safety activities with the goal of eliminating all accidents.

Sumitomo Chemical has acquired OSHMS* certification at its worksites. In addition, the Company implements PDCA cycles that support a host of measures on the path to realizing improvements based on risk assessments. These safety-related measures and their results are reviewed at the end of each fiscal year by the Responsible Care Committee, which is headed by the President. The reviews ensure a continuous connection between past and future fiscal years' cycles, thereby strengthening safety and health activities that prevent accidents.

* By introducing and deploying JISHA (Japan Industrial Safety and Health Association) OSHMS (Occupational Health and Safety Assessment Series) Standards equivalent to OHSAS 18001, the Company conducts sound corporate management and risk management from the perspective of occupational safety and health.

Core Principle: Making Safety Our First Priority

Raison D'être for the Core Principle

1. Line management is fundamental to Safety and Health.
2. Each person is responsible for Safety and Health.
3. Sumitomo Chemical is united with partner companies on Safety and Health.

Five Fundamental and Personal Safety Principles that Each Employee is Expected to Follow.

- I will give safety and health the top priority in every aspect of business.
- I will identify and resolve safety and health issues at the source.
- I will comply with rules and instructions.
- I will act with safety in mind 24 hours a day, not just during working hours.
- I will cooperate with all involved parties, including partner companies, to ensure safety and health.

Management System

The president serves as the chief officer of the Environment and Safety Group of the Responsible Care Department, and the executive officer in charge of Responsible Care serves as the officer. The group handles matters related to the Company's overall safety and health efforts and supports Group companies' safety and health activities. To assess the safety and health management status and to consider measures for improvement, the safety and health departments of each worksite and Group company regularly meet and exchange information. In these and other ways, relevant departments work together to steadily enhance the level of safety and health activities.

Note: The Organization of Responsible Care Activities is presented on page 56.

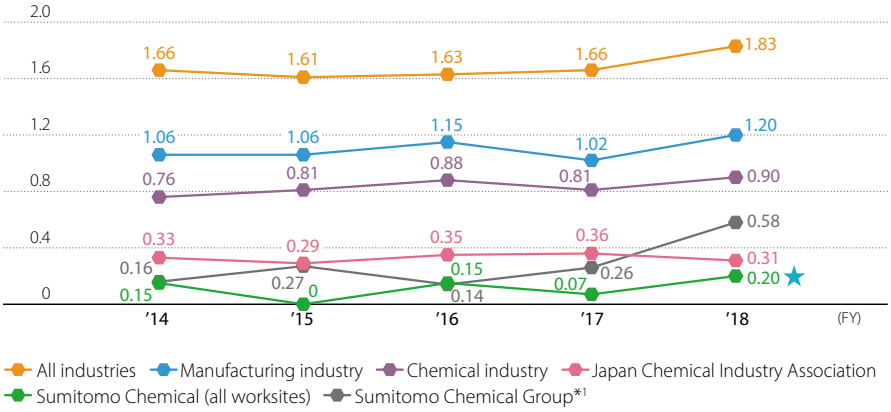
Occupational Safety and Health /Industrial Safety and Disaster Prevention

★: Assured by an independent assurance provider

Goals and Results

The Sumitomo Chemical Group*1 targets a frequency rate of lost-workday injuries of under 0.1, but its rate was 0.58 in fiscal 2018, up 0.32 year on year, failing to meet the target. Moreover, while the Group has set a goal of zero severe accidents,*2 it recorded two, the same number as the previous fiscal year, failing to meet the target. In fiscal 2018, the number of lost-workday injuries was 35, an increase of 18 year on year.

Frequency Rate of Lost-workday Injuries



Lost-workday Injuries (Sumitomo Chemical Group*1)

	FY2014	FY2015	FY2016	FY2017	FY2018
Number of lost-workday injuries	10	17	9	17	35

*1 The Sumitomo Chemical Group as defined for occupational safety and health, industrial safety, and disaster prevention: Sumitomo Chemical (including contractors) and consolidated Group companies in Japan and overseas.

*2 Severe accidents are defined as those that result in a fatality or those that result in severe lost-workday injuries, including blindness and loss of a limb.

Occupational Safety and Health /Industrial Safety and Disaster Prevention

Examples of Initiatives

Sumitomo Chemical thoroughly investigates the causes of each accident and works to prevent accidents by taking such measures as ensuring strict adherence to safety rules, providing hazard prediction training, also known as Kiken Yochi Training (KYT), and sharing accident information. In addition, we are working to raise safety awareness among construction partner companies that enter our Works by distributing pocket-size booklets and entrance certificates that feature the ground rules and core principles of safety as we promote our initiative of "Making safety our first priority."

Ensuring Thorough Compliance with the Sumitomo Chemical Group's Basic Safety Rules (Ground Rules)

In light of trends in the causes of accidents, the Group has established the following ground rules and is working to ingrain safe behavior.

1. Think Before You Act!
2. Help each other to be more aware of unsafe actions
3. Do not place hands in or around areas of working machinery/equipment

Improving Hazard Prediction Abilities

We are working to improve employees' hazard prevention ability—their ability to perceive and avoid danger—through, for example, behavior-based safety training and workplace discussions using illustrations.

Sharing and Using Accident Data

The Group shares information about all accidents mainly for use in safety education and comprehensive on-site investigations. When an accident occurs, we conduct a thorough examination of the causes and organize studies on how to prevent recurrences through on-site inspections with the top management of the affected workplace and safety managers.

Awards for Safety

Safety awards are given to workplaces that achieve zero lost-workday injuries. The President's Award for workplace safety is presented to workplaces with both a solid safety track record and good practices for safety and health, which could be an example to other workplaces. The President's Award was given to eight workplaces in fiscal 2018.

Safety Promotion through In-house Magazine, Slogan and Poster

In our in-house magazine, we have introduced examples of accidents that tend to happen at work and their preventive measures in a series of articles on enhancing safety since fiscal 2013. We also collect ideas each year for a slogan and a poster for safety and health, and make a poster using the best ideas and display it at each workplace to raise safety awareness.

Looking Ahead

Although activities to enhance a culture of safety have taken root, we currently have not entirely eliminated severe accidents, including those resulting in fatalities. To bring these accidents down to zero, we measure the level of the safety culture and safety infrastructure of each workplace and constantly strive to make improvements. In addition, we promote safety and health activities based on international standards (occupational safety management systems, machinery safety, etc.) and will continue adapting as we work toward realizing a society where people can choose from a diverse range of flexible working styles.

Occupational Safety and Health /Industrial Safety and Disaster Prevention

<Industrial Safety and Disaster Prevention>

Basic Stance

The foremost mission of industrial safety and disaster prevention management is to prevent unforeseen industrial accidents, including fires, explosions, and the leakage of hazardous substances. At the same time, every effort must be made to minimize damage in the event of a natural disaster such as a major earthquake. Through these means, the Company is committed to securing the safety and peace of mind of employees and local communities. With this in mind, Sumitomo Chemical takes voluntary steps to put in place a safety management structure, undertakes stringent process risk assessments of the entire product life cycle (development, manufacture, distribution, use, disposal), and takes appropriate safety measures based on its evaluation of risks.

Management System

The president serves as the chief officer of the Environment and Safety Group of the Responsible Care Department, and the executive officer in charge of Responsible Care serves as the officer. The group handles matters related to the Company's overall industrial safety and disaster prevention efforts and supports Group companies' industrial safety and disaster prevention activities. To assess the industrial safety management status and to consider measures for improvement, the industrial safety and disaster prevention departments of each worksite and Group company regularly meet and exchange information. In these and other ways, relevant departments work together to steadily enhance the level of industrial safety and disaster prevention activities.

Note: The organization of Responsible Care activities is detailed on page 56.

Goals and Results

The Sumitomo Chemical Group*1 achieved the target of "no severe industrial accidents"*2 in fiscal 2018. The Sumitomo Chemical Group has not had a severe industrial accident in the four consecutive years since fiscal 2015. We see this as evidence of the success of our straightforward daily activities on the frontlines as well as the construction and steady enhancement of our industrial safety management system.

However, there were four industrial accidents, which are minor accidents whose scale does not reach that of a severe industrial accident, in fiscal 2018. We will work to enhance industrial safety management and quickly share the causes of the industrial accidents and the lessons learned across the entire Sumitomo Chemical Group.

*1 The Sumitomo Chemical Group as defined for occupational safety and health, industrial safety, and disaster prevention: Sumitomo Chemical (including contractors) and consolidated Group companies in Japan and overseas.
*2 "Severe industrial accidents" refers to any of the following workplace incidents:
- Accidents that cause injuries to local residents requiring outpatient/hospital treatment
- Accidents that result in lost-workday injuries to workers on the site
- Accidents that result in equipment and facility damage exceeding ¥10 million

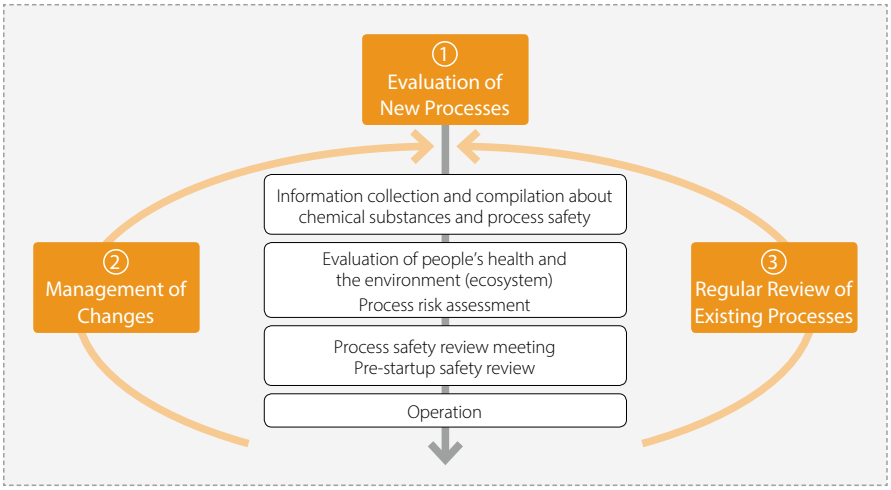
Occupational Safety and Health /Industrial Safety and Disaster Prevention

Examples of Initiatives

Process Safety Management Initiatives

Based on the Corporate Policy on Safety, the Environment and Product Quality, Sumitomo Chemical performs process safety risk assessments at each stage from new chemical process R&D through the commercialization process to plant design, construction, operation, maintenance, and even demolition. The items and procedures essential to risk assessment are specifically outlined in the Development and Commercialization Regulations, the Chemical Safety Management Regulations, the Safety Management Guidelines, and other similar documents that provide the standards for the Company. In addition, we introduced this system to major consolidated subsidiaries as part of efforts to enhance process safety management across the entire Group.

■ Process Risk Management (Three Routes)



① Evaluation of New Processes

The Process Safety Review Meeting (levels 1 to 5) convenes at every step, from R&D through to industrial-scale production. These meetings are held to review process safety assessment results as well as to determine whether safety countermeasures are appropriate. This mechanism ensures that processes do not proceed to the next step unless adequate safety has been confirmed.

② Management of Changes

When certain changes are made to, for example, improve plant facilities or modify operating conditions, the Company conducts all necessary safety assessments before such changes are made to ensure process safety levels are maintained after each change has been completed.

③ Regular Review of Existing Processes

Even when there is no change in the process, Sumitomo Chemical conducts regular reviews to catch up with the latest information on industrial safety technologies and to check whether there will be a significant impact from the long-term use of a plant.

Preparation for Large-Scale Natural Disasters

Sumitomo Chemical drew up a basic plan on earthquake countermeasures in 2004, taking the initiative to improve the earthquake resistance features of equipment that was especially susceptible to the risk of damage. Furthermore, in accordance with recent directives by government authorities to improve the seismic adequacy of existing facilities, we made a plan to obtain required earthquake-resistant features of critical high-pressure gas equipment and are carrying out reinforcements and reconstruction in line with the plan. Before carrying out this work, we took measures to reduce risk and ensure safety, such as reducing the volume of gas held in equipment in order to decrease its weight and meet the earthquake resistance criteria.

In addition, as natural disasters continue to grow more extreme, including the typhoons and torrential rains seen in recent years, we continually review the current status of our safety measures to ensure they are adequate and take measures aimed at securing facilities and personnel as necessary. Furthermore, we confirmed that even in the event of flooding inside a Sumitomo Chemical plant due to a typhoon or torrential rain, the risk of the following is low: a loss of power to the plant's cooling facilities or water-reactive substances inside the warehouse coming into contact with water causing large-scale fires and explosions that could cause trouble for neighboring residents.

Occupational Safety and Health /Industrial Safety and Disaster Prevention

Industrial Safety and Disaster Prevention Education

Sumitomo Chemical has a variety of industrial safety educational programs that reflect the operational roles of employees throughout the Company. The programs are aimed at bolstering the ability of employees to acquire knowledge and skills in order to ensure process safety. In addition, we provide safety education to Group companies in Japan suited to each company's needs.

Main Safety Education Enrollment Results

Name	Type	Purpose	Boundary	FY2018 participants
In-house Safety Management System Education	e-learning	Fostering a deep understanding of the basic rules of safety management (the "Safety Management Guidelines")	Sumitomo Chemical (all worksites)	805
Disaster Prevention Theory	Group training	Promoting the acquisition of basic knowledge regarding safety and disaster prevention for fires, explosions, reaction hazards, static electricity, etc.	Sumitomo Chemical (Works, research laboratories)	81
			Group companies in Japan	9
Fire and Explosion Training	Group training and self-study	Promoting the acquisition of knowledge to prevent accidents and perceive hidden dangers in the workplace through hands-on training related to fires and explosions	Sumitomo Chemical (Works, research laboratories)	197
			Group companies in Japan	52
Company-wide Safety Education	Group training	Training that covers the latest topics each fiscal year (The training in fiscal 2018 involved points to be aware of when identifying process hazard scenarios.)	Sumitomo Chemical (Works, research laboratories)	519
			Group companies and partner companies within Sumitomo Chemical (Works, research laboratories)	67

Industrial Safety Action Plan

Industry organizations came together with the Japan Petrochemical Industry Association and drew up an industrial safety action plan in July 2013 in a bid to step up efforts aimed at promoting industrial safety. Here we introduce the Company's initiatives based on the action plan.

(1) Commitment by Top Management to Industrial Safety

- Sumitomo Chemical has identified efforts to ensure full and strict compliance and maintain safe and stable operations as one of the Group's priority management issues under its Corporate Business Plan.
- The president issues a safety week message to all employees and Group companies in Japan and overseas to coincide with National Safety Week, which begins on July 1 each year.
- We have held the President's Awards for workplace safety on a continuous basis since fiscal 2012.

(2) Setting Industrial Safety Targets

- Each year, Sumitomo Chemical sets targets for a variety of key parameters, including the elimination of all accidents resulting in lost workdays as well as all severe industrial accidents. The Company engages in a broad spectrum of activities aimed at achieving these targets.

(3) Drawing Up an Action Plan to Secure Industrial Safety

- Sumitomo Chemical pursues activities aimed at thoroughly identifying industrial safety risks that encompass regular and irregular operations.

(4) Checking and Evaluating Progress toward Achieving Targets and Implementing Measures

- The Responsible Care Committee reviews progress toward the achievement of targets and the implementation of measures. Findings under this review are reflected in the plan for the next fiscal year.

(5) Initiatives Aimed at Promoting Voluntary Safety Activities

- The Sumitomo Chemical Group established the ground rules related to safety and strives to foster a culture of safety.
- Sumitomo Chemical designates one day each month as a "safety day" in an effort to continuously focus the attention of the entire Group on the importance of industrial safety.
- Academic experts conduct seminars and undertake an evaluation of safety assurance capabilities by the Process Safety Competency Center of Japan Society for Safety Engineering.

Occupational Safety and Health /Industrial Safety and Disaster Prevention

Initiatives for Ensuring Safety in Logistics Operations

The Sumitomo Chemical Logistics Partnership Council was formed by Sumitomo Chemical and the logistics subcontractors (82 companies at 113 locations) for Sumitomo Chemical Group companies in Japan. The Council maintains committees for Works in each area as well as for logistical centers (transport and storage) and marine transport-related operations nationwide. In line with its core principle of "Making Logistics Safety the First Priority," the Council is expanding the Logistics Department's Responsible Care activities. In particular, the Council has taken measures focused on eliminating accidents involving forklifts and accidents where body parts become caught or entangled in machinery. However, in fiscal 2018, there was one lost-workday injury involving a forklift. Going forward, we will continue drafting and implementing various measures to improve the situation.

■ Lost-workday Injuries in Logistics (in Japan)

	FY2014	FY2015	FY2016	FY2017	FY2018
Number of cases	1	3	0	0	1

Note: Lost-workday accidents caused by logistics subcontractors on the premises of Sumitomo Chemical workplaces and lost-workday accidents caused by major logistics subcontractors outside the premises of Sumitomo Chemical workplaces.

Looking Ahead

We will further strengthen our safety infrastructure by carefully managing our facilities and construction projects, providing advanced training for safety-related personnel, and introducing sophisticated risk assessment methods and cutting-edge technologies, including IoT, to bolster our industrial safety management technologies.

■ Illustration of How We Ensure Safety through Safety Infrastructure and Safety Culture

Product Stewardship / Product Safety / Quality Assurance

Basic Stance

Product Stewardship at Sumitomo Chemical

Under its Corporate Policy on Safety, the Environment and Product Quality, Sumitomo Chemical promotes product stewardship*1 and works to provide products and services that satisfy customers and can be used with peace of mind.

To achieve the 2020 goal*2 proposed at the World Summit on Sustainable Development (WSSD) in 2002, it is now time for chemical management to be risk-based in regard to laws and regulations as well as company efforts to promote product stewardship on a global basis.

To achieve the 2020 goal, Sumitomo Chemical promotes voluntary initiatives to enhance product stewardship, including the Global Product Strategy (GPS)*3/Japan Initiative of Product Stewardship (JIPS)*3 put forward by chemical industry associations, including the International Council of Chemical Associations (ICCA) and the Japan Chemical Industry Association. We actively participate in capacity-building activities, conduct risk assessments of our products, and perform risk-based management.

*1 Product stewardship: The assessment of risks and protecting people's health and the environment from those risks throughout the product life cycle, which encompasses the entire supply chain from the development of chemical products to manufacture as well as sale, use/consumption, and disposal.
*2 2020 goal: Ensure that chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment.
*3 GPS/JIPS: Initiatives that call on companies to conduct risk assessments of their products and to engage in appropriate chemical management based on risk in order to minimize risks throughout the supply chain. Under GPS/JIPS, toxicological information on chemical products is disclosed to the general public, including customers.

Ensuring Thorough Compliance

Sumitomo Chemical Group conscientiously adheres to various laws and regulations related to the manufacture, import, export, and sale of goods. We are working to ensure thorough compliance throughout our entire globally expanding group of companies.

Quality Assurance

The Group maintains its commitment to further improving product quality and is continually enhancing its global quality assurance system, which is tailored to each product, because the Group values the trust it has earned from customers and society and aims to further improve customer satisfaction.

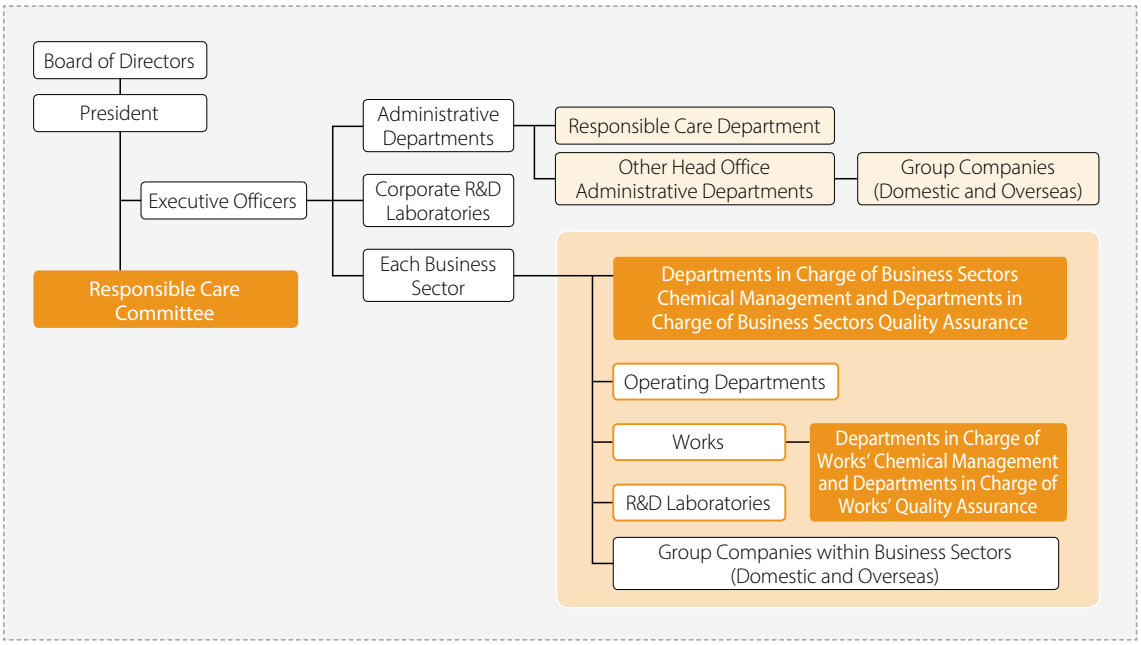
Product Stewardship / Product Safety / Quality Assurance

Management System

As the highest body for deliberating and approving Sumitomo Chemical's RC activities, the Responsible Care Committee is chaired by the president and comprises executive officers supervising the administrative departments and the four business sectors of the Company, and the General Manager of each Works. The Committee puts in place annual policies on RC activities, including chemical management and quality assurance activities; medium-term plans; and specific measures as they relate to Responsible Care. The Committee also analyzes and assesses the results of Responsible Care activities.

In addition, the Responsible Care Department oversees the Company's chemical management and quality assurance management as well as supports each Group company's chemical management and quality assurance management. Each department in charge of chemical management and quality assurance for Works and other departments promote appropriate chemical management and quality assurance management for their respective Works and department.

Organization of Chemical Management and Quality Assurance Activities



Product Stewardship / Product Safety / Quality Assurance

Goals and Results

For information related to product stewardship, product safety, and quality assurance, please refer to the section entitled, "Social Activity Goals and Results."

P.111 Product Stewardship / Product Safety / Quality Assurance

Examples of Initiatives

Risk Assessment and Management throughout the Entire Product Life Cycle

With regard to the chemicals (products) that it uses and sells, Sumitomo Chemical conducts risk assessments that span the entire product life cycle and all that could be affected, including internal operators, neighboring residents, the surrounding environment, customers, and consumers. The Company supports the Ministry of the Environment's Eco-First program, having pledged to systematically conduct appropriate risk assessments for its products manufactured or sold in annual amounts of one ton or more by fiscal 2020 in line with the voluntary initiatives (GPS/JIPS) adopted by chemical industry associations. The results of these assessments are compiled into a safety summary and made publicly available online, including on the International Council of Chemical Associations (ICCA)'s portal website http://icca.cefic.org/. In fiscal 2018, three new summaries were released, bringing the total publicly available safety summaries to date up to 44 (covering 43 substances).

In conducting chemical risk assessments, it is necessary to collect information regarding the hazards associated with each product and the levels of human and environmental exposure when products are handled. Based on the information needed for these risk assessments, we work to ensure that customers and employees handle chemical substances safely. To this end, we have created a collaborative framework centering on the Responsible Care Department and encompassing the frontlines of production and our internal research laboratories, which possess specialized technologies in risk assessment and safety engineering. To estimate exposure levels, the Company draws on projection models and expert insights in Japan and overseas and has developed its own simulation program. We also use the latest technology to efficiently conduct highly precise risk assessments. In line with our internal rules, during the development of new products, we collect data regarding risks and hazards for all handled substances before entering the production stage and survey and respond to all relevant laws and regulations.

Product Stewardship / Product Safety / Quality Assurance

Risk Management for Product Safety

As for risk assessments of product safety, it is necessary to assess the risks of chemical substances in products as well as the risks associated with product applications and uses. Taking into consideration not only their use by our direct customers but also the use and disposal of such products by their end-users, we conduct risk assessments of applications and uses using failure mode and effects analysis (FMEA)*1 and other methods in addition to chemical substance risk assessments. Sumitomo Chemical conducts rigorous risk assessments of new products and reassesses items already on the market. In fiscal 2018, we performed 61 risk assessments, including 22 reassessments. Going forward, we will continue to conduct rigorous risk assessments of new products and steadily proceed with reassessments of products already on the market. By fiscal 2020, we plan to complete risk reassessments of all our products. In addition, we are supporting Group companies in conducting similar product risk assessments and countermeasures.

*1 FMEA: A systematic method of analysis for detecting potential malfunctions and defects with the objective of their prevention

Providing Products and Services of Stable Quality

Sumitomo Chemical is proud to provide its customers with products and services from a variety of fields centered on chemicals. In order to continue to supply our customers with products and services of stable quality, we have established quality assurance systems based on quality management systems and manufacturing and quality management guidelines, such as ISO 9001*2 and GMP,*3 appropriate for each product and service. In addition to maintaining thorough day-to-day product quality control, we are committed to further improving product quality.

Unfortunately, in fiscal 2018, there were four major product quality problems recorded by Group companies. Working to determine the causes of each of these problems, we are promoting strict preventive measures.

In order to continue supplying products and services of stable quality worldwide while addressing growing supply chain diversification accompanying its business expansion and the increasingly sophisticated needs of customers, the Group is enhancing its global quality assurance system through measures that include strengthening management of overseas suppliers and contractors. We are also improving quality assurance (including quality compliance) at all Group companies by developing countermeasures to quality problems based on relevant information about incidents occurring within the Group and sharing information on the state of product quality and safety at Group companies.

*2 ISO 9001: The international standards on quality management systems issued by the International Organization for Standardization (ISO).
*3 Good Manufacturing Practice (GMP): Guidelines relating to manufacturing and quality management of pharmaceuticals.

The Information Sharing System and Ensuring thorough Compliance

The governments of Europe, the Americas, China, and the Asia Pacific region hold considerable sway over trends in global laws and regulations. To ensure thorough compliance, we post product stewardship specialists at our regional headquarters in these areas and are constructing a system to swiftly collect information related to regulatory trends. As for China, South Korea, Taiwan, Southeast Asia, and India, all of which have recently seen rapid and major changes in the legislative environment, together with Group companies we have been responding appropriately to the chemical regulations of each country.

As a response to the REACH regulation in Europe, which is a world leader in terms of laws and regulations, we are moving forward with appropriate legal registration, managing our supply chain, and properly transferring data. In addition, our local Group company Sumitomo Chemical Europe is drawing up letters about its registration status in response to its customers' wishes as well as a declaration of conformity, which states the status of compliance and certificate acquisition with regard to various regulations.

In fiscal 2018, there were no reports of violations of regulations for Sumitomo Chemical products and services at any stage of their life cycles.

Product Stewardship / Product Safety / Quality Assurance

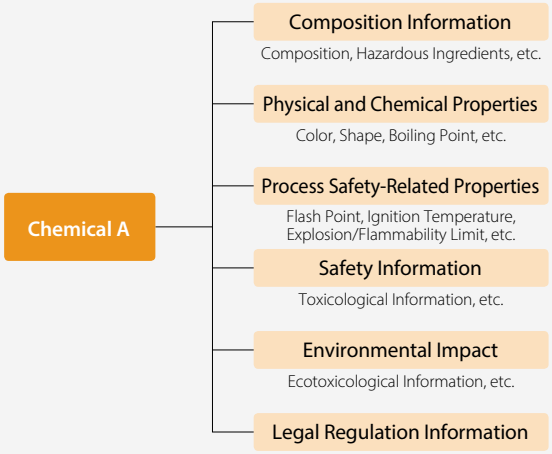
Effective Use of SuCCESS

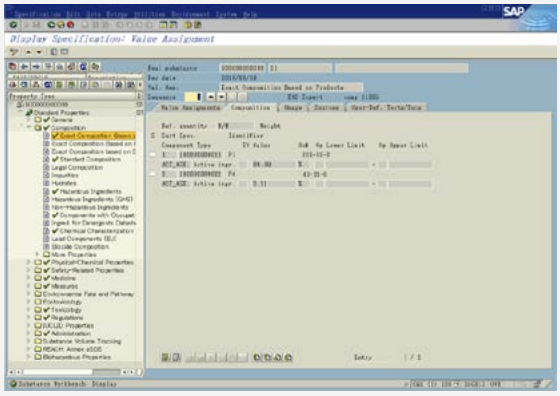
In order to appropriately manage and effectively use information on chemicals handled by the Company, such as their composition, toxicological information (risks and hazards), and regulatory requirements, Sumitomo Chemical has developed the comprehensive chemical management system (SuCCESS).*1 This system is used in order to respond to inquiries from customers concerning substances contained in our products and precisely comply with laws and regulations in Japan and around the world. We also use this system to create SDS*2 in around 40 languages to comply with GHS*3 and accurately and efficiently communicate hazard information throughout the supply chain. This system is also being proactively rolled out to Group companies. We had installed the system at 11 Group companies in Japan and overseas as of fiscal 2018. We began using a substance volume tracking (SVT) system to report the manufacture / import volume (to government) under the chemical substances control law.

*1 Sumitomo Chemical Comprehensive Environmental, Health & Safety Management System (SuCCESS)
*2 Safety Data Sheets (SDS): SDSs include information on the safe handling of chemical products (properties, handling methods, safety measures, etc.) and should be created in compliance with the Japanese Industrial Standards (JIS) and the standards set by the International Organization for Standardization (ISO).
*3 Globally Harmonized System of Classification and Labeling of Chemicals (GHS): In 2003, the United Nations established these global rules for how to convey information about the classification and degree of hazards for chemical substances.

SuCCESS comprehensive chemical management system

Management of chemical composition, toxicological, regulatory information based on tree-shaped structure





Providing Toxicological Information

To ensure its products are handled safely, Sumitomo Chemical uses SDSs and labels to provide customers with toxicological and regulatory information about the chemical substances they contain and the hazard data consolidated in SuCCESS. Furthermore, especially regarding products requiring warnings about their handling, we create yellow cards that are a simplified version of their SDSs. This provides logistics operators with the information they need to ensure they can respond appropriately to an emergency situation during transportation.

Laboratory Animal Welfare

In the process of developing useful chemical substances, a large variety of safety assessments are required. With this in mind, Sumitomo Chemical is actively developing new assessment methods, including structure-activity relationship approaches, and minimizing the use of laboratory animals for safety assessments. However, assessments of impact on humans, animals, and the environment cannot be completed without conducting experiments using laboratory animals. Sumitomo Chemical therefore advocates the humane treatment of laboratory animals and applies the 3Rs*4 of replacement, reduction, and refinement to conduct animal studies appropriately with due consideration for animal welfare.

*4 The 3Rs: From the Law for the Humane Treatment and Management of Animals
Replacement: To the greatest extent possible, replace methods that involve animals with those that do not.
Reduction: To the greatest extent possible, reduce the number of animals used.
Refinement: To the greatest extent possible, refine methods to minimize the suffering of animals.

Product Stewardship / Product Safety / Quality Assurance

Latest Emergency Issue

Microplastics and marine plastic pollution have become a global problem in recent years. Recognizing the importance of this issue, Sumitomo Chemical quickly agreed to the measures of the Japan Plastics Industry Federation and bolstered its internal education system. We also participate in the International Council of Chemical Associations (ICCA) and Japan Chemical Industry Association's task force. We are working to keep abreast of the latest issues and are also proposing our comments to the aforementioned organizations.

Looking Ahead

Sumitomo Chemical promotes appropriate risk-based chemical management and is working to achieve its goal of completing product safety risk assessments of all Group products and confirming the effectiveness of related strategies and measures by fiscal 2020.

In response to strong social demand for the proper management of chemicals, the pace of establishment and revision of laws and regulations relating to chemical management is expected to pick up in even more countries and regions in the near future. Closely collaborating with Group companies in Japan and overseas, Sumitomo Chemical consistently undertakes thorough compliance initiatives that involve carefully studying information on the regulatory trends as well as enhancing the functions of its comprehensive chemical management system (SuCCESS).

To improve customer satisfaction, the entire Group will continue to work to sustain its product and service quality improvements and to achieve an optimal product quality assurance system amid changing business conditions.

Responsibility to Our Customers

Basic Stance

Throughout the Group, Sumitomo Chemical is working to supply high-quality products and services that satisfy customers' needs and ensure safety in their use, and sales managers and customer consultation offices provide support tailored to products and specific details.

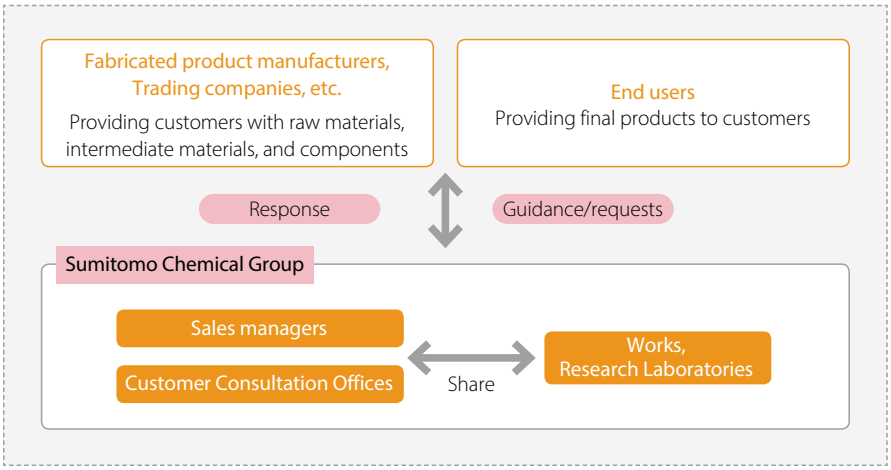
Business & Products

https://www.sumitomo-chem.co.jp/english/products/

Management Framework

Sumitomo Chemical works to accurately and rapidly reflect customers' requests in product development and improvement by sharing this information among Works, Research Laboratories, and sales personnel. In addition, data on customer inquiries and requests for improvements in product quality are stored on an internal database to prevent similar issues from occurring.

Customer Communication System



Responsibility to Our Customers

Examples of Initiatives

Initiative for Access to Healthcare

Sumitomo Chemical started its pharmaceuticals business as the first Japanese company to manufacture synthetic pharmaceuticals based on its advanced organic synthesis technology. Our Group company Sumitomo Dainippon Pharma Co., Ltd. considers the below listed items to be part of its duty to its customers in the pharmaceutical business.

Conduct Responsible Advertising and Marketing
(Refer to section 11. Promotional Activities of Sumitomo Dainippon Pharma's Compliance Standard for more details.)

https://www.ds-pharma.com/profile/compliance/pdf/20190401_ecogl1.pdf

Initiative for Access to Healthcare

https://www.ds-pharma.com/csr/customer/improved_access.html

Transparency in Partnerships with Patients and Medical Institutions

https://www.ds-pharma.com/csr/fair/app_relationship.html

Looking Ahead

Collecting information through close consultation with internal and external partners, and maintaining a proactive attitude when listening to our customers' opinions, Sumitomo Chemical remains committed to continuously providing products that satisfy the needs of its customers. Moreover, the Company is expanding information disclosure in order to provide our customers with vital information in the most appropriate manner.

Local Communities

Basic Stance

Based on the concept of contributing to establishment of sustainable society through achieving sustainable growth of business, the Sumitomo Chemical Group is committed to social contribution activities undertaken from the perspectives of solving global problems and coexistence with local communities.

Sumitomo Chemical, its worksite in Japan and overseas, and Group companies engage in a variety of activities to meet the needs of local communities in order to build good relations with them.

Sumitomo Chemical's Social Contribution Activities

	Community Contribution	Global Contribution
Securing Safety and Health, and Protecting the Environment	Work and research laboratory tours RC dialogues and distribution of local newsletters	Malaria prevention campaign, Donating Olyset™ Nets Investment in the World Bank's BioCarbon Fund TABLE FOR TWO program Matching Gift program (support for tree-planting activities) Cooperation with U.N. activities
Raising Children who will Lead the Next Generation	Establishment of in-house childcare facilities Launch of Young Inventors' Club, Science Workshops, etc. Sponsorship of community sports events for children Cooperation on civic and university courses Acceptance of student interns Matching Gift program (educational and developmental support for children)	Educational support in Africa University scholarship programs
Assisting in Natural Disaster Relief	Relief activities after typhoons, earthquakes, and other disasters, Offering facilities for Public use after major disasters	Relief donations for victims of hurricanes, earthquakes, etc.

Management System

Based on the above chart laying out our social contribution activities, we are promoting various activities at the Sumitomo Chemical Group, Sumitomo Chemical's Head Office, each worksite, and each Group company. To further encourage such activities across the Group, once per year, we hold Global CSR Meetings for CSR managers from the regional headquarters established in each of the world's four regions, Regional CSR Meetings in each region, and CSR Manager Meetings attended by CSR managers from each worksite. These meetings enable attendees to share information about their activities and exchange opinions. In addition, Group companies in Japan share information and exchange opinions through Domestic Group Company President Meetings and Domestic Group Company Liaison Meetings held by each functional department.

We are cooperating with the labor union in planning and conducting certain social contribution activities.

Local Communities

Goals and Results

The results of the main social contribution activities undertaken by Sumitomo Chemical and its Group companies are as follows.

Volunteers for Science Workshops

(No. of people)

Activity type	FY2018
Science classes held at schools	29
Exhibits at events	173

Support for Education in Africa (as of August 31, 2019)

Country and number of recipients	Type of support
Democratic Republic of the Congo (Recipients: 228)	• Built classrooms for elementary schools • Supplied math and science teaching materials and provided training to teachers • Raised awareness of malaria prevention techniques and provided preventive healthcare training
Senegal (Recipients: 183)	• Built classrooms for high schools • Built restrooms • Built science laboratories • Enriched science classes for female students
Nigeria (Recipients: 4,750)	• Supplied computer equipment for Information and Communications Technology (ICT) education • Installed solar power equipment

Volunteers for the OISCA Coastal Woodland Rejuvenation Project

(No. of people)

	FY2016	FY2017	FY2018
Number of volunteers for the OISCA coastal woodland rejuvenation project	22	20	20

Local Communities

Examples of Initiatives

Assuring Safety, the Environment, and Health

Communication with Society

Sumitomo Chemical has put in place Group-wide policies regarding communication with society and is endeavoring to promote its activities in these fields. Among a host of initiatives, the Company is focusing on enhancing its information disclosure while engaging in interactive dialogue. Each worksite formulates annual activity plans and conducts specific activities based on the aforementioned Group-wide policies. Taking into consideration feedback and requests received, the Company also strives to improve the aesthetic appeal of worksites.

Holding Interactive Dialogue with Local Communities

To maintain ties with local communities, Sumitomo Chemical regularly sets up opportunities to interact with various local stakeholders, including municipalities and school officials. These opportunities range from plant tours and dialogue meetings to opinion exchanges and other more casual events.

In local dialogue meetings, we strive to deepen mutual understanding by moving conversations ahead with explanations to neighboring residents about the environmental and safety measures we have in place. In addition, we promote smooth communication with communities by holding plant tours and briefings for each worksite.

Moreover, each worksite engages in a variety of risk communication and dialogue activities for various purposes. These include risk communication model projects carried out jointly with local governments, environment and safety support projects for domestic and overseas governments and businesses, regular meetings with local residents, and dialogues with the community based on cooperation with the chemical industry. At the Company's head office, Sumitomo Chemical participates in a range of committee activities conducted by the national government and industrial associations as well as in industry-government-academia seminars and lectures to disseminate relevant information and exchange opinions in a timely manner. The overall aim is to help people deepen their understanding of Sumitomo Chemical and to secure the society's trust in us.

Initiatives to Ensure Safety at All Group Workplaces

The Sumitomo Chemical Group aims to achieve zero labor accidents across all workplaces through safety measures. Specifically, we are striving to further improve safety activities through education and training for employees in accordance with the Group's common Safety Ground Rules, and through thorough safety management to minimize damage in the event of a largescale earthquake. Through dialogue with local communities, we explain our efforts to ensure safety to our neighbors, thereby deepening mutual understanding.

■ Status of Dialogues with Local Communities

FY2018 Results	
Number of dialogues held	Number of participants
42	**701**

Page 76 of *Annual Report 2019*

https://www.sumitomo-chem.co.jp/english/ir/library/annual_report/

Local Communities

Information Disclosure Rooted in Local Communities

At Sumitomo Chemical, each worksite publishes a *Report on the Environment and Safety* every year to report on its local activities in detail. The reports complement the Company's own Sustainability Data Book (this publication). In addition, the Ehime, Osaka, and Oita worksites each publish local newsletters for the proactive distribution of area-specific information. These are often delivered to residents as newspaper inserts.

Report on the Environment and Safety (at all worksites)

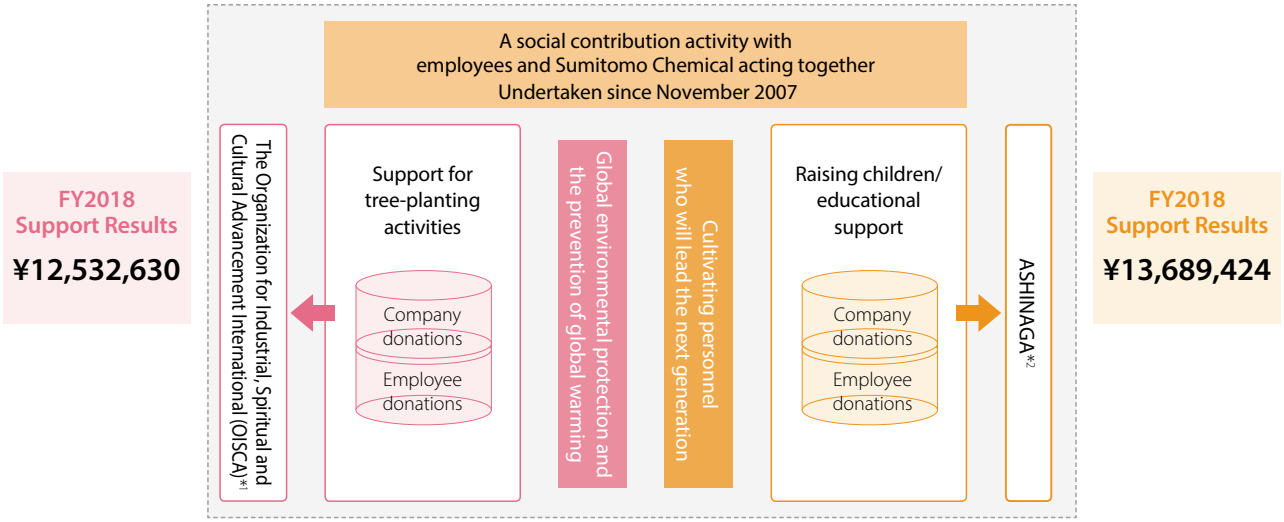
https://www.sumitomo-chem.co.jp/sustainability/library/ (Japanese only)

Matching Gift Program

As a social contribution activity with employees and the Sumitomo Chemical Group acting together since fiscal 2007, the matching gift program, which is run in collaboration with the labor union, collects donations from executives and employees working at Sumitomo Chemical and Group companies. Sumitomo Chemical then matches their donations.

One of the beneficiaries of the donations from the matching gift program is the Organization for Industrial, Spiritual and Cultural Advancement International (OISCA), with whom we work on various tree-planting projects. In collaboration with the labor union, we have been dispatching employee volunteers to help with these projects since 2008.

Matching Gift Program



*1 The Organization for Industrial, Spiritual and Cultural Advancement International (OISCA) is a global NGO engaged in rural development and environmental protection mainly in the Asia-Pacific region. The money donated by Sumitomo Chemical to this organization is used for its Children's Forest Program, the Sumitomo Chemical Forest mangrove planting project in Ranong Province, Thailand, and Japan's Coastal Forest Restoration Project following the Great East Japan Earthquake.

*2 ASHINAGA is an NPO established to provide physical and mental support for children who have lost their parents because of illness, accidents, or for other reasons. The money donated to this organization is used to provide a scholarship fund for these orphans.

<Sumitomo Chemical Forest>

Total forest area*	Total trees planted	Total participants*
270 hectares	828,000	179 (Tree-Planting Project in Thailand)

* Total figures are for the period between 2008 and March 2019

Local Communities

TABLE FOR TWO Activities

Since May 2008, each of Sumitomo Chemical's worksites has participated in the TABLE FOR TWO (TFT) initiative. Participating companies in this matching gift-style program donate an amount of money equal to the total donated by employees.

When employees choose to eat any of the healthy TFT menu options available at the Company's cafeterias, 20 yen per meal is donated to help fight starvation in developing countries as well as obesity and lifestyle diseases in advanced nations. Through these types of social contribution activities originating in Japan, we are working to eliminate food disparity.

In fiscal 2018, Sumitomo Chemical ranked 13th of 605 participating companies in terms of amount of money donated. In June 2019, we received a letter of appreciation as a Platinum Supporter from the TFT secretariat.

FY2018 Results

¥2,168,200 **54,205** meals

(matching type with executives, employees, and the Company)

Nurturing the Children of the Next Generation

Supporting Education through Science Workshops

The Sumitomo Chemical Group holds science workshops for children to conduct experiments and make crafts with the Group's products. These workshops enable them to experience the wonders and appeal of science with their own hands, in order to convey in a manner that children can easily understand how everyday products are linked to chemicals.

We conducted these science workshops during plant tours and at the visiting classes at neighboring schools. We also participate in events held in local communities. In fiscal 2018, we had an exhibit at the Children's Chemistry Experiment Show (organized by the Dreams & Chemistry 21 Committee) held in Tokyo and Kobe, with employees from worksites in Tokyo and the Kansai region serving as instructors. To help children understand the inspiring nature of the chemical industry, they held science workshops that incorporated kaleidoscope-related crafts using Sumitomo Chemical polarizers.

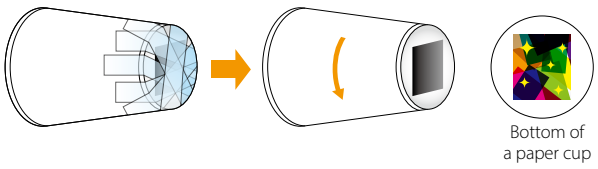
Going forward, we will continue holding science workshops to pique an interest in chemistry among as many children as possible.

Let's Make a Glittery Kaleidoscope!

Materials Paper cups (2), polarizers, cellophane adhesive tape

Directions
① Punch holes in the bottoms of two paper cups and affix polarizers over the holes
② Affix overlapping pieces of cellophane adhesive tape on to the polarizer of one cup in various angles and place the other cup over the top
③ Point the overlapping paper cups toward a bright light, and rotate one cup to make it possible to see vivid, sparkling colors just like a real kaleidoscope

Purpose Utilize the Company's polarizers used in TVs and other LCD products to enable children to learn about the properties of light and, in turn, show how science is used in their everyday lives



Local Communities

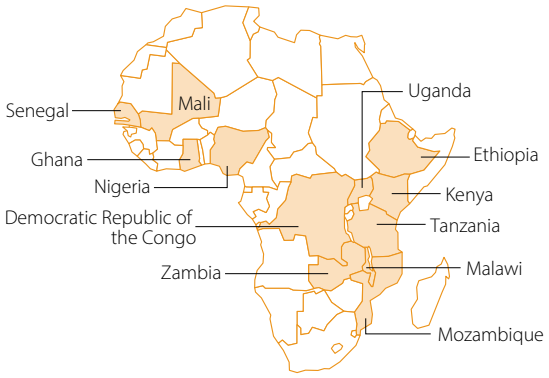
Support for Education in Africa

We believe that in order to break free from poverty and achieve sustainable economic development, Africa needs to build a better educational environment for children. Since 2005, Sumitomo Chemical has been conducting educational support activities centered on the construction of primary and secondary school buildings and related facilities in Africa to support children, on whom the continent's future rests.

As a result of collaborations with the Nigerian Oando Foundation, the World Vision Japan and Plan International Japan, we have to date completed 28 projects in 12 African nations and improved the educational environments of more than 21,000 children.

In fiscal 2018, in the Democratic Republic of the Congo, we supplied math and science teaching materials, raised awareness of malaria prevention techniques, and offered preventive healthcare training in addition to building classrooms for elementary schools. Also, in the Republic of Senegal, we built classrooms and restrooms for high schools, built science laboratories, and enriched science classes for female students. In Nigeria, we improved learning environments by providing aid to build Information and Communications Technology (ICT) centers at three elementary schools as well as computer peripheral equipment and other devices for ICT-related education and science, technology, engineering, and math (STEM) education. We also installed solar power generation equipment.

Support for Education in Africa



Results

Beneficiaries over **21,000** people

Supported countries: 12
(28 projects completed, 3 projects* under way)

* The three projects under way are in Uganda, Ghana, and Nigeria (as of May 2019)

Local Communities

Assisting in Natural Disaster Relief

The Sumitomo Chemical Group supports areas affected by natural disasters in a variety of ways.

To help provide support for the areas recovering from the torrential rains in July 2018, the Company donated ¥10,000,000 through the Japanese Red Cross Society and some municipalities. In addition, Sumitomo Chemical and its Group companies collected ¥5,505,714 from employees and management, and, with the Company matching the same amount as collected, we donated the total amount of ¥11,011,428 to the Japanese Red Cross Society, Ehime Prefecture, and kurashiki City in Okayama Prefecture.

We also provided support in a wide variety of ways, such as by dispatching employee volunteers.

Support for Areas Recovering from Torrential Rains in July 2018

Support recipients and type of support	Details
Provided drinking water to Ozu City, Ehime Prefecture	• Provided 4,800 bottles (500ml) of water from emergency reserve at the Tokyo Head Office • Transported the bottles by Sumika Logistics Co., Ltd.
Dispatched employee volunteers to Ozu City, Ehime Prefecture between July 23, and August 3	• Removed mud and took out furnitures from damaged houses • Dispatched a total of 61 employees from the Ehime Works and the Ohe Works
Provided towels to Kurashiki City, Okayama Prefecture	• Provided 12 cardboard boxes of towels • The towels were donated by employees from the Ehime Works, the Ohe Works and the Okayama Plant

Since the Great East Japan Earthquake of 2011, we have been promoting initiatives involving employee participation to keep the memory of the disaster fresh in people's minds. We have also been providing donations collected through the sale of "Disaster Hit Area Support Meals" served in our cafeterias since April 2011. Under this scheme, a portion of sales is donated to a business that aids orphans in areas hit by the disaster, and the companies match that amount.

Since fiscal 2013, through the matching gift program, we have participated in the OISCA coastal woodland rejuvenation project aimed at rejuvenating black pine coastal woodlands in Natori, Miyagi Prefecture. These woodlands were damaged by the tsunami caused by the Great East Japan Earthquake. Since fiscal 2015, we have dispatched employee volunteers to the area. In fiscal 2018, we dispatched 20 volunteers who provided black pine saplings, planted trees, and weeded and fertilized areas where trees were planted with the aim of rejuvenating about 100 hectares of coastal woodland.

Looking ahead, we will support the recovery of disaster-affected areas through a wide variety of activities.

Support Results

Disaster Hit Area Support Meals

¥988,320 **24,708** meals

September: The Great East Japan Earthquake Miyagi Children's Education Fund (the portion used between March 2018 and August 2018)	¥618,400
March: The Great East Japan Earthquake Fukushima Children's Fund (the portion used between September 2018 and February 2019)	¥369,920

Examples of Social Contribution Activities (Japanese only)

https://www.sumitomo-chem.co.jp/sustainability/files/docs/social_contribution_activities.pdf

Looking Ahead

In order to maintain the trust of local communities, Sumitomo Chemical will promote its social responsibilities by making various social contributions distinctive to the Sumitomo Chemical Group from three perspectives: securing safety, a sound environment, and health; nurturing the children of the next generation; and assisting in natural disaster relief.

Social Activities: Supplementary Data

★: Assured by an independent assurance provider

1 Human Resources

Basic Data

Number of Employees, Average Age, Length of Service, Average Compensation

Item		FY2016	FY2017	FY2018
Number of employees (Sumitomo Chemical Group) ★	Total	32,536	31,837	32,542
	Male	24,232	24,015	24,483
	Female	8,304	7,822	8,059
Sumitomo Chemical ★	Total	5,867	6,005	6,096
	Male	4,982	5,107	5,182
	Female	885	898	914
Consolidated in Japan ★	Total	11,827	11,801	11,965
	Male	—	9,165	9,272
	Female	—	2,636	2,693
Consolidated overseas ★	Total	14,842	14,031	14,481
	Male	—	9,743	10,029
	Female	—	4,288	4,452
Number of non-Japanese employees (Sumitomo Chemical)		108	93	82
Average age (Sumitomo Chemical)		40.0	40.3	40.7
	Male	40.0	40.4	40.8
	Female	39.5	40.0	40.2
Average length of service (years; Sumitomo Chemical)		14.1	14.4	14.9
	Male	14.2	14.5	14.9
	Female	13.7	14.4	14.6
Average annual compensation (yen; Sumitomo Chemical)		8,542,320	8,715,094	9,035,111
Average monthly wages (yen; Sumitomo Chemical)		308,508	310,600	319,721
	Male	308,020	309,740	319,342
	Female	310,713	314,554	321,456

Notes: • The above figures are as of March 31 for each fiscal year. Employee numbers do not include temporary employees, part-time staff, dispatch employees, and staff assigned to other companies not included in the scope of consolidation, but do include staff assigned from other companies not included in the scope of consolidation.
• Average wages are for non-managerial employees (as of August of each year).

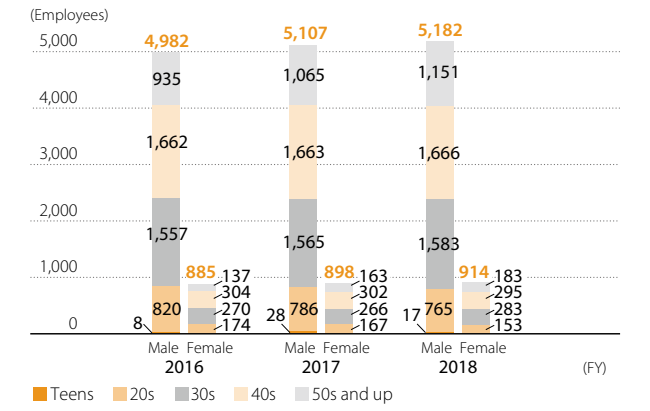
Social Activities: Supplementary Data

Number of Employees by Region and Gender (Sumitomo Chemical Group)

Region			FY2017	FY2018
Japan	Total		17,805	18,060
		Male	14,271	14,453
		Female	3,534	3,607
(The rest of) Asia	Total		10,260	10,661
		Male	7,506	7,770
		Female	2,754	2,891
North America	Total		2,886	2,926
		Male	1,609	1,648
		Female	1,277	1,278
Central and South America	Total		151	163
		Male	104	108
		Female	47	55
Europe	Total		518	509
		Male	346	344
		Female	172	165
Middle East and Africa	Total		132	132
		Male	98	91
		Female	34	41
Oceania	Total		85	91
		Male	81	69
		Female	4	22
Total	Total		31,837	32,542

Note: As of March 31 for each fiscal year

Employee Age Composition and Distribution (Sumitomo Chemical)



Social Activities: Supplementary Data

Number of New Graduate and Mid-career Hires (Sumitomo Chemical)

Results		FY2016	FY2017	FY2018
New graduate hires	Male	117	140	108
	Female	32	22	38
	Total	149	162	146
Mid-career hires	Male	65	48	40
	Female	6	0	11
	Total	71	48	51

Number of Internships (Sumitomo Chemical)

Results	FY2016	FY2017	FY2018
University students in Japan	160	474	675
University students overseas	25	14	8

Number of People who Left the Company (Sumitomo Chemical)

	FY2016			FY2017			FY2018		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Retired early	49	35	14	71	62	9	89	62	27
Other reason	5	5	0	3	3	0	8	7	1
Total number	54	40	14	74	65	9	97	69	28
Early retirement rate (%)	0.8	0.7	1.6	1.2	1.2	1.0	1.2	1.0	2.5
Attrition rate (%)	0.9	0.8	1.6	1.2	1.3	1.0	1.3	1.1	2.6

Note: Since the calculation standards have been changed, the data has been retroactively revised in previous fiscal years

Retention of New Graduate Hires (Sumitomo Chemical)

	Male	Female
New graduate hires in April 2016	103	25
Number of those remaining as of April 2019	99	21
Retention rate of new graduates after three years (%)	96.1	84.0

Social Activities: Supplementary Data

Diversity and Inclusion

Promotions of Employees (As of April 1, 2019; Sumitomo Chemical)

	Female	Male	Non-Japanese	Percentage of Female (%)
Managerial employees*	99	1,811	14	5.2
(Those ranked general manager or above)	11	495	3	2.2
Directors and senior management	2	47	3	4.1
(Those ranked executive officer or above)	1	35	3	2.8

* All employees equivalent to managers or above

Percentage of Female Managers (Sumitomo Chemical Group)

		FY2016	FY2017	FY2018
Managers	Male	8,286	8,258	8,378
	Female	1,680	1,410	1,455
	Total	9,966	9,668	9,833
Percentage of female managers (%)		16.9	14.6	14.8

Note: As of March 31 for each fiscal year

Work-Life Balance

Percentage of Paid Vacation Days Used (Sumitomo Chemical)

	FY2016	FY2017	FY2018
Number of days of paid vacation provided	20	20	20
Number of days of paid vacation used	12.9	13.4	14.3
Percentage of paid vacation days used (%)	64.7	67.2	71.8

Average Overtime Work (Sumitomo Chemical)

(Hours/Month)

	FY2016	FY2017	FY2018
Average overtime hours	20.0	20.2	21.2

Return Rate of Female Employees who Take Cessation from Work for Childcare (Sumitomo Chemical)

(%)

	FY2016	FY2017	FY2018
Of employees who finished childcare leave within the fiscal year, percentage of employees who returned to work	93.9	100.0	98.1

Social Activities: Supplementary Data

2 Occupational Safety and Health / Industrial Safety and Disaster Prevention

Occupational Safety and Health Management System

By fiscal 2009, Sumitomo Chemical acquired OSHMS certification from the Japan Industrial Safety and Health Association (JISHA) at four of its Works and two of its Research Laboratories. (JISHA's OSHMS includes the same requirements as OHSAS18001.)

JISHA's Official Websites

Japanese: https://www.jisha.or.jp/about/index.html

English: https://www.jisha.or.jp/english/index.html

Acquisition of OSHMS Certification (Sumitomo Chemical (Works and Research Laboratories))

Facilities	Certificate Number	Certification Date
Chiba Works	03-12-1	May 2003
Osaka Works	05-27-3	February 2005
Oita Works (Utajima)	09-27-14	January 2009
Oita Works (Gifu Plant)	09-21-6	February 2009
Oita Works (Okayama Plant)	09-33-7	February 2009
Oita Works	06-44-1	July 2006
Ohe Works	10-38-4	March 2010
Health & Crop Sciences Research Laboratory	07-28-9	January 2007
Tsukuba Regional Research Laboratory*	05-8-3	December 2005

* The Tsukuba Regional Research Laboratory was reorganized into the Advanced Materials Research Laboratory, IT-related Chemicals Research Laboratory (Tsukuba), and Energy & Functional Materials Research Laboratory (Tsukuba).

Voluntary Safety Management of High-Pressure Gas Based on Certification by the Minister

Sumitomo Chemical continually renews the Accreditation of Completion and Safety Inspection, as stipulated in the High Pressure Gas Safety Act, for the Ehime Works and the Chiba Works. Certification is given to facilities that have achieved excellent safety, management, and technological levels and that are recognized as having met legally mandated requirements for safety management systems. Certified plants are allowed to conduct Completion Inspections and Safety Inspections of their own facilities in place of national, prefectural, and other governmental organizations.

Number of Accreditations of Completion and Safety Inspection Given for Sumitomo Chemical Facilities

Works	Area	Year of certification	Year and month renewed	Number of facilities given accreditation
Ehime Works	Niihama	2002	March 2018	13
	Kikumoto	2002	March 2018	4
Chiba Works	Anesaki	1987	May 2019	8
	Sodegaura	1987	May 2019	15

Note: Number of facilities given accreditation data as of the time of certification renewal.

Social Activities: Supplementary Data

Criteria and Results of the President's Safety Award for Zero-Lost Workday Operations (as of May 31, 2019)

Sumitomo Chemical has set facility specific criteria for the achievement of continuous periods of zero-lost workday operations for employees as well as contractors. The President's Safety Award is presented to facilities in recognition of their satisfaction of the above-mentioned criteria.

Sumitomo Chemical Employees (Works, Research Laboratories)

Facilities	Criteria for the President's Safety Award*1	Results
Ehime Works	3 million hours	Reached 12 million work hours in April 2018. Working to reach the target of 15 million work hours.
Ohe Works*2	3 million hours	A lost workday accident occurred in March 2019. Working to reach the target of 3 million work hours.
Chiba Works	3 million hours	A lost workday accident occurred in March 2019. Working to reach the target of 3 million work hours.
Osaka Works	3 million hours	Working to reach the target of 15 million work hours.
Oita Works*3	1.5 million hours	Reached 4.5 million work hours in January 2019. Working to reach the target of 6 million work hours.
Misawa Works	30 months	Reached 180 months in September 2018. Working to reach the target of 2.1 million work hours.
Health & Crop Sciences Research Laboratory	30 months	Working to reach the target of 30 months.
Tsukuba Regional Research Laboratory*4	30 months	Reached 360 months in March 2019. Working to reach the target of 390 months.

Contractors / Affiliated Company Employees of Sumitomo Chemical (Works, Research Laboratories)

Facilities	Criteria for the President's Safety Award*1	Results
Ehime Association (Plant maintenance)	24 months	A lost workday accident occurred in March 2019. Working to reach the target of 24 months.
Ehime Logistics Association (Logistics)	24 months	Working to reach the target of 48 months
Ohe Association (Plant maintenance)	48 months	Working to reach the target of 144 months
Ohe Logistics Association (Logistics)	48 months	Working to reach the target of 144 months
Chiba Association (Plant maintenance)	24 months	Working to reach the target of 24 months
Chiba Logistics Association (Logistics)	24 months	Working to reach the target of 48 months
Osaka Association	24 months	Working to reach the target of 24 months
Oita Association	24 months	Reached 96 months in April 2019. Working to reach the target of 120 months
Okayama Association	48 months	Working to reach the target of 48 months
Gifu Association	48 months	Working to reach the target of 144 months
Misawa Works	48 months	Reached 96 months in September 2018. Working to reach the target of 144 months
Health & Crop Sciences Research Laboratory	48 months	Reached 240 months in March 2019. Working to reach the target of 288 months
Tsukuba Regional Research Laboratory*4	48 months	Reached 96 months in March 2019. Working to reach the target of 144 months

*1 Continuous periods of zero lost-workday operations.
*2 Ohe Works includes Sumika Assembly Techno Co., Ltd.
*3 Oita Works includes the Utajima Pilot Production Department, Gifu Plant, and Okayama Plant.
*4 The Tsukuba Regional Research Laboratory was reorganized into the Advanced Materials Development Research Laboratory, IT-related Chemicals Research Laboratory (Tsukuba), and Energy & Functional Materials Research Laboratory (Tsukuba).

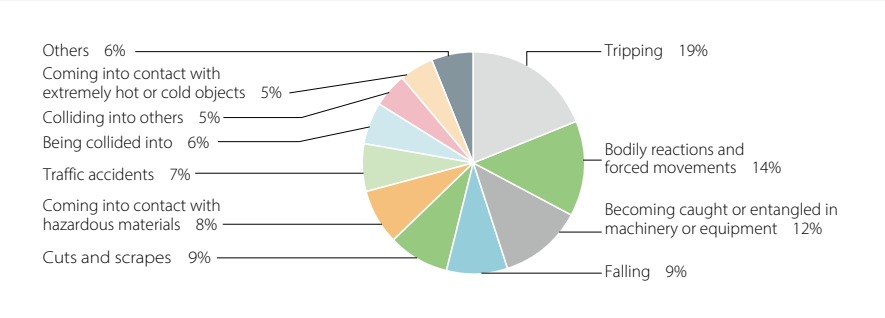
Social Activities: Supplementary Data

Safety Achievements

Lost-Workday Injuries (Sumitomo Chemical Group*)

	FY2015	FY2016	FY2017	FY2018
Number of lost-workday injuries	17	9	17	35
Frequency rate of lost-workday injuries	0.27	0.14	0.26	0.58
Number of fatal accidents	0	0	2	1
Number of fatal accidents (contract employees)	0	0	0	1

FY2018 Breakdown of Causes of Injury by Type (Sumitomo Chemical Group*)

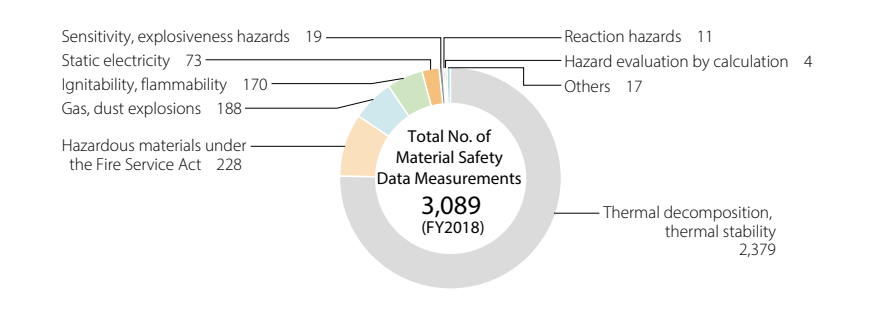


* As defined for occupational safety and health, industrial safety, and disaster prevention:
Sumitomo Chemical (including contractors) and consolidated Group companies in Japan and overseas.

Social Activities: Supplementary Data

Industrial Safety and Disaster Prevention Results

Results of Material Safety Data Measurements



The Safety Engineering Group at the Production & Safety Fundamental Technology Center studies and assesses process safety, researches safety measures, measures and evaluates material safety data, compiles a database on safety technologies, and undertakes training for safety engineers in its efforts to enhance process safety management and to prevent accidents such as fires and explosions. A total of 2,911 material safety data measurements were taken in fiscal 2018 (2,512 measurements in fiscal 2017) from within Sumitomo Chemical. In addition, 178 measurements were taken in fiscal 2018 (183 measurements in fiscal 2017) from Group companies. Total measurements undertaken were 3,089 in fiscal 2018 (2,695 measurements in fiscal 2017).

The Launch of Several Process Safety Review Committees (Sumitomo Chemical (All Worksites))

	R&D stages		Industrialization stage		
Fiscal Year	Level 1	Level 2	Level 3	Level 4	Level 5
2015	22	29	41	131	26
2016	14	33	37	81	17
2017	25	19	27	88	47
2018	24	38	27	91	24

When new processes are developed at Sumitomo Chemical, the Process Safety Review Committee (levels 1 to 5) convenes at every step, from R&D through to industrial-scale production. In essence, this Committee focuses on process safety assessment results and confirms whether safety countermeasures are appropriate.

Safety Information Database (Sumitomo Chemical)

	Number of data sets	(Year on year comparison)
Accident prevention technology information	19,682	Increased by 718
Accident cause investigations	2,400	Increased by 29
Accident information	20,597	Increased by 215
As of March 31, 2019	42,679	Increased by 962

A safety information database has been created by collecting information on accidents in Japan and overseas and compiling abstracts of said data. As of the end of March 2019, 42,679 sets of data were stored in the database (41,717 sets of data as of March 31, 2018). This system allows all employees at each Works or Research Laboratory to search stored data using individual terminals. This data is also used in process hazard evaluations and case study examinations to prevent similar accidents. In addition, accident data is also disclosed to Group companies as necessary.

Social Activities: Supplementary Data

3 Product Stewardship / Product Safety / Quality Assurance

Quality Management System

Acquisition of ISO 9001 Certification (Sumitomo Chemical (All Works))

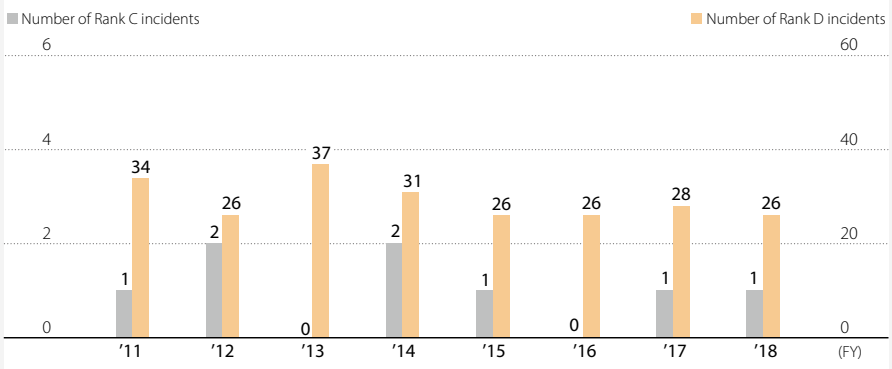
Works	Certificate Number	Certification Date
Ehime Works	JCQA-0019 JET-0847	October 1994 August 2009
Chiba Works	JQA-0829	March 1995
Osaka Works	JQA-0721	December 1994
Oita Works*	JQA-1069	December 1995
Misawa Works	JQA-0752	December 1994
Ohe Works	JET-0829 JCQA-1720	April 1998 January 2010

* The Oita Works (Okayama Plant) and the Oita Works (Gifu Plant) have been pursuing Good Manufacturing Practice (GMP) management.

Logistics Quality Assurance

In fiscal 2018, the Company reported one logistics quality incident of rank C and 26 incidents of rank D. Of these incidents, 15 involved shipping error or false delivery, which can cause significant problems in the quality of customers' products. Going forward, we will continue to promote measures to reduce the number of logistics quality incidents.

Logistics Incidents Having an Impact on Our Customers (Sumitomo Chemical)



Note: • Ranks reflect Sumitomo Chemical's standard, which classifies incidents into Ranks A, B, C, and D in descending order of severity.
• There were no occurrences of Rank A or Rank B (the most severe) incidents.
• Incidents within the scope of logistics operations are consigned to Sumitomo Chemical.

Social Activities: Supplementary Data

4 Social Contributions

Major Donations (FY2018) (Sumitomo Chemical Group*)

(Million yen)

Item	Amount
To support areas recovering from the torrential rainfall in July 2018*	10.0
To support the development and education of children through ASHINAGA (Matching Gift program)*	6.6
To support OISCA's tree planting activities (Matching Gift program)*	5.9
To support education in Africa	5.3
TABLE FOR TWO (Matching Gift program)*	1.1
To support recovery from the Great East Japan Earthquake	0.9

Note: The donation amounts are the amounts paid by companies
* Sumitomo Chemical and Group companies participating in the Matching Gift program

Number of Major Donations (FY2018) (Sumitomo Chemical)

Item	Number of cases
Local community activities	179
International exchange and cooperation	31
Sports	30
Education and social education	16
Culture and art	14
Social welfare	14
Academic study and research	13
Support to areas devastated by disasters	8

Leave for Volunteer Work and Number of Employees Using Leave for Volunteer Work (Sumitomo Chemical)

	System in place	FY2016	FY2017	FY2018
Vacations for volunteering	Yes	35	27	24

List of Policies

We have gathered together the Sumitomo Chemical Group's policies, guidelines, and other guidance related to sustainability.

Policies	Web
Corporate Philosophy	
The Sumitomo Spirit	https://www.sumitomo-chem.co.jp/english/company/principles/sumitomo/
Business Philosophy	https://www.sumitomo-chem.co.jp/english/company/principles/philosophy/
Basic Principles for Promoting Sustainability	https://www.sumitomo-chem.co.jp/english/sustainability/management/
Sumitomo Chemical Charter for Business Conduct	https://www.sumitomo-chem.co.jp/english/company/principles/charter/
Governance	
Sumitomo Chemical Corporate Governance Guidelines	https://www.sumitomo-chem.co.jp/english/company/files/docs/governance_pdf_01.pdf
Corporate Governance Report	https://www.sumitomo-chem.co.jp/english/company/files/docs/governance_report_e.pdf
Basic policy for Enhancement of the Internal Control System	https://www.sumitomo-chem.co.jp/english/company/files/docs/InternalControlSystem_20190329_e.pdf
Compliance Manual	https://www.sumitomo-chem.co.jp/english/company/compliance/rules/society/
Basic Policy Regarding on Compliance	▶ P.45 Basic Policy
Compliance Manual for Bribery Prevention (Outline)	▶ P.54 Compliance Manual for Bribery Prevention (Outline)
Corporate Policy on Safety, the Environment and Product Quality	https://www.sumitomo-chem.co.jp/english/sustainability/responsiblecare/management/promote/
Policy on Responsible Care Activities	https://www.sumitomo-chem.co.jp/english/sustainability/responsiblecare/management/promote/
Environment	
Corporate Policy on Safety, the Environment and Product Quality	https://www.sumitomo-chem.co.jp/english/sustainability/responsiblecare/management/promote/
Eco-First Commitments	https://www.sumitomo-chem.co.jp/english/sustainability/responsiblecare/management/ecofirst/
Sumitomo Chemical's Commitment to the Conservation of Biodiversity	https://www.sumitomo-chem.co.jp/english/sustainability/responsiblecare/env_cli/conservation/
Society (Social Activities)	
Sumitomo Chemical Group Human Rights Policy	https://www.sumitomo-chem.co.jp/english/sustainability/files/docs/HumanRightsPolicy_e.pdf
Basic Procurement Principles	https://www.sumitomo-chem.co.jp/english/company/purchasing/principles/
Sumitomo Chemical Supply-Chain CSR Deployment Guidebook	https://www.sumitomo-chem.co.jp/english/sustainability/society/partners/
Conflict-Free Procurement Policy	https://www.sumitomo-chem.co.jp/english/sustainability/society/partners/
Human Resources System Initiatives	https://www.sumitomo-chem.co.jp/english/sustainability/society/employees/human_resources/
Action Plan to Reform Workstyles	https://www.sumitomo-chem.co.jp/english/sustainability/society/employees/diversity/
Corporate Policy on Safety, the Environment and Product Quality	https://www.sumitomo-chem.co.jp/english/sustainability/responsiblecare/management/promote/
Sumitomo Chemical's Social Contribution Activities	https://www.sumitomo-chem.co.jp/english/sustainability/society/region/

Calculation Standards for Environmental and Social Data Indicators

1. Period: April 2018 to March 2019
2. Boundary: Refer to Boundary of This Report on page 3 of the *Sustainability Data Book 2019*.
3. Calculation Method:

Environmental Data Indicator		Unit	Calculation Method
Energy	Energy consumption	Thousand kl of crude oil	{(Amount of electricity purchased × Per-unit heating value + Amount of heat purchased × Per-unit heating value) + Σ (Amount of each fuel used × Per-unit heating value for each fuel)} × 0.0258 The per-unit heating value of electricity, per-unit heating value for each fuel, and the types of fuel included in the scope of calculation are based on the values and calculation methods outlined in the Act on the Rational Use of Energy. Because we calculated GHG emissions in accordance with the GHG Protocol from fiscal 2017, the energy usage amount includes the energy used to produce electricity and steam sold to external parties by the Group. The heating value used overseas is based on standard heating values used in the formulation of Japanese laws.
Amount of Exhaustible Resources Used	Hydrocarbon compounds	Thousand tons	Total amount of hydrocarbon compounds used as raw materials (only raw materials purchased from outside the Sumitomo Chemical Group).
	Metals (excluding minor metals)	Thousand tons	Total amount of metals, excluding minor metals, used as raw materials: iron, gold, silver, copper, zinc, aluminum, lead, platinum, titanium, palladium, gallium, and lithium (only raw materials purchased from outside the Sumitomo Chemical Group).
	Minor metals	Thousand tons	Total amount of minor metals used as raw materials: nickel, chromium, tungsten, cobalt, molybdenum, manganese, and vanadium (only raw materials purchased from outside the Sumitomo Chemical Group).
Water	Industrial water drinking water seawater groundwater other water	Million tons	Amount of industrial water, drinking water, seawater, groundwater, and other water used.
PCBs/CFCs in Use or under Secure Storage	No. of electrical devices containing high concentrations of PCBs	Unit	The number of electrical devices containing high concentrations of PCBs, such as condensers and transformers, that are currently in use or under secure storage. Does not include fluorescent lamps and mercury lamp ballasts or contaminated substances (wastepaper, etc.).
	PCB volume	kl	The total amount of PCBs in electrical devices containing PCBs, calculated as the net PCB content by volume. Does not include fluorescent lamps and mercury lamp ballasts or contaminated substances (wastepaper, etc.).
	No. of refrigeration units using specified CFCs as a coolant	Units	The number of refrigerator units currently using specified CFCs as a coolant.
	No. of refrigeration units using specified HCFCs as a coolant	Units	The number of refrigerator units currently using specified HCFCs as a coolant.
Products	Calculated on the basis of ethylene production	Thousand tons	The production volume of products is calculated on the basis of ethylene production, using the amount of energy necessary to manufacture the products by weight and the amount of energy necessary for ethylene production by weight. Some assumptions were made in calculations due to the difficulty of obtaining weight-based figures for certain products.
Water Pollutant Emissions	COD	tons	The total amount of COD emitted into public water bodies (coastal waters/waterways) and sewer systems. Calculated as: The COD concentration at drains included in the scope of calculation × The amount of water drained into public water bodies and sewer systems from each drain.
	Phosphorus	tons	The total amount of phosphorus emitted into public water bodies (coastal waters/waterways) and sewer systems. Calculated as: The phosphorus concentration at drains included in the scope of calculation × The amount of water drained into public water bodies and sewer systems from each drain.
	Nitrogen	tons	The total amount of nitrogen emitted into public water bodies (coastal waters/waterways) and sewer systems. Calculated as: The nitrogen concentration at drains included in the scope of calculation × The amount of water drained into public water bodies and sewer systems from each drain.
Waste Materials	Waste emission amount	Thousand tons	The total amount of waste discharged from business sites. The amount of coal ash generated at Sumitomo Joint Electric Power Co., Ltd., which is included in the waste discharge amount, is calculated on a dry-weight basis.
	Landfill disposal amount: – On-site landfill – External landfill	Thousand tons	The total amount of waste disposed of in landfills. The amount of coal ash generated at Sumitomo Joint Electric Power Co., Ltd., which is included in the landfill disposal amount, is calculated on a dry-weight basis. * Landfill disposal amount for Sumitomo Chemical: Of the waste remaining after external reduction processing, the entire amount disposed of in landfills (not recycled) is calculated as the external landfill disposal amount. ** Landfill disposal amount for Group companies in Japan: At some companies' factories, the waste remaining after the external reduction processing of waste is not included.
	Total landfill	Thousand tons	**Sumitomo Chemical:** The total amount of waste disposed of in landfills. **Group companies in Japan:** The total amount of waste disposed of in landfills.

Calculation Standards for Environmental and Social Data Indicators

Environmental Data Indicator		Unit	Calculation Method
Atmospheric Emissions	Greenhouse gas emissions	Thousand tons of CO_2	**CO_2 emissions from energy use:** Amount of electricity purchased × CO_2 emission factors for electricity + Amount of steam purchased × CO_2 emission factors for steam + Σ(Amount of each fuel used × Per-unit heating value for each fuel × CO_2 emission coefficient for each fuel) The CO_2 emission factors for steam, per-unit heating value for each fuel, and CO_2 emission factors for each fuel are based on the values outlined in the Greenhouse Gas Emissions Accounting, Reporting, and Disclosure System of the Act on Promotion of Global Warming Countermeasures. The CO_2 emission factors for electricity in Japan uses the values for each fiscal year by electric power company and that for overseas uses the values by electric power company along with the IEA's fiscal 2016 efficiency indicators for each country. From fiscal 2017, results include the energy used to produce the power and steam sold to external parties in accordance with the GHG Protocol. **CO_2 emissions from other than energy use and non-CO_2 GHG emissions:** In Japan, results are based on the calculation method outlined in the Greenhouse Gas Emissions Accounting, Reporting, and Disclosure System of the Act on Promotion of Global Warming Countermeasures. From fiscal 2017, results include CO_2 emissions generated by processes not subject to reporting under the Act on Promotion of Global Warming Countermeasures but that emit 3,000 or more tons of CO_2 per year. Overseas, figures are calculated in accordance with the laws and regulations of their respective countries.
	NOx	Tons	The total amount of nitrogen oxides originating from facilities specified in the Air Pollution Control Act. Calculated as: Each facility's dry gas emission volume × NOx (N_2O) concentration.
	SOx	Tons	The total amount of sulfur oxides originating from facilities specified in the Air Pollution Control Act. Calculated as: Amount of sulfur in fuel used by each facility × Amount of fuel used. Or calculated as: Each facility's dry gas emission volume × SOx (SO_2) concentration.
	Soot and dust	Tons	The total amount of soot and dust originating from facilities specified in the Air Pollution Control Act. Calculated as: Each facility's dry gas emission volume × Soot and dust concentration.
Substances Subject to the PRTR Act	Atmospheric emissions, water pollutant emission	Tons	Calculated based on the amended Order for Enforcement of the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (amended Order for Enforcement of the PRTR Act), executed on April 1, 2010.
Logistics	Usage amount (Boundary: Sumitomo Chemical)	Thousand kl of crude oil	The energy usage amount is calculated as 10 GJ = 0.258 kl of crude oil, based on the Energy Saving Act Guide Book for Shippers written and edited by Japan's Agency for Natural Resources and Energy.
	CO_2 emissions (Boundary: Sumitomo Chemical)	Thousand tons of CO_2	Calculated based on the Manual for Calculation and Report of Greenhouse Gas Emissions (Ver. 4.3.2) from Japan's Ministry of the Environment and Ministry of Economy, Trade and Industry using the energy usage amount calculated above in GJ.
Scope 3 Greenhouse Gas Emissions (Sumitomo Chemical and Group companies listed in Japan)	Category 1: Purchased goods and services	Tons of CO_2	Σ {(Volume and monetary amount of goods and services purchased and acquired × Emission intensity)} Values used for emission intensity (volume) are based on the values outlined in the Basic Database for Carbon Footprint Communication Programs Version 1.01. Values used for emission intensity (monetary amount) calculations are based on the values outlined in the Database on Emission Intensities for Calculating Organizational Greenhouse Gas Emissions, etc. through a Supply Chain Version 2.6 March 2019.
	Category 2: Capital goods	Tons of CO_2	Σ {(Value of capital goods) × (Emission intensity)} Values used for emission intensity are based on the values outlined in the Database on Emission Intensities for Calculating Organizational Greenhouse Gas Emissions, etc. through a Supply Chain Version 2.6 March 2019.
	Category 3: Fuels and energy-related activities not included in Scope 1 or 2	Tons of CO_2	Σ {(Amount of electricity purchased) × (Emissions intensity)} + Σ{(Amount of heat purchased) × (Emissions intensity)} + Σ{(Amount of each fuel used) × (Emissions intensity for each fuel)} Values used for emission intensity are based on the values outlined in the Database on Emission Intensities for Calculating Organizational Greenhouse Gas Emissions, etc. through a Supply Chain Version 2.6 March 2019 and the Basic Database for Carbon Footprint Communication Programs Version 1.01.
	Category 4: Upstream transportation and distribution	Tons of CO_2	Calculated by the calculation method for CO_2 emissions in logistics area or by using values based on the Carbon Footprint Communication Programs Version.1.01
	Category 5: Waste generated in operations	Tons of CO_2	Σ {(Amount of waste by type and processing method (incinerating, recycling, disposing of in landfills)) × (CO_2 emissions intensity of waste by type and processing method)} Waste by type and Unit CO_2 emissions intensity by processing method are based on the values outlined in the Database on Emission Intensities for Calculating Organizational Greenhouse Gas Emissions, etc. through a Supply Chain Version 2.6 March 2019.
	Category 6: Business travel	Tons of CO_2	By mode of travel: Σ (Expenses paid for transportation × Emission intensity) Values used for emission intensity are based on the values outlined in the Database on Emission Intensities for Calculating Organizational Greenhouse Gas Emissions, etc. through a Supply Chain Version 2.6 March 2019.
	Category 7: Employee commuting	Tons of CO_2	By mode of commuting: Σ (Expenses paid for transportation × Emission intensity) Values used for emission intensity are based on the values outlined in the Database on Emission Intensities for Calculating Organizational Greenhouse Gas Emissions, etc. through a Supply Chain Version 2.6 March 2019.

Calculation Standards for Environmental and Social Data Indicators

Environmental Data Indicator		Unit	Calculation Method
Scope 3 Greenhouse Gas Emissions (Sumitomo Chemical and Group companies listed in Japan)	Category 8: Upstream leased assets	Tons of CO_2	Calculations of emissions from leased vehicles: Σ (Amount of gasoline consumed annually per vehicle × Emission intensity) The amount of gasoline consumed annually per vehicle is calculated using the Annual Report on Automobile Transportation Statistics. Values used for emission intensity are based on the emission factors outlined in the Accounting, Reporting, and Disclosure System of the Act on Promotion of Global Warming Countermeasures.
	Category 9: Downstream transportation and distribution	Tons of CO_2	Refer to the calculation method used for CO_2 emissions in the logistics section above. Calculations are for fertilizer products for which the suppliers are known and that are sold to consumers as final products.
	Category 10: Processing of sold products	Tons of CO_2	Exempted: The Group's products are mainly materials and components used for various applications, which makes it difficult to know such details as the nature of the processing products undergo after delivery. Based on the calculation guidelines for the chemical industry created by the WBCSD, the Group is exempted from this category.
	Category 11: Use of sold products	Tons of CO_2	Calculations are for the pharmaceutical product fixed-dose mist inhalers as well as fertilizer products for which GHG emissions levels are known and that are sold to consumers as final products. Σ (Fertilizer sales volume by type × Percentage of nitrogen in fertilizers by type × N_2O efficiency indicator by type × 298 (GWP)) Σ (HFC volume in fixed-dose mist inhalers × GWP) Values for GWP are based on emission factors listed in Appendix 15 under the Calculation Method and Emission Factors Chart in the Accounting, Reporting, and Disclosure System of the Act on Promotion of Global Warming Countermeasures.
	Category 12: End-of-life treatment of sold products	Tons of CO_2	Calculations are for the Group's main resin-related products. Σ {(Production volume of resin-related products) × (Emission intensity)} Values used for emission intensity are based on the values outlined in the Database on Emission Intensities for Calculating Organizational Greenhouse Gas Emissions, etc. through a Supply Chain Version 2.6 March 2019.
	Category 13: Downstream leased assets	Tons of CO_2	Exempted: There are no relevant leased assets.
	Category 14: Franchises	Tons of CO_2	Exempted: There are no relevant operations.
	Category 15: Investments	Tons of CO_2	Exempted: Because Sumitomo Chemical changed its approach to financial control consolidation for disclosure purposes from fiscal 2017, the Group is now exempted from this category.

Social and Economic Data Indicator		Unit	Calculation Method
Occupational Safety and Health	Frequency rate of lost-workday injuries	—	(Number of lost-workday injuries and casualties ÷ Cumulative total of hours worked) × 1,000,000

Environmental Accounting Indicators		Unit	Calculation Method
Environmental Protection Costs		100 million yen	Costs include depreciation.
Economic Effects	Reduced costs through energy saving	100 million yen	Reduced costs of energy through energy-saving activities.
	Reduced costs through resource saving	100 million yen	Reduced costs of waste processing attributable to resource-saving activities.
	Reduced costs through recycling activities	100 million yen	Reduced costs in the previous fiscal year of waste processing expenses through waste reduction attributable to recycling activities and gains on sales of valuable resources obtained from recycling, etc.

KPMG

Independent Assurance Report

To the Representative Director & President of Sumitomo Chemical Company, Limited

We were engaged by Sumitomo Chemical Company, Limited (the "Company") to undertake a limited assurance engagement of the environmental and social performance indicators marked with "★" (the "Indicators") for the period from April 1, 2018 to March 31, 2019 included in its Sustainability Data Book 2019 (the "Data Book") for the fiscal year ended March 31, 2019.

The Company's Responsibility

The Company is responsible for the preparation of the Indicators in accordance with its own reporting criteria (the "Company's reporting criteria"), as described in the Data Book.

Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Indicators based on the procedures we have performed. We conducted our engagement in accordance with the 'International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements other than Audits or Reviews of Historical Financial Information' and the 'ISAE 3410, Assurance Engagements on Greenhouse Gas Statements' issued by the International Auditing and Assurance Standards Board. The limited assurance engagement consisted of making inquiries, primarily of persons responsible for the preparation of information presented in the Data Book, and applying analytical and other procedures, and the procedures performed vary in nature from, and are less in extent than for, a reasonable assurance engagement. The level of assurance provided is thus not as high as that provided by a reasonable assurance engagement. Our assurance procedures included:

- Interviewing the Company's responsible personnel to obtain an understanding of its policy for preparing the Data Book and reviewing the Company's reporting criteria.
- Inquiring about the design of the systems and methods used to collect and process the Indicators.
- Performing analytical procedures on the Indicators.
- Examining, on a test basis, evidence supporting the generation, aggregation and reporting of the Indicators in conformity with the Company's reporting criteria, and recalculating the Indicators.
- Visiting one of the Company's factories and one of the Company's subsidiaries selected on the basis of a risk analysis.
- Evaluating the overall presentation of the Indicators.

Conclusion

Based on the procedures performed, as described above, nothing has come to our attention that causes us to believe that the Indicators in the Data Book are not prepared, in all material respects, in accordance with the Company's reporting criteria as described in the Data Book.

Our Independence and Quality Control

We have complied with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which includes independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. In accordance with International Standard on Quality Control 1, we maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

KPMG AZSA Sustainability Co., Ltd.

KPMG AZSA Sustainability Co., Ltd.
Osaka, Japan
October 16, 2019

GRI standards reference table

This report references GRI Standards issued in 2016.

Universal standards

NO.	Disclosure	Reporting requirements	2019Corresponding part
GRI102 : General Disclosures 2016			
Organizational profile			
102-1	Name of the organization	a. Name of the organization.	Corporate Profile
102-2	Activities, brands, products, and services	a. A description of the organization's activities. b. Primary brands, products, and services, including an explanation of any products or services that are banned in certain markets.	Business & Products Sector Information(Annual Reports p40-63)
102-3	Location of headquarters	a. Location of the organization's headquarters.	Corporate Profile
102-4	Location of operations	a. Number of countries where the organization operates, and the names of countries where it has significant operations and/or that are relevant to the topics covered in the report.	Business Locations & Group Companies
102-5	Ownership and legal form	a. Nature of ownership and legal form.	Corporate Profile
102-6	Markets served	a. Markets served, including: i. geographic locations where products and services are offered; ii. sectors served; iii. types of customers and beneficiaries.	Corporate Data (Annual Reports P94-99) Business Locations & Group Companies
102-7	Scale of the organization	a. Scale of the organization, including: i. total number of employees; ii. total number of operations; iii. net sales (for private sector organizations) or net revenues (for public sector organizations); iv. total capitalization (for private sector organizations) broken down in terms of debt and equity; v. quantity of products or services provided.	Corporate Profile
102-8	Information on employees and other workers	a. Total number of employees by employment contract (permanent and temporary), by gender. b. Total number of employees by employment contract (permanent and temporary), by region. c. Total number of employees by employment type (full-time and part-time), by gender. d. Whether a significant portion of the organization's activities are performed by workers who are not employees. If applicable, a description of the nature and scale of work performed by workers who are not employees. e. Any significant variations in the numbers reported in Disclosures 102-8-a, 102-8-b, and 102-8-c (such as seasonal variations in the tourism or agricultural industries). f. An explanation of how the data have been compiled, including any assumptions made.	Social Activities : Supplementary Data (p156-159 Human Resources)
102-9	Supply chain	a. A description of the organization's supply chain, including its main elements as they relate to the organization's activities, primary brands, products, and services.	Sectot Information(Annual Reports p44-63) Production Flow Charts (Investors' Handbook p82-89)
102-10	Significant changes to the organization and its supply chain	a. Significant changes to the organization's size, structure, ownership, or supply chain, including: i. Changes in the location of, or changes in, operations, including facility openings, closings, and expansions; ii. Changes in the share capital structure and other capital formation, maintenance, and alteration operations (for private sector organizations); iii. Changes in the location of suppliers, the structure of the supply chain, or relationships with suppliers, including selection and termination.	Not applicable
102-11	Precautionary Principle or approach	a. Whether and how the organization applies the Precautionary Principle or approach.	For a Sustainable Future(p4-28) Value Creation Platform (Annual Reports p64-91)
102-12	External initiatives	a. A list of externally-developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes, or which it endorses.	For a Sustainable Future (p23-26 Participation in Initiatives) Respect for Human Rights (p112-116)
102-13	Membership of associations	a. A list of the main memberships of industry or other associations, and national or international advocacy organizations.	For a Sustainable Future (p23-26 Participation in Initiatives)
Strategy			
102-14	Statement from senior decision-maker	a. A statement from the most senior decision-maker of the organization (such as CEO, chair, or equivalent senior position) about the relevance of sustainability to the organization and its strategy for addressing sustainability.	For a Sustainable Future (p5 President's Message)
102-15	Key impacts, risks, and opportunities	a. A description of key impacts, risks, and opportunities.	For a Sustainable Future (p5 President's Message) Governance (p42-44 Risk Management) Management Strategy(Annual Reports p12－29)

NO.	Disclosure	Reporting requirements	2019Corresponding part
Ethics and integrity			
102-16	Values, principles, standards, and norms of behavior	a. A description of the organization's values, principles, standards, and norms of behavior.	For a Sustainable Future (p6-8 Corporate Philosophy)
102-17	Mechanisms for advice and concerns about ethics	a. A description of internal and external mechanisms for: i. seeking advice about ethical and lawful behavior, and organizational integrity; ii. reporting concerns about unethical or unlawful behavior, and organizational integrity.	Governance(p45-52 Compliance)
Governance			
102-18	Governance structure	a. Governance structure of the organization, including committees of the highest governance body. b. Committees responsible for decision-making on economic, environmental, and social topics.	Governance(p30-39 Corporate Governance)
102-19	Delegating authority	a. Process for delegating authority for economic, environmental, and social topics from the highest governance body to senior executives and other employees.	For a Sustainable Future (p13 Sustainability Promotion System) Governance(p30-39 Corporate Governance)
102-20	Executive-level responsibility for economic, environmental, and social topics	a. Whether the organization has appointed an executive-level position or positions with responsibility for economic, environmental, and social topics. b. Whether post holders report directly to the highest governance body.	For a Sustainable Future (p13 Sustainability Promotion System)
102-21	Consulting stakeholders on economic, environmental, and social topics	a. Processes for consultation between stakeholders and the highest governance body on economic, environmental, and social topics. b. If consultation is delegated, describe to whom it is delegated and how the resulting feedback is provided to the highest governance body.	For a Sustainable Future (p13 Sustainability Promotion System)
102-22	Composition of the highest governance body and its committees	a. Composition of the highest governance body and its committees by: i. executive or non-executive; ii. independence; iii. tenure on the governance body; iv. number of each individual's other significant positions and commitments, and the nature of the commitments; v. gender; vi. membership of under-represented social groups; vii. competencies relating to economic, environmental, and social topics; viii. stakeholder representation.	Governance(p30-39 Corporate Governance)
102-23	Chair of the highest governance body	a. Whether the chair of the highest governance body is also an executive officer in the organization b. If the chair is also an executive officer, describe his or her function within the organization's management and the reasons for this arrangement.	Governance(p30-39 Corporate Governance)
102-24	Nominating and selecting the highest governance body	a. Nomination and selection processes for the highest governance body and its committees. b. Criteria used for nominating and selecting highest governance body members, including whether and how: i. stakeholders (including shareholders) are involved; ii. diversity is considered; iii. independence is considered; iv. expertise and experience relating to economic, environmental, and social topics are considered.	Governance(p30-39 Corporate Governance)
102-25	Conflicts of interest	a. Processes for the highest governance body to ensure conflicts of interest are avoided and managed. b. Whether conflicts of interest are disclosed to stakeholders, including, as a minimum: i. Cross-board membership; ii. Cross-shareholding with suppliers and other stakeholders; iii. Existence of controlling shareholder; iv. Related party disclosures.	Governance(p30-39 Corporate Governance)
102-26	Role of highest governance body in setting purpose, values, and strategy	a. 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 topics.	For a Sustainable Future (p13 Sustainability Promotion System) Governance(p30-39 Corporate Governance)
102-27	Collective knowledge of highest governance body	a. Measures taken to develop and enhance the highest governance body's collective knowledge of economic, environmental, and social topics.	For a Sustainable Future (p13 Sustainability Promotion System) Governance(p30-39 Corporate Governance)
102-28	Evaluating the highest governance body's performance	a. Processes for evaluating the highest governance body's performance with respect to governance of economic, environmental, and social topics. b. Whether such evaluation is independent or not, and its frequency. c. Whether such evaluation is a self-assessment. d. Actions taken in response to evaluation of the highest governance body's performance with respect to governance of economic, environmental, and social topics, including, as a minimum, changes in membership and organizational practice.	For a Sustainable Future (p13 Sustainability Promotion System) Governance(p30-39 Corporate Governance)
102-29	Identifying and managing economic, environmental, and social impacts	a. Highest governance body's role in identifying and managing economic, environmental, and social topics and their impacts, risks, and opportunities – including its role in the implementation of due diligence processes. b. Whether stakeholder consultation is used to support the highest governance body's identification and management of economic, environmental, and social topics and their impacts, risks, and opportunities.	For a Sustainable Future (p13 Sustainability Promotion System) Governance(p30-39 Corporate Governance)

NO.	Disclosure	Reporting requirements	2019Corresponding part
102-30	Effectiveness of risk management processes	a. Highest governance body's role in reviewing the effectiveness of the organization's risk management processes for economic, environmental, and social topics.	Governance (p42-44 Risk Management)
102-31	Review of economic, environmental, and social topics	a. Frequency of the highest governance body's review of economic, environmental, and social topics and their impacts, risks, and opportunities.	Governance (p42-44 Risk Management)
102-32	Highest governance body's role in sustainability reporting	a. The highest committee or position that formally reviews and approves the organization's sustainability report and ensures that all material topics are covered.	For a Sustainable Future (p13 Sustainability Promotion System)
102-33	Communicating critical concerns	a. Process for communicating critical concerns to the highest governance body.	Governance(p45-52 Compliance) Governance (p42-44 Risk Management)
102-34	Nature and total number of critical concerns	a. Total number and nature of critical concerns that were communicated to the highest governance body. b. Mechanism(s) used to address and resolve critical concerns.	—
102-35	Remuneration policies	a. Remuneration policies for the highest governance body and senior executives for the following types of remuneration: i. Fixed pay and variable pay, including performance-based pay, equity-based pay, bonuses, and deferred or vested shares; ii. Sign-on bonuses or recruitment incentive payments; iii. Termination payments; iv. Clawbacks; v. Retirement benefits, including the difference between benefit schemes and contribution rates for the highest governance body, senior executives, and all other employees. b. How performance criteria in the remuneration policies relate to the highest governance body's and senior executives' objectives for economic, environmental, and social topics.	Governance(p30-39 Corporate Governance)
102-36	Process for determining remuneration	a. Process for determining remuneration. b. Whether remuneration consultants are involved in determining remuneration and whether they are independent of management. c. Any other relationships that the remuneration consultants have with the organization.	Governance(p30-39 Corporate Governance)
102-37	Stakeholders' involvement in remuneration	a. How stakeholders' views are sought and taken into account regarding remuneration. b. If applicable, the results of votes on remuneration policies and proposals.	Governance(p30-39 Corporate Governance)
102-38	Annual total compensation ratio	a. Ratio of the annual total compensation for the organization's highest-paid individual in each country of significant operations to the median annual total compensation for all employees (excluding the highest-paid individual) in the same country.	—
102-39	Percentage increase in annual total compensation ratio	a. Ratio of the percentage increase in annual total compensation for the organization's highest-paid individual in each country of significant operations to the median percentage increase in annual total compensation for all employees (excluding the highest-paid individual) in the same country.	—
Stakeholder engagement			
102-40	List of stakeholder groups	a. A list of stakeholder groups engaged by the organization.	For a Sustainable Future (p27-28 Communication with Stakeholders)
102-41	Collective bargaining agreements	a. Percentage of total employees covered by collective bargaining agreements.	—
102-42	Identifying and selecting stakeholders	a. The basis for identifying and selecting stakeholders with whom to engage.	For a Sustainable Future (p27-28 Communication with Stakeholders)
102-43	Approach to stakeholder engagement	a. The organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report preparation process.	For a Sustainable Future (p27-28 Communication with Stakeholders)
102-44	Key topics and concerns raised	a. Key topics and concerns that have been raised through stakeholder engagement, including: i. how the organization has responded to those key topics and concerns, including through its reporting; ii. the stakeholder groups that raised each of the key topics and concerns.	Governance(p48-49 Internal Reporting System)
Reporting practice			
102-45	Entities included in the consolidated financial statements	a. A list of all entities included in the organization's consolidated financial statements or equivalent documents. b. Whether any entity included in the organization's consolidated financial statements or equivalent documents is not covered by the report.	Report Profile (p3)
102-46	Defining report content and topic Boundaries	a. An explanation of the process for defining the report content and the topic Boundaries. b. An explanation of how the organization has implemented the Reporting Principles for defining report content.	Report Profile (p3)
102-47	List of material topics	a. A list of the material topics identified in the process for defining report content.	For a Sustainable Future (p10-11 Material Issues and Foundations for Busuness Continuity)
102-48	Restatements of information	a. The effect of any restatements of information given in previous reports, and the reasons for such restatements.	Human Resources Management (p128 chart:Achievements in Diversity and Inclusion) Social Activities : Supplementary Data (p158 chart:Number of People Who Left the Company)

NO.	Disclosure	Reporting requirements	2019Corresponding part
102-49	Changes in reporting	a. Significant changes from previous reporting periods in the list of material topics and topic Boundaries.	Not applicable
102-50	Reporting period	a. Reporting period for the information provided.	Report Profile (p3)
102-51	Date of most recent report	a. If applicable, the date of the most recent previous report.	Report Profile (p3)
102-52	Reporting cycle	a. Reporting cycle.	Report Profile (p3)
102-53	Contact point for questions regarding the report	a. The contact point for questions regarding the report or its contents.	Report Profile (p3)
102-54	Claims of reporting in accordance with the GRI Standards	a. The claim made by the organization, if it has prepared a report in accordance with the GRI Standards, either: i. *'This report has been prepared in accordance with the GRI Standards: Core option'*; ii. *'This report has been prepared in accordance with the GRI Standards: Comprehensive option'.*	Report Profile (p3) the GRI standards reference table (p171-185)
102-55	GRI content index	a. The GRI content index, which specifies each of the GRI Standards used and lists all disclosures included in the report. b. For each disclosure, the content index shall include: i. the number of the disclosure (for disclosures covered by the GRI Standards); ii. the page number(s) or URL(s) where the information can be found, either within the report or in other published materials; iii. if applicable, and where permitted, the reason(s) for omission when a required disclosure cannot be made.	the GRI standards reference table (p171-185)
102-56	External assurance	a. A description of the organization's policy and current practice with regard to seeking external assurance for the report. b. If the report has been externally assured: i. A reference to the external assurance report, statements, or opinions. If not included in the assurance report accompanying the sustainability report, a description of what has and what has not been assured and on what basis, including the assurance standards used, the level of assurance obtained, and any limitations of the assurance process; ii. The relationship between the organization and the assurance provider; iii. Whether and how the highest governance body or senior executives are involved in seeking external assurance for the organization's sustainability report.	Editorial Policy (p2) Independent Assurance Report (p170)
GRI103 : Management Approach 2016			
103-1	Explanation of the material topic and its Boundary	a. An explanation of why the topic is material. b. The Boundary for the material topic, which includes a description of: i. where the impacts occur; ii. the organization's involvement with the impacts. For example, whether the organization has caused or contributed to the impacts, or is directly linked to the impacts through its business relationships. c. Any specific limitation regarding the topic Boundary.	For a Sustainable Future（p10-11 Material Issues and Foundations for Busuness Continuity）
103-2	The management approach and its component	a. An explanation of how the organization manages the topic. b. A statement of the purpose of the management approach. c. A description of the following, if the management approach includes that component: i. Policies ii. Commitments iii. Goals and targets iv. Responsibilities v. Resources vi. Grievance mechanisms vii. Specific actions, such as processes, projects, programs and initiatives	For a Sustainable Future（p10-11 Material Issues and Foundations for Busuness Continuity） For a Sustainable Future（p13 Sustainability Promotion System）
103-3	Evaluation of the management approach	a. An explanation of how the organization evaluates the management approach, including: i. the mechanisms for evaluating the effectiveness of the management approach; ii. the results of the evaluation of the management approach; iii. any related adjustments to the management approach.	For a Sustainable Future（p13 Sustainability Promotion System）

Topic-specific Standards

NO.	Disclosure	Reporting requirements	2019Corresponding part
ECONOMIC			
GRI201 : Economic Performance 2016			
201-1	Direct economic value generated and distributed	a. Direct economic value generated and distributed (EVG&D) on an accruals basis, including the basic components for the organization's global operations as listed below. If data are presented on a cash basis, report the justification for this decision in addition to reporting the following basic components: i. Direct economic value generated: revenues; ii. Economic value distributed: operating costs, employee wages and benefits, payments to providers of capital, payments to government by country, and community investments; iii. Economic value retained: 'direct economic value generated' less 'economic value distributed'. b. Where significant, report EVG&D separately at country, regional, or market levels, and the criteria used for defining significance.	—

NO.	Disclosure	Reporting requirements	2019Corresponding part
201-2	Financial implications and other risks and opportunities due to climate change	a. Risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue, or expenditure, including: i. a description of the risk or opportunity and its classification as either physical, regulatory, or other; ii. a description of the impact associated with the risk or opportunity; iii. the financial implications of the risk or opportunity before action is taken; iv. the methods used to manage the risk or opportunity; v. the costs of actions taken to manage the risk or opportunity.	Environment（p72-80 Addressing climate change）
201-3	Defined benefit plan bligations and other retirement plans	a. If the plan's liabilities are met by the organization's general resources, the estimated value of those liabilities. b. If a separate fund exists to pay the plan's pension liabilities: i. the extent to which the scheme's liabilities are estimated to be covered by the assets that have been set aside to meet them; ii. the basis on which that estimate has been arrived at; iii. when that estimate was made. c. If a fund set up to pay the plan's pension liabilities is not fully covered, explain the strategy, if any, adopted by the employer to work towards full coverage, and the timescale, if any, by which the employer hopes to achieve full coverage. d. Percentage of salary contributed by employee or employer. e. Level of participation in retirement plans, such as participation in mandatory or voluntary schemes, regional, or country-based schemes, or those with financial impact.	—
201-4	Financial assistance received from government	a. Total monetary value of financial assistance received by the organization from any government during the reporting period, including: i. tax relief and tax credits; ii. subsidies; iii. investment grants, research and development grants, and other relevant types of grant; iv. awards; v. royalty holidays; vi. financial assistance from Export Credit Agencies (ECAs); vii. financial incentives; viii. other financial benefits received or receivable from any government for any operation. b. The information in 201-4-a by country. c. Whether, and the extent to which, any government is present in the shareholding structure.	—
GRI202 : Market Presence 2016			
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	a. When a significant proportion of employees are compensated based on wages subject to minimum wage rules, report the relevant ratio of the entry level wage by gender at significant locations of operation to the minimum wage. b. When a significant proportion of other workers (excluding employees) performing the organization's activities are compensated based on wages subject to minimum wage rules, describe the actions taken to determine whether these workers are paid above the minimum wage. c. Whether a local minimum wage is absent or variable at significant locations of operation, by gender. In circumstances in which different minimums can be used as a reference, report which minimum wage is being used. d. The definition used for 'significant locations of operation'.	—
202-2	Proportion of senior management hired from the local community	a. Percentage of senior management at significant locations of operation that are hired from the local community. b. The definition used for 'senior management'. c. The organization's geographical definition of 'local'. d. The definition used for 'significant locations of operation'.	Social Activities : Supplementary Data (p159 Diversity and Inclusion)
GRI203 : Indirect Economic Impacts 2016			
203-1	Infrastructure investments and services supported	a. Extent of development of significant infrastructure investments and services supported. b. Current or expected impacts on communities and local economies, including positive and negative impacts where relevant. c. Whether these investments and services are commercial, in-kind, or pro bono engagements.	Society（p149-155 Local communities） Social Activities : Supplementary Data (p165 Social Contributions)
203-2	Significant indirect economic impacts	a. Examples of significant identified indirect economic impacts of the organization, including positive and negative impacts. b. Significance of the indirect economic impacts in the context of external benchmarks and stakeholder priorities, such as national and international standards, protocols, and policy agendas.	Society（p149-155 Local communities） Social Activities : Supplementary Data (p165 Social Contributions)
GRI204 : Procurement Practices 2016			
204-1	Proportion of spending on local suppliers	a. Percentage of the procurement budget used for significant locations of operation that is spent on suppliers local to that operation (such as percentage of products and services purchased locally). b. The organization's geographical definition of 'local'. c. The definition used for 'significant locations of operation'.	—
GRI205 : Anti-corruption 2016			
205-1	Operations assessed for risks related to corruption	a. Total number and percentage of operations assessed for risks related to corruption. b. Significant risks related to corruption identified through the risk assessment.	Governance（p53-55 Anti-corruption）

NO.	Disclosure	Reporting requirements	2019Corresponding part
205-2	Communication and training about anti-corruption policies and procedures	a. Total number and percentage of governance body members that the organization's anti-corruption policies and procedures have been communicated to, broken down by region. b. Total number and percentage of employees that the organization's anti-corruption policies and procedures have been communicated to, broken down by employee category and region. c. Total number and percentage of business partners that the organization's anti-corruption policies and procedures have been communicated to, broken down by type of business partner and region. Describe if the organization's anti-corruption policies and procedures have been communicated to any other persons or ganizations. d. Total number and percentage of governance body members that have received training on anti-corruption, broken down by region. e. Total number and percentage of employees that have received training on anti-corruption, broken down by employee category and region.	Governance（p53-55 Anti-corruption）
205-3	Confirmed incidents of corruption and actions taken	a. Total number and nature of confirmed incidents of corruption. b. Total number of confirmed incidents in which employees were dismissed or disciplined for corruption. c. Total number of confirmed incidents when contracts with business partners were terminated or not renewed due to violations related to corruption. d. Public legal cases regarding corruption brought against the organization or its employees during the reporting period and the outcomes of such cases.	—
GRI206 : Anti-competitive Behavior 2016			
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	a. Number of legal actions pending or completed during the reporting period regarding anti-competitive behavior and violations of anti-trust and monopoly legislation in which the organization has been identified as a participant. b. Main outcomes of completed legal actions, including any decisions or judgments.	—
ENVIRONMENTAL			
GRI301 : Materials 2016			
301-1	Materials used by weight or volume	a. Total weight or volume of materials that are used to produce and package the organization's primary products and services during the reporting period, by: i. non-renewable materials used; ii. renewable materials used.	Environment（environmental Protection p85 Conserving Resources and Managing Waste）
301-2	Recycled input materials used	a. Percentage of recycled input materials used to manufacture the organization's primary products and services.	Environmental Activities : Supplementary Data (p102 Waste Disposal Flow Chart and Results)
301-3	Reclaimed products and their packaging materials	a. Percentage of reclaimed products and their packaging materials for each product category. b. How the data for this disclosure have been collected.	—
GRI302 : Energy 2016			
302-1	Energy consumption within the organization	a. Total fuel consumption within the organization from non-renewable sources, in joules or multiples, and including fuel types used. b. Total fuel consumption within the organization from renewable sources, in joules or multiples, and including fuel types used. c. In joules, watt-hours or multiples, the total: i. electricity consumption ii. heating consumption iii. cooling consumption iv. steam consumption d. In joules, watt-hours or multiples, the total: i. electricity sold ii. heating sold iii. cooling sold iv. steam sold e. Total energy consumption within the organization, in joules or multiples. f. Standards, methodologies, assumptions, and/or calculation tools used. g. Source of the conversion factors used.	Environment（p72-80 Addressing climate change） Calculation Standards for Environmental and Social Data Indicators (p167-169)
302-2	Energy consumption outside of the organization	a. Energy consumption outside of the organization, in joules or multiples. b. Standards, methodologies, assumptions, and/or calculation tools used. c. Source of the conversion factors used.	Environment（p72-80 Addressing climate change）
302-3	Energy intensity	a. Energy intensity ratio for the organization. b. Organization-specific metric (the denominator) chosen to calculate the ratio. c. Types of energy included in the intensity ratio; whether fuel, electricity, heating, cooling, steam, or all. d. Whether the ratio uses energy consumption within the organization, outside of it, or both.	Environment（p72-80 Addressing climate change） Calculation Standards for Environmental and Social Data Indicators (p167-169)
302-4	Reduction of energy consumpticon	a. Amount of reductions in energy consumption achieved as a direct result of conservation and efficiency initiatives, in joules or multiples. b. Types of energy included in the reductions; whether fuel, electricity, heating, cooling, steam, or all. c. Basis for calculating reductions in energy consumption, such as base year or baseline, ncluding the rationale for choosing it. d. Standards, methodologies, assumptions, and/or calculation tools used.	Environment（p72-80 Addressing climate change） Calculation Standards for Environmental and Social Data Indicators (p167-169)

NO.	Disclosure	Reporting requirements	2019Corresponding part
302-5	Reductions in energy requirements of products and services	a. Reductions in energy requirements of sold products and services achieved during the reporting period, in joules or multiples. b. Basis for calculating reductions in energy consumption, such as base year or baseline, including the rationale for choosing it. c. Standards, methodologies, assumptions, and/or calculation tools used.	For a Sustainable Future (p21 Sustainability Promotion Activities / Performance (Non-Financial Highlights)) Environment（p72-80 Addressing climate change） Calculation Standards for Environmental and Social Data Indicators (p167-169)
GRI303 : Water and Effluents 2018			
303-1	Interactions with water as a shared resource	a. A description of how the organization interacts with water, including how and where water is withdrawn, consumed, and discharged, and the water-related impacts caused or contributed to, or directly linked to the organization's activities, products or services by a business relationship (e.g., impacts caused by runoff). b. A description of the approach used to identify water-related impacts, including the scope of assessments, their timeframe, and any tools or methodologies used. c. A description of how water-related impacts are addressed, including how the organization works with stakeholders to steward water as a shared resource, and how it engages with suppliers or customers with significant water-related impacts. d. An explanation of the process for setting any water-related goals and targets that are part of the organization's management approach, and how they relate to public policy and the local context of each area with water stress.	Environment（environmental Protection p85 Conserving Resources and Managing Waste） Calculation Standards for Environmental and Social Data Indicators (p167-169)
303-2	Management of water discharge-related impacts	a. A description of any minimum standards set for the quality of effluent discharge, and how these minimum standards were determined, including: i. how standards for facilities operating in locations with no local discharge requirements were determined; ii. any internally developed water quality standards or guidelines; iii. any sector-specific standards considered; iv. whether the profile of the receiving waterbody was considered.	Environment（environmental Protection p84 Protecting Aquatic Environments）
303-3	Water withdrawal	a. Total water withdrawal from all areas in megaliters, and a breakdown of this total by the following sources, if applicable: i. Surface water; ii. Groundwater; iii. Seawater; iv. Produced water; v. Third-party water. b. Total water withdrawal from all areas with water stress in megaliters, and a breakdown of this total by the following sources, if applicable: i. Surface water; ii. Groundwater; iii. Seawater; iv. Produced water; v. Third-party water, and a breakdown of this total by the withdrawal sources listed in i-iv. c. A breakdown of total water withdrawal from each of the sources listed in Disclosures 303-3-a and 303-3-b in megaliters by the following categories: i. Freshwater (≤1,000 mg/L Total Dissolved Solids); ii. Other water (>1,000 mg/L Total Dissolved Solids). d. Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used.	Environment（environmental Protection p85 Conserving Resources and Managing Waste） Calculation Standards for Environmental and Social Data Indicators (p167-169)
303-4	Water discharge	a. Total water discharge to all areas in megaliters, and a breakdown of this total by the following types of destination, if applicable: i. Surface water; ii. Groundwater; iii. Seawater; iv. Third-party water, and the volume of this total sent for use to other organizations, if aplicable. b. A breakdown of total water discharge to all areas in megaliters by the following categories: i. Freshwater (≤1,000 mg/L Total Dissolved Solids); ii. Other water (>1,000 mg/L Total Dissolved Solids). c. Total water discharge to all areas with water stress in megaliters, and a breakdown of this total by the following categories: i. Freshwater (≤1,000 mg/L Total Dissolved Solids); ii. Other water (>1,000 mg/L Total Dissolved Solids). d. Priority substances of concern for which discharges are treated, including: i. how priority substances of concern were defined, and any international standard, authoritative list, or criteria used; ii. the approach for setting discharge limits for priority substances of concern; iii. number of incidents of non-compliance with discharge limits. e. Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used.	Environmental Activities : Supplementary Data (p90-92 environmental performance) Calculation Standards for Environmental and Social Data Indicators (p167-169)

NO.	Disclosure	Reporting requirements	2019Corresponding part
303-5	Water consumption	a. Total water consumption from all areas in megaliters. b. Total water consumption from all areas with water stress in megaliters. c. Change in water storage in megaliters, if water storage has been identified as having a significant water-related impact. d. Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used, including whether the information is calculated, estimated, modeled, or sourced from direct measurements, and the approach taken for this, such as the use of any sector-specific factors.	Environmental Activities : Supplementary Data (p90-92 environmental performance) Calculation Standards for Environmental and Social Data Indicators (p167-169)
GRI304 : Biodiversity 2016			
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	a. For each operational site owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas, the following information: i. Geographic location; ii. Subsurface and underground land that may be owned, leased, or managed by the organization; iii. Position in relation to the protected area (in the area, adjacent to, or containing portions of the protected area) or the high biodiversity value area outside protected areas; iv. Type of operation (office, manufacturing or production, or extractive); v. Size of operational site in km2 (or another unit, if appropriate) vi. Biodiversity value characterized by the attribute of the protected area or area of high biodiversity value outside the protected area (terrestrial, freshwater, or maritime ecosystem); vii. Biodiversity value characterized by listing of protected status (such as IUCN Protected Area Management Categories, Ramsar Convention, national legislation).	—
304-2	Significant impacts of activities, products, and services on biodiversity	a. Nature of significant direct and indirect impacts on biodiversity with reference to one or more of the following: i. Construction or use of manufacturing plants, mines, and transport infrastructure; ii. Pollution (introduction of substances that do not naturally occur in the habitat from point and non-point sources); iii. Introduction of invasive species, pests, and pathogens; iv. Reduction of species; v. Habitat conversion; vi. Changes in ecological processes outside the natural range of variation (such as salinity or changes in groundwater level). b. Significant direct and indirect positive and negative impacts with reference to the following: i. Species affected; ii. Extent of areas impacted; iii. Duration of impacts; iv. Reversibility or irreversibility of the impacts.	—
304-3	Habitats protected or restored	a. Size and location of all habitat areas protected or restored, and whether the success of the restoration measure was or is approved by independent external professionals. b. Whether partnerships exist with third parties to protect or restore habitat areas distinct from where the organization has overseen and implemented restoration or protection measures. c. Status of each area based on its condition at the close of the reporting period. d. Standards, methodologies, and assumptions used.	—
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	a. Total number of IUCN Red List species and national conservation list species with habitats in areas affected by the operations of the organization, by level of extinction risk: i. Critically endangered ii. Endangered iii. Vulnerable iv. Near threatened v. Least concern	—
GRI305 : Emissions 2016			
305-1	Direct (Scope 1) GHG missions	a. Gross direct (Scope 1) GHG emissions in metric tons of CO2 equivalent. b. Gases included in the calculation; whether CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, or all. c. Biogenic CO2 emissions in metric tons of CO2 equivalent. d. Base year for the calculation, if applicable, including: i. the rationale for choosing it; ii. emissions in the base year; iii. the context for any significant changes in emissions that triggered recalculations of base year emissions. e. Source of the emission factors and the global warming potential (GWP) rates used, or a reference to the GWP source. f. Consolidation approach for emissions; whether equity share, financial control, or operational control. g. Standards, methodologies, assumptions, and/or calculation tools used.	Environment（p72-80 Addressing climate change） Environmental Activities : Supplementary Data (p88-89 Addressing climate change) Calculation Standards for Environmental and Social Data Indicators (p167-169)

NO.	Disclosure	Reporting requirements	2019Corresponding part
305-2	Energy indirect (Scope 2) GHG emissions	a. Gross location-based energy indirect (Scope 2) GHG emissions in metric tons of CO2 equivalent. b. If applicable, gross market-based energy indirect (Scope 2) GHG emissions in metric tons of CO2 equivalent. c. If available, the gases included in the calculation; whether CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, or all. d. Base year for the calculation, if applicable, including: i. the rationale for choosing it; ii. emissions in the base year; iii. the context for any significant changes in emissions that triggered recalculations of base year emissions. e. Source of the emission factors and the global warming potential (GWP) rates used, or a reference to the GWP source. f. Consolidation approach for emissions; whether equity share, financial control, or operational control. g. Standards, methodologies, assumptions, and/or calculation tools used.	Environment（p72-80 Addressing climate change） Environmental Activities : Supplementary Data (p88-89 Addressing climate change) Calculation Standards for Environmental and Social Data Indicators (p167-169)
305-3	Other indirect (Scope 3) GHG emissions	a. Gross other indirect (Scope 3) GHG emissions in metric tons of CO2 equivalent. b. If available, the gases included in the calculation; whether CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, or all. c. Biogenic CO2 emissions in metric tons of CO2 equivalent. d. Other indirect (Scope 3) GHG emissions categories and activities included in the calculation. e. Base year for the calculation, if applicable, including: i. the rationale for choosing it; ii. emissions in the base year; iii. the context for any significant changes in emissions that triggered recalculations of base year emissions. f. Source of the emission factors and the global warming potential (GWP) rates used, or a reference to the GWP source. g. Standards, methodologies, assumptions, and/or calculation tools used.	Environment（p72-80 Addressing climate change） Environmental Activities : Supplementary Data (p88-89 Addressing climate change) Calculation Standards for Environmental and Social Data Indicators (p167-169)
305-4	GHG emissions intensity	a. GHG emissions intensity ratio for the organization. b. Organization-specific metric (the denominator) chosen to calculate the ratio. c. Types of GHG emissions included in the intensity ratio; whether direct (Scope 1), energy indirect (Scope 2), and/or other indirect (Scope 3). d. Gases included in the calculation; whether CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, or all.	Environment（p72-80 Addressing climate change） Calculation Standards for Environmental and Social Data Indicators (p167-169)
305-5	Reduction of GHG emissions	a. GHG emissions reduced as a direct result of reduction initiatives, in metric tons of CO2 equivalent. b. Gases included in the calculation; whether CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, or all. c. Base year or baseline, including the rationale for choosing it. d. Scopes in which reductions took place; whether direct (Scope 1), energy indirect (Scope 2), and/or other indirect (Scope 3). e. Standards, methodologies, assumptions, and/or calculation tools used.	Environment（p72-80 Addressing climate change） Calculation Standards for Environmental and Social Data Indicators (p167-169)
305-6	Emissions of ozone-depleting substances (ODS)	a. Production, imports, and exports of ODS in metric tons of CFC-11 (trichlorofluoromethane) equivalent. b. Substances included in the calculation. c. Source of the emission factors used. d. Standards, methodologies, assumptions, and/or calculation tools used.	Environment（environmental Protection p83 Protecting the Atmospheric Environment） Environmental Activities : Supplementary Data (p96 Prevention of Ozone Layer epletion) Calculation Standards for Environmental and Social Data Indicators (p167-169)
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	a. Significant air emissions, in kilograms or multiples, for each of the following: i. NOx ii. SOx iii. Persistent organic pollutants（POP） iv. Volatile organic compounds（VOC） v. Hazardous air pollutants（HAP） vi. Particulate matter（PM） vii. Other standard categories of air emissions identified in relevant regulations b. Source of the emission factors used. c. Standards, methodologies, assumptions, and/or calculation tools used.	Environment（environmental Protection p82 Environmental Performance） Environmental Activities : Supplementary Data (p93 Preventing Pollution Atmospheric Emissions of SOx, NOx, Soot, and Dust) Calculation Standards for Environmental and Social Data Indicators (p167-169)
GRI306 : Effluents and Waste 2016			
306-1	Water discharge by quality and destination	a. Total volume of planned and unplanned water discharges by: i. destination; ii. quality of the water, including treatment method; iii. whether the water was reused by another organization. b. Standards, methodologies, and assumptions used.	Environment（environmental Protection p82 Environmental Performance） Environmental Activities : Supplementary Data (p90-108 Environmental Protection) Calculation Standards for Environmental and Social Data Indicators (p167-169)

NO.	Disclosure	Reporting requirements	2019Corresponding part
306-2	Waste by type and disposal method	a. Total weight of hazardous waste, with a breakdown by the following disposal methods where applicable: i. Reuse ii. Recycling iii. Composting iv. Recovery, including energy recovery v. Incineration (mass burn) vi. Deep well injection vii. Landfill viii.On-site storage ix. Other (to be specified by the organization) b. Total weight of non-hazardous waste, with a breakdown by the following disposal methods where applicable: i. Reuse ii. Recycling iii. Composting iv. Recovery, including energy recovery v. Incineration (mass burn) vi. Deep well injection vii. Landfill viii. On-site storage ix. Other (to be specified by the organization) c. How the waste disposal method has been determined: i. Disposed of directly by the organization, or otherwise directly confirmed ii. Information provided by the waste disposal contractor iii. Organizational defaults of the waste disposal contractor	Environment（environmental Protection p85 Conserving Resources and Managing Waste） Environmental Activities : Supplementary Data (p90-108 Environmental Protection) Calculation Standards for Environmental and Social Data Indicators (p167-169)
306-3	Significant spills	a. Total number and total volume of recorded significant spills. b.The following additional information for each spill that was reported in the organization's financial statements: i. Location of spill; ii. Volume of spill; iii. Material of spill, categorized by: oil spills (soil or water surfaces), fuel spills (soil or water surfaces), spills of wastes (soil or water surfaces), spills of chemicals (mostly soil or water surfaces), and other (to be specified by the organization). c. Impacts of significant spills.	Environment（p70-71 Environmental Activity Goals and Results）
306-4	Transport of hazardous waste	a. Total weight for each of the following: i. Hazardous waste transported ii. Hazardous waste imported iii. Hazardous waste exported iv. Hazardous waste treated b. Percentage of hazardous waste shipped internationally c. Standards, methodologies, and assumptions used.	Environmental Activities : Supplementary Data (p100 Industrial Waste Reduction, p97-99 the PRTR Act) Calculation Standards for Environmental and Social Data Indicators (p167-169)
306-5	Water bodies affected by water discharges and/or runoff	a. Water bodies and related habitats that are significantly affected by water discharges and/or runoff, including information on: i. the size of the water body and related habitat; ii. whether the water body and related habitat is designated as a nationally or internationally protected area; iii. the biodiversity value, such as total number of protected species.	—
GRI307 : Environmental Compliance 2016			
307-1	Non-compliance with environmental laws and regulations	a. Significant fines and non-monetary sanctions for non-compliance with environmental laws and/or regulations in terms of: i. total monetary value of significant fines; ii. total number of non-monetary sanctions; iii. cases brought through dispute resolution mechanisms. b. If the organization has not identified any non-compliance with environmental laws and/or regulations, a brief statement of this fact is sufficient.	Environmental Activities : Supplementary Data (p92 Compliance with Environmental Laws and Regulations)
GRI308 : Supplier Environmental Assessment 2016			
308-1	New suppliers that were screened using environmental criteria	a. Percentage of new suppliers that were screened using environmental criteria.	Society（p117-120 Procurement）
308-2	Negative environmental impacts in the supply chain and actions taken	a. Number of suppliers assessed for environmental impacts. b. Number of suppliers identified as having significant actual and potential negative environmental impacts. c. Significant actual and potential negative environmental impacts identified in the supply chain. d. Percentage of suppliers identified as having significant actual and potential negative environmental impacts with which improvements were agreed upon as a result of assessment. e. Percentage of suppliers identified as having significant actual and potential negative environmental impacts with which relationships were terminated as a result of assessment, and why.	Society（p117-120 Procurement）

NO.	Disclosure	Reporting requirements	2019Corresponding part
SOCIAL			
GRI401 : Employment 2016			
401-1	New employee hires and employee turnover	a. Total number and rate of new employee hires during the reporting period, by age group, gender and region. b. Total number and rate of employee turnover during the reporting period, by age group, gender and region.	Social Activities : Supplementary Data (p156-158 Basic Data)
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	a. Benefits which are standard for full-time employees of the organization but are not provided to temporary or part-time employees, by significant locations of operation. These include, as a minimum: i. life insurance; ii. health care; iii. disability and invalidity coverage; iv. parental leave; v. retirement provision; vi. stock ownership; vii. others. b. The definition used for 'significant locations of operation'.	Society (Human Resources Management p129-131 Promoting Work-Life Balance)
401-3	Parental leave	a. Total number of employees that were entitled to parental leave, by gender. b. Total number of employees that took parental leave, by gender. c. Total number of employees that returned to work in the reporting period after parental leave ended, by gender. d. Total number of employees that returned to work after parental leave ended that were still employed 12 months after their return to work, by gender. e. Return to work and retention rates of employees that took parental leave, by gender.	Social Activities : Supplementary Data (p159 Diversity and Inclusion)
GRI402 : Labor/Management Relations 2016			
402-1	Minimum notice periods regarding operational changes	a. Minimum number of weeks' notice typically provided to employees and their representatives prior to the implementation of significant operational changes that could substantially affect them. b. For organizations with collective bargaining agreements, report whether the notice period and provisions for consultation and negotiation are specified in collective agreements.	—
GRI403 : Occupational Health and Safety 2018			
403-1	Occupational health and safety management system	a. A statement of whether an occupational health and safety management system has been implemented, including whether: i. the system has been implemented because of legal requirements and, if so, a list of the requirements; ii. the system has been implemented based on recognized risk management and/or management system standards/guidelines and, if so, a list of the standards/guidelines. b. A description of the scope of workers, activities, and workplaces covered by the occupational health and safety management system, and an explanation of whether and, if so, why any workers, activities, or workplaces are not covered.	Society (Occupational Safety and Health /Industrial Safety and Disaster Prevention p134-136 Occupational Safety and Health) Social Activities : Supplementary Data (p160-163 Occupational Safety and Health /Industrial Safety and Disaster Prevention)
403-2	Hazard identification, risk assessment, and incident investigation	a. A description of the processes used to identify work-related hazards and assess risks on a routine and non-routine basis, and to apply the hierarchy of controls in order to eliminate hazards and minimize risks, including: i. how the organization ensures the quality of these processes, including the competency of persons who carry them out; ii. how the results of these processes are used to evaluate and continually improve the occupational health and safety management system. b. A description of the processes for workers to report work-related hazards and hazardous situations, and an explanation of how workers are protected against reprisals. c. A description of the policies and processes for workers to remove themselves from work situations that they believe could cause injury or ill health, and an explanation of how workers are protected against reprisals. d. A description of the processes used to investigate work-related incidents, including the processes to identify hazards and assess risks relating to the incidents, to determine corrective actions using the hierarchy of controls, and to determine improvements needed in the occupational health and safety management system.	Society (p134-140 Occupational Safety and Health /Industrial Safety and Disaster Prevention)
403-3	Occupational health services	a. A description of the occupational health services' functions that contribute to the identification and elimination of hazards and minimization of risks, and an explanation of how the organization ensures the quality of these services and facilitates workers' access to them.	Governance(p56-63 Responsible Care)
403-4	Worker participation, consultation, and communication on occupational health and safety	a. A description of the processes for worker participation and consultation in the development, implementation, and evaluation of the occupational health and safety management system, and for providing access to and communicating relevant information on occupational health and safety to workers. b. Where formal joint management–worker health and safety committees exist, a description of their responsibilities, meeting frequency, decision-making authority, and whether and, if so, why any workers are not represented by these committees.	Society (p134-140 Occupational Safety and Health /Industrial Safety and Disaster Prevention)

NO.	Disclosure	Reporting requirements	2019Corresponding part
403-5	Worker training on occupational health and safety	a. A description of any occupational health and safety training provided to workers, including generic training as well as training on specific work-related hazards, hazardous activities, or hazardous situations.	Society（p134-140 Occupational Safety and Health /Industrial Safety and Disaster Prevention）
403-6	Promotion of worker health	a. An explanation of how the organization facilitates workers' access to non-occupational medical and healthcare services, and the scope of access provided. b. A description of any voluntary health promotion services and programs offered to workers to address major non-work-related health risks, including the specific health risks addressed, and how the organization facilitates workers' access to these services and programs.	Society（Human Resources Management p132-133 Healthcare）
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	a. A description of the organization's approach to preventing or mitigating significant negative occupational health and safety impacts that are directly linked to its operations, products or services by its business relationships, and the related hazards and risks.	Society（Occupational Safety and Health /Industrial Safety and Disaster Prevention p140 Initiatives for Ensuring Safety in Logistics Operations） Society（p141-146 Product Stewardship / Product Safety / Quality Assurance)
403-8	Workers covered by an occupational health and safety management system	a. If the organization has implemented an occupational health and safety management system based on legal requirements and/or recognized standards/guidelines: i. the number and percentage of all employees and workers who are not employees but whose work and/or workplace is controlled by the organization, who are covered by such a system; ii. the number and percentage of all employees and workers who are not employees but whose work and/or workplace is controlled by the organization, who are covered by such a system that has been internally audited; iii. the number and percentage of all employees and workers who are not employees but whose work and/or workplace is controlled by the organization, who are covered by such a system that has been audited or certified by an external party. b. Whether and, if so, why any workers have been excluded from this disclosure, including the types of worker excluded. c. Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used.	Society（p134-140 Occupational Safety and Health /Industrial Safety and Disaster Prevention） Governance(p56-63 Responsible Care)
403-9	Work-related injuries	a. For all employees: i. The number and rate of fatalities as a result of work-related injury; ii. The number and rate of high-consequence work-related injuries (excluding fatalities); iii. The number and rate of recordable work-related injuries; iv. The main types of work-related injury; v. The number of hours worked. b. For all workers who are not employees but whose work and/or workplace is controlled by the organization: i. The number and rate of fatalities as a result of work-related injury; ii. The number and rate of high-consequence work-related injuries (excluding fatalities); iii. The number and rate of recordable work-related injuries; iv. The main types of work-related injury; v. The number of hours worked. c. The work-related hazards that pose a risk of high-consequence injury, including: i. how these hazards have been determined; ii. which of these hazards have caused or contributed to high-consequence injuries during the reporting period; iii. actions taken or underway to eliminate these hazards and minimize risks using the hierarchy of controls. d. Any actions taken or underway to eliminate other work-related hazards and minimize risks using the hierarchy of controls. e. Whether the rates have been calculated based on 200,000 or 1,000,000 hours worked. f. Whether and, if so, why any workers have been excluded from this disclosure, including the types of worker excluded. g. Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used.	Society（p134-140 Occupational Safety and Health /Industrial Safety and Disaster Prevention） Social Activities： Supplementary Data (p162 Safty Achievements)

NO.	Disclosure	Reporting requirements	2019Corresponding part
403-10	Work-related ill health	a. For all employees: i. The number of fatalities as a result of work-related ill health; ii. The number of cases of recordable work-related ill health; iii. The main types of work-related ill health. b. For all workers who are not employees but whose work and/or workplace is controlled by the organization: i. The number of fatalities as a result of work-related ill health; ii. The number of cases of recordable work-related ill health; iii. The main types of work-related ill health. c. The work-related hazards that pose a risk of ill health, including: i. how these hazards have been determined; ii. which of these hazards have caused or contributed to cases of ill health during the reporting period; iii. actions taken or underway to eliminate these hazards and minimize risks using the hierarchy of controls. d. Whether and, if so, why any workers have been excluded from this disclosure, including the types of worker excluded. e. Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used.	—
GRI404 : Training and Education 2016			
404-1	Average hours of training per year per employee	a. Average hours of training that the organization's employees have undertaken during the reporting period, by: i. gender; ii. employee category.	Society (p121-133 Human Resources Management)
404-2	Programs for upgrading employee skills and transition assistance programs	a. Type and scope of programs implemented and assistance provided to upgrade employee skills. b. Transition assistance programs provided to facilitate continued employability and the management of career endings resulting from retirement or termination of employment.	Society (p121-133 Human Resources Management)
404-3	Percentage of employees receiving regular performance and career development reviews	a. Percentage of total employees by gender and by employee category who received a regular performance and career development review during the reporting period.	Society (p121-133 Human Resources Management)
GRI405 : Diversity and Equal Opportunity 2016			
405-1	Diversity of governance bodies and employees	a. Percentage of individuals within the organization's governance bodies in each of the following diversity categories: i. Gender; ii. Age group: under 30 years old, 30-50 years old, over 50 years old; iii. Other indicators of diversity where relevant (such as minority or vulnerable roups). b. Percentage of employees per employee category in each of the following diversity categories: i. Gender; ii. Age group: under 30 years old, 30-50 years old, over 50 years old; iii. Other indicators of diversity where relevant (such as minority or vulnerable groups).	Governace : Supplementary Data (p67 Corporate Governance) Social Activities : Supplementary Data (p156-158 Basic Data)
405-2	Ratio of basic salary and remuneration of women to men	a. Ratio of the basic salary and remuneration of women to men for each employee category, by significant locations of operation. b. The definition used for 'significant locations of operation'.	Social Activities : Supplementary Data (p156-158 Basic Data)
GRI406 : Non-discrimination 2016			
406-1	Incidents of discrimination and corrective actions taken	a. Total number of incidents of discrimination during the reporting period. b. Status of the incidents and actions taken with reference to the following: i. Incident reviewed by the organization; ii. Remediation plans being implemented; iii. Remediation plans that have been implemented, with results reviewed through routine internal management review processes; iv. Incident no longer subject to action.	Society (p112-116 Respect for Human Rights)
GRI407 : Freedom of Association and Collective Bargaining 2016			
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	a. Operations and suppliers in which workers' rights to exercise freedom of association or collective bargaining may be violated or at significant risk either in terms of: i. type of operation (such as manufacturing plant) and supplier; ii. countries or geographic areas with operations and suppliers considered at risk. b. Measures taken by the organization in the reporting period intended to support rights to exercise freedom of association and collective bargaining.	Society (p112-116 Respect for Human Rights) Society (p117-120 Procurement)
GRI408 : Child Labor 2016			
408-1	Operations and suppliers at significant risk for incidents of child labor	a.Operations and suppliers considered to have significant risk for incidents of: i. child labor; ii. young workers exposed to hazardous work. b. Operations and suppliers considered to have significant risk for incidents of child labor either in terms of: i. type of operation (such as manufacturing plant) and supplier; ii. countries or geographic areas with operations and suppliers considered at risk. c. Measures taken by the organization in the reporting period intended to contribute to the effective abolition of child labor.	Society (p112-116 Respect for Human Rights) Society (p117-120 Procurement)

NO.	Disclosure	Reporting requirements	2019Corresponding part
GRI409 : Forced or Compulsory Labor 2016			
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	a. Operations and suppliers considered to have significant risk for incidents of forced or compulsory labor either in terms of: i. type of operation (such as manufacturing plant) and supplier; ii. countries or geographic areas with operations and suppliers considered at risk. b. Measures taken by the organization in the reporting period intended to contribute to the elimination of all forms of forced or compulsory labor.	Society (p112-116 Respect for Human Rights) Society (p117-120 Procurement)
GRI410 : Security Practices 2016			
410-1	Security personnel trained in human rights policies or procedures	a. Percentage of security personnel who have received formal training in the organization's human rights policies or specific procedures and their application to security. b. Whether training requirements also apply to third-party organizations providing security personnel.	—
GRI411 : Rights of Indigenous Peoples 2016			
411-1	Incidents of violations involving rights of indigenous peoples	a. Total number of identified incidents of violations involving the rights of indigenous peoples during the reporting period. b. Status of the incidents and actions taken with reference to the following: i. Incident reviewed by the organization; ii. Remediation plans being implemented; iii. Remediation plans that have been implemented, with results reviewed through routine internal management review processes; iv. Incident no longer subject to action	Not applicable
GRI412 : Human Rights Assessment 2016			
412-1	Operations that have been subject to human rights reviews or impact assessments	a. Total number and percentage of operations that have been subject to human rights reviews or human rights impact assessments, by country.	Society (p112-116 Respect for Human Rights)
412-2	Employee training on human rights policies or procedures	a. Total number of hours in the reporting period devoted to training on human rights policies or procedures concerning aspects of human rights that are relevant to operations. b. Percentage of employees trained during the reporting period in human rights policies or procedures concerning aspects of human rights that are relevant to operations.	Society (p112-116 Respect for Human Rights)
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	a. Total number and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening. b. The definition used for 'significant investment agreements'.	—
GRI413 : Local Communities 2016			
413-1	Operations with local community engagement, impact assessments, and development programs	a. Percentage of operations with implemented local community engagement, impact assessments, and/or development programs, including the use of: i. social impact assessments, including gender impact assessments, based on participatory processes; ii. environmental impact assessments and ongoing monitoring; iii. public disclosure of results of environmental and social impact assessments; iv. local community development programs based on local communities' needs; v. stakeholder engagement plans based on stakeholder mapping; vi. broad based local community consultation committees and processes that include vulnerable groups; vii. works councils, occupational health and safety committees and other worker representation bodies to deal with impacts; viii. formal local community grievance processes	Society (Local Communities p151-152 Assuring Safety, the Environment, and Health)
413-2	Operations with significant actual and potential negative impacts on local communities	a. Operations with significant actual and potential negative impacts on local communities, including: i. the location of the operations; ii. the significant actual and potential negative impacts of operations.	—
GRI414 : Supplier Social Assessment 2016			
414-1	New suppliers that were screened using social criteria	a. Percentage of new suppliers that were screened using social criteria.	Society (p117-120 Procurement)
414-2	Negative social impacts in the supply chain and actions taken	a. Number of suppliers assessed for social impacts. b. Number of suppliers identified as having significant actual and potential negative social impacts. c. Significant actual and potential negative social impacts identified in the supply chain. d. Percentage of suppliers identified as having significant actual and potential negative social impacts with which improvements were agreed upon as a result of assessment. e. Percentage of suppliers identified as having significant actual and potential negative social impacts with which relationships were terminated as a result of assessment, and why.	Society (p117-120 Procurement)
GRI415 : Public Policy 2016			
415-1	Political contributions	a. Total monetary value of financial and in-kind political contributions made directly and indirectly by the organization by country and recipient/beneficiary. b. If applicable, how the monetary value of in-kind contributions was estimated.	—

NO.	Disclosure	Reporting requirements	2019Corresponding part
GRI416 : Customer Health and Safety 2016			
416-1	Assessment of the health and safety impacts of product and service categories	a. Percentage of significant product and service categories for which health and safety impacts are assessed for improvement.	Society (p141-146 Product Stewardship / Product Safety / Quality Assurance)
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	a. Total number of incidents of non-compliance with regulations and/or voluntary codes concerning the health and safety impacts of products and services within the reporting period, by: i. incidents of non-compliance with regulations resulting in a fine or penalty; ii. incidents of non-compliance with regulations resulting in a warning; iii. incidents of non-compliance with voluntary codes. b. If the organization has not identified any non-compliance with regulations and/or voluntary codes, a brief statement of this fact is sufficient.	Society (p141-146 Product Stewardship / Product Safety / Quality Assurance)
GRI417 : Marketing and Labeling 2016			
417-1	Requirements for product and service information and labeling	a. Whether each of the following types of information is required by the organization's procedures for product and service information and labeling: i. The sourcing of components of the product or service; ii. Content, particularly with regard to substances that might produce an nvironmental or social impact; iii. Safe use of the product or service; iv. Disposal of the product and environmental or social impacts; v. Other (explain). b. Percentage of significant product or service categories covered by and assessed for compliance with such procedures.	Society (p147-148 Responsibility to Our Customers)
417-2	Incidents of non-compliance concerning product and service information and labeling	a. Total number of incidents of non-compliance with regulations and/or voluntary codes concerning product and service information and labeling, by: i. incidents of non-compliance with regulations resulting in a fine or penalty; ii. incidents of non-compliance with regulations resulting in a warning; iii. incidents of non-compliance with voluntary codes. b. If the organization has not identified any non-compliance with regulations and/or voluntary codes, a brief statement of this fact is sufficient.	—
417-3	Incidents of non-compliance concerning marketing communications	a. Total number of incidents of non-compliance with regulations and/or voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by: i. incidents of non-compliance with regulations resulting in a fine or penalty; ii. incidents of non-compliance with regulations resulting in a warning; iii. incidents of non-compliance with voluntary codes. b. If the organization has not identified any non-compliance with regulations and/or voluntary codes, a brief statement of this fact is sufficient.	—
GRI418 : Customer Privacy 2016			
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	a. Total number of substantiated complaints received concerning breaches of customer privacy, categorized by: i. complaints received from outside parties and substantiated by the organization; ii. complaints from regulatory bodies. b. Total number of identified leaks, thefts, or losses of customer data. c. If the organization has not identified any substantiated complaints, a brief statement of this fact is sufficient	—
GRI419 : Socioeconomic Compliance 2016			
419-1	Non-compliance with laws and regulations in the social and economic area	a. Significant fines and non-monetary sanctions for non-compliance with laws and/or regulations in the social and economic area in terms of: i. total monetary value of significant fines; ii. total number of non-monetary sanctions; iii. cases brought through dispute resolution mechanisms. b. If the organization has not identified any non-compliance with laws and/or regulations, a brief statement of this fact is sufficient. c. The context against which significant fines and non-monetary sanctions were incurred.	Governance:Supplementary Data (p68 Compliance)