# Environmental Activities: Supplementary Data

## 1 Addressing Climate Change

### Reducing Greenhouse Gas Emissions

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

(Thousand tons of $CO_2e$)

| | | FY2013 | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 |
|---|---|---|---|---|---|---|---|---|
| $CO_2$ | Energy sources | 3,357 | 3,347 | 2,559 | 2,405 | 2,454 | 2,543 | 2,722 |
| | From other than energy use | 63 | 65 | 55 | 50 | 93 | 155 | 142 |
| Methane ($CH_4$) | | — | — | — | — | — | — | — |
| Nitrous oxide ($N_2O$) | | 63 | 76 | 65 | 45 | 35 | 23 | 15 |
| Hydrofluorocarbon (HFC) | | — | — | — | — | — | — | 4 |
| 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

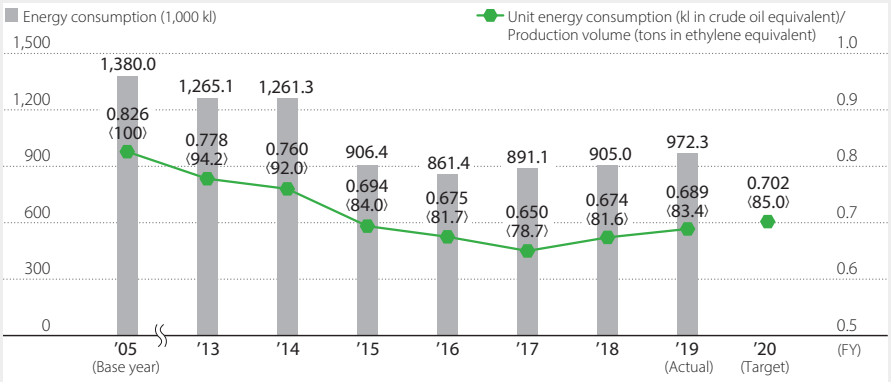
## Energy Saving

### FY2019 Breakdown of Unit Energy Consumption (Sumitomo Chemical)

| | 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 | 491.2 | 760.2 | 0.647 |
| Chiba Works | 352.1 | 438.0 | 0.804 |
| Osaka Works | 23.4 | 17.2 | 1.359 |
| Oita Works* | 61.3 | 64.9 | 0.944 |
| Misawa Works | 9.8 | 7.9 | 1.236 |
| Ohe Works | 34.6 | 122.6 | 0.282 |
| Total | 972.3 | 1,410.9 | 0.689 <83.4% compared with FY2005> |

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)




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 15% by fiscal 2020 compared to fiscal 2005 levels (Improve 1% per year on average)<br>Improve unit $CO_2$ emissions from energy use 15% by fiscal 2020 compared to fiscal 2005 levels (Improve 1% per year on average) |
| Results | Energy consumption totaled 972.3 thousand kl in crude oil equivalent in fiscal 2019.<br>In fiscal 2019, unit energy consumption worsened 2.3% compared with fiscal 2018 and improved 16.6% compared with fiscal 2005.<br>Unit $CO_2$ emissions from energy use worsened 2.0% compared with fiscal 2018 and improved 14.1% compared with fiscal 2005. |

### FY2019 Energy Consumption and $CO_2$ Emissions (Sumitomo Chemical and Group Companies in Japan (All worksites))

| | Energy consumption (1,000 kl in crude oil equivalent) | $CO_2$ emissions from energy use (1,000 tons) |
|---|---|---|
| Sumitomo Chemical | 986 | 2,722 |
| Works | 972 | 2,696 |
| Non-manufacturing sites including the Head Offices and Research Laboratories | 14 | 26 |
| Sumitomo Chemical and Group companies in Japan | 1,716 | 5,051 |
| Works | 1,687 | 4,994 |
| Non-manufacturing sites including the Head Offices and Research Laboratories | 30 | 56 |

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).

■ FY2017–2019 Environmental Performance (Sumitomo Chemical and Group Companies in Japan)

**INPUT** Energy and Resources

Water

(Million tons)

| | FY2017 | FY2018 | FY2019★ |
|---|---|---|---|
| Industrial water | 67.2 | 63.1 | 63.4 |
| Drinking water | 0.9 | 0.8 | 0.8 |
| Seawater | 930.3 | 848.1 | 918.2 |
| Groundwater | 25.5 | 22.7 | 21.8 |
| Other water | 2.5 | 2.4 | 2.2 |
| Total | 1,026.4 | 937.1 | 1,006.4 |

Energy
Calculated as kl of crude oil

(Thousand kl)

| | FY2017 | FY2018 | FY2019★ |
|---|---|---|---|
| Fuel, heat, and electricity*1 | 1,837 | 1,690 | 1,720 |

Exhaustible Resources

(Thousand tons)

| | FY2017 | FY2018 | FY2019 |
|---|---|---|---|
| Hydrocarbon compounds | 1,835 | 1,676 | 1,829 |
| Metals (excluding minor metals)*2 | 120 | 121 | 109 |
| Minor metals*3 | 10.17 | 13.54 | 11.20 |

PCB/CFCs under Secure Storage

| | FY2017 | FY2018 | FY2019 |
|---|---|---|---|
| No. of electrical devices containing high concentrations of PCBs*4 | 58 | 10 | 13 |
| PCB volume (pure equivalent) (kl)*4 | 1.0 | 0.1 | 0.1 |
| No. of refrigeration units using specified CFCs as a coolant | 48 | 32 | 32 |
| No. of refrigeration units using HCFCs as a coolant | 262 | 272 | 260 |

Note: The number of companies included in the boundary of calculation for the environmental performance data on page 121 is as follows for each year.
FY2017: Sumitomo Chemical and Group companies in Japan: 21 companies
FY2018: Sumitomo Chemical and Group companies in Japan: 21 companies
FY2019: 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 208 "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)

| | FY2017 | FY2018 | FY2019★ |
|---|---|---|---|
| (Calculated on the basis of ethylene production)*1 | 2,602 | 2,490 | 2,521 |

### Water Pollutant Emissions

(Tons)

| | | FY2017 | FY2018 | FY2019★ |
|---|---|---|---|---|
| COD | Coastal waters/waterways | 998 | 998 | 887 |
| | Sewer systems | 234 | 216 | 197 |
| Phosphorus | Coastal waters/waterways | 32 | 35 | 30.5 |
| | Sewer systems | 6 | 5 | 4.7 |
| Nitrogen | Coastal waters/waterways | 1,442 | 1,488 | 1,457 |
| | Sewer systems | 72 | 96 | 53.3 |
| Substances subject to the PRTR Act | | 45 | 13 | 8.0 |

### Water Discharge

(Million tons)

| | FY2017 | FY2018 | FY2019 |
|---|---|---|---|
| Total amount of water discharge | 987 | 911 | 980 |

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

### Waste Materials

(Thousand tons)

| | FY2017 | FY2018 | FY2019★ |
|---|---|---|---|
| Waste emissions*2 | 261 | 244 | 232 |
| Landfill*2 | 21 | 23 | 22 |
| (Breakdown) | | | |
| On-site landfill | 0 | 0 | 0 |
| External landfill | 21 | 23 | 22 |

Note: The number of companies included in the boundary of calculation for the environmental performance data on page 122 is as follows for each year.
FY2017: Sumitomo Chemical and Group companies in Japan: 21 companies
FY2018: Sumitomo Chemical and Group companies in Japan: 21 companies
FY2019: 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 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.

# Environmental Activities: Supplementary Data

★: Assured by an independent assurance provider

## Atmospheric Emissions

(Thousand tons of $CO_2e$)

| | FY2017 | FY2018 | FY2019★ |
|---|---|---|---|
| Greenhouse gases (seven gases)*1 | 6,432 | 5,957 | 5,962 |
| Emissions from energy use ($CO_2$) | 5,611 | 5,172 | 5,209 |
| $CO_2$ emissions from other than energy use | 711 | 684 | 659 |
| $N_2O$ | 110 | 101 | 89 |
| HFC*2 | — | — | 4 |
| PFC*2 | — | — | — |
| $CH_4$*2 | — | — | — |
| $SF_6$*2 | — | — | — |
| $NF_3$*2 | — | — | — |

(Tons)

| | FY2017 | FY2018 | FY2019★ |
|---|---|---|---|
| Others | | | |
| NOx | 4,703 | 4,326 | 4,208 |
| SOx | 5,023 | 5,152 | 4,621 |
| Soot and dust | 247 | 222 | 192 |
| Substances subject to the PRTR Act*3 | 438 | 458 | 438 |

Note: The number of companies included in the boundary of calculation for the environmental performance data on page 123 is as follows for each year.
FY2017: Sumitomo Chemical and Group companies in Japan: 21 companies
FY2018: Sumitomo Chemical and Group companies in Japan: 21 companies
FY2019: 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 209 "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)

| | FY2017 | FY2018 | FY2019 |
|---|---|---|---|
| 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.; 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.; Sumika Polycarbonate Limited; 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

## 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, 2019 to March 31, 2020
(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 decreased year on year by 9.8 billion yen, and consolidated expenses increased by 2.7 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 | FY2018 | | | | FY2019 | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non-Consolidated | | Consolidated | | Non-Consolidated | | Consolidated | |
| | | | Investment | Expenses | Investment | Expenses | Investment | Expenses | Investment | Expenses |
| Facility Area Costs | | | 5.3 | 18.7 | 11.7 | 30.9 | 0.7 | 20.4 | 1.9 | 32.7 |
| Breakdown | Pollution Prevention Costs | Prevention of air pollution, water pollution, soil contamination, noise pollution, odors, ground subsidence, etc. (pages 126–127) | (4.9) | (13.6) | (7.9) | (18.5) | (0.5) | (15.2) | (1.3) | (19.6) |
| Breakdown | Global Environmental Protection Costs | Energy saving, prevention of global warming, ozone layer depletion, and other measures (pages120, 129) | (0) | (0.2) | (3.3) | (3.9) | (0) | (0.2) | (0.4) | (4.3) |
| Breakdown | Resource Recycling Costs | Resource saving, water saving and rainwater usage, waste reduction/disposal treatment, recycling, etc. (pages 115, 133) | (0.4) | (4.9) | (0.5) | (8.5) | (0.2) | (5.0) | (0.2) | (8.8) |
| 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. (page 138) | 0 | 0.7 | 0 | 1.4 | 0 | 0.8 | 0 | 1.4 |
| R&D Costs | | Development of products with attention to environmental safety, research into energy-saving processes, etc. (pages 36–40) | 0.1 | 6.6 | 0.1 | 6.7 | 0.1 | 7.4 | 0.1 | 7.5 |
| 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 | 0.7 | 0 | 0.5 | 0 | 0.8 |
| 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 | | | 5.4 | 26.5 | 11.8 | 40.0 | 0.8 | 29.1 | 2.0 | 42.7 |

# Environmental Activities: Supplementary Data

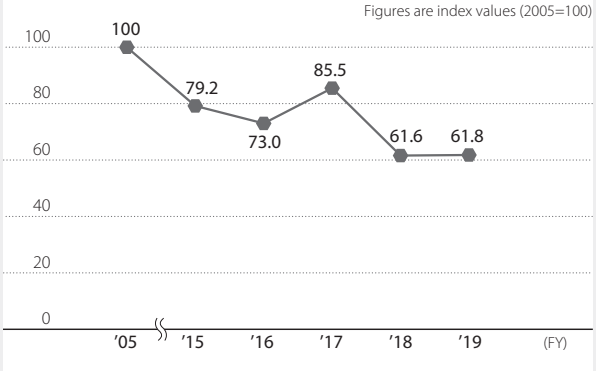
## Economic Effects

(Billion yen)

| Results | FY2018 | | FY2019 | |
|---|---|---|---|---|
| | Non-Consolidated | Consolidated | Non-Consolidated | Consolidated |
| Reduced costs through energy saving | 0.3 | 0.4 | 0.2 | 0.3 |
| Reduced costs through resource saving | 0.1 | 0.1 | 0.3 | 0.4 |
| Reduced costs through recycling activities | 2.7 | 2.8 | 2.8 | 3.0 |
| Total | 3.1 | 3.3 | 3.3 | 3.7 |

Note: Since the calculation standards have been changed, the data has been retroactively revised in previous fiscal years

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




In fiscal 2005, 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.

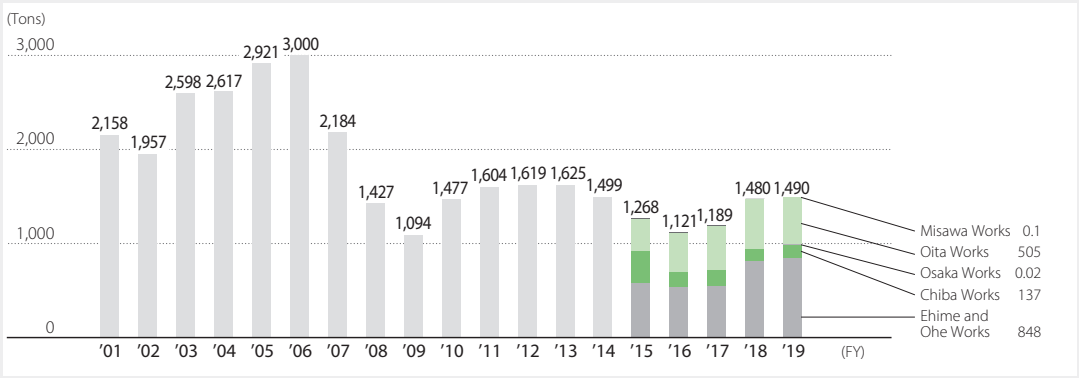
# Environmental Activities: Supplementary Data

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

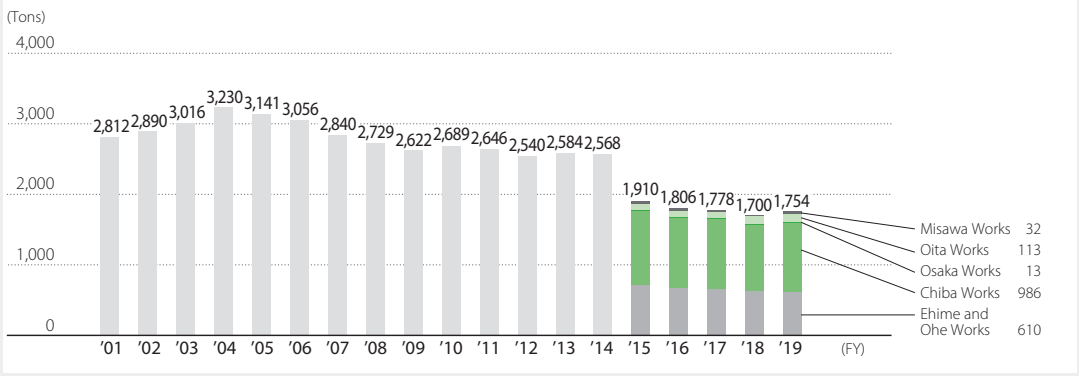
In 1970, Sumitomo Chemical achieved a marked reduction in the release of SOx, NOx, soot, and dust into the atmosphere, and continued to maintain low levels of emissions from 1980 to the present. Furthermore, the Company has concluded cooperative agreements with local municipal governments at each of 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.

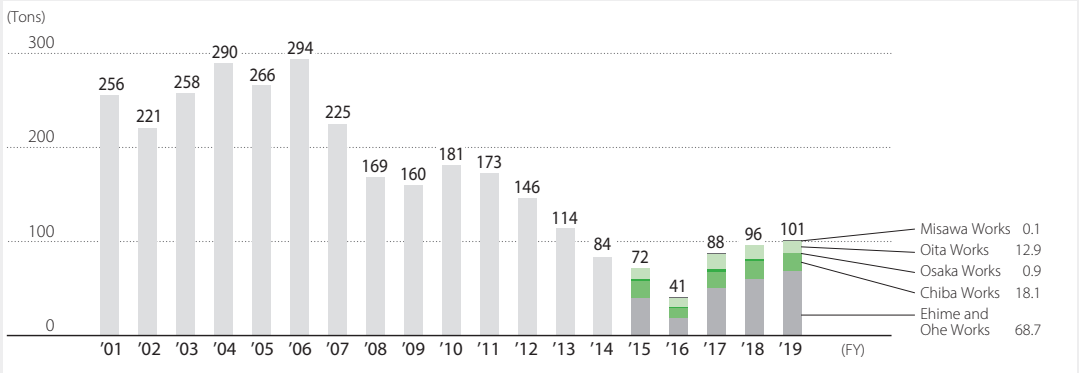
### SOx Emissions (Sumitomo Chemical)




### NOx Emissions (Sumitomo Chemical)




### Soot and Dust Emissions (Sumitomo Chemical)




| Target | Continue to sustain levels below voluntary control standard values. |
|---|---|

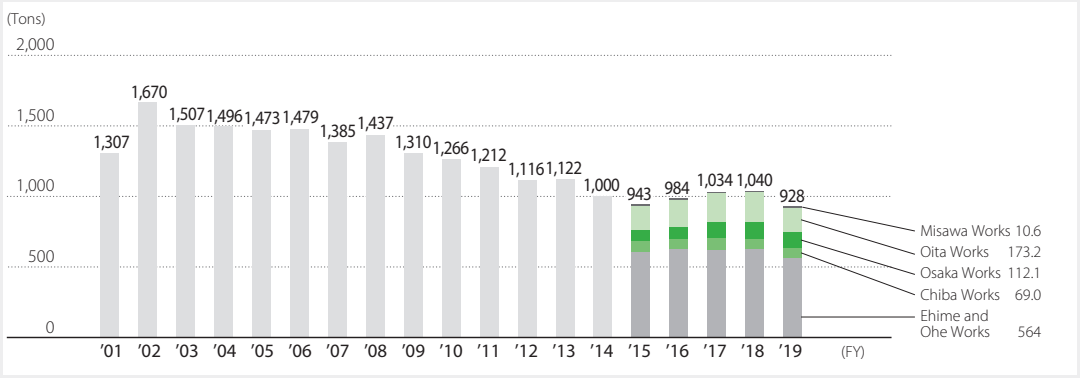
# Environmental Activities: Supplementary Data

## Water Emissions of COD, Nitrogen, and Phosphorus

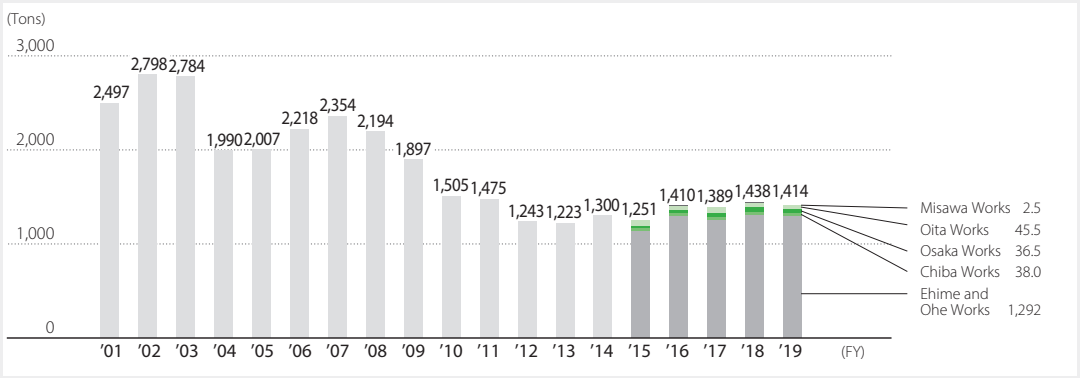
A number of measures have been implemented to cut emissions, in line with fifth-generation Water Quality Standards, and emissions of COD, nitrogen, and phosphorus into waterways have been significantly reduced since fiscal 2004. Sumitomo Chemical has also concluded cooperative agreements with local municipal 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.

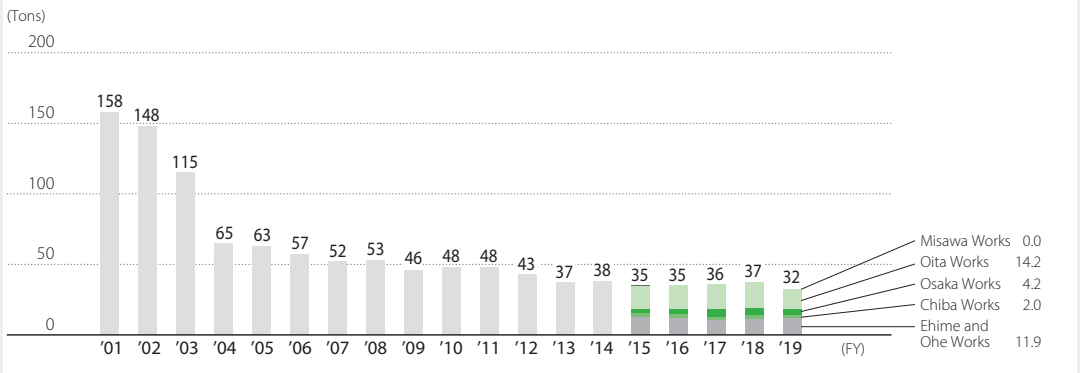
### COD Emissions (water emissions include water discharge to sewage systems) (Sumitomo Chemical)




### Nitrogen Emissions (Sumitomo Chemical)




### Phosphorus Emissions (Sumitomo Chemical)



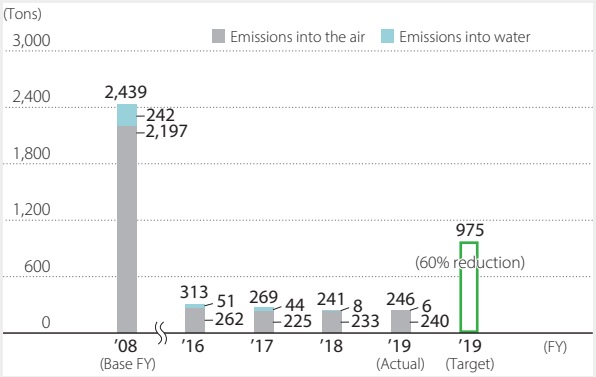

| Target | Continue to sustain levels below voluntary control standard values. |
|---|---|

# Environmental Activities: Supplementary Data

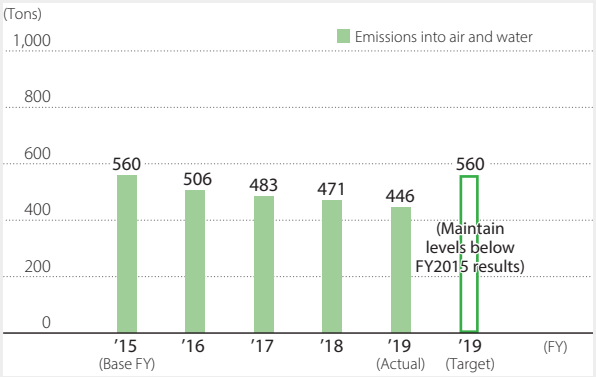
## Addressing PRTR and VOCs

### Trends in Emissions of Substances Subject to the PRTR Act

Sumitomo Chemical




Sumitomo Chemical and Group Companies in Japan



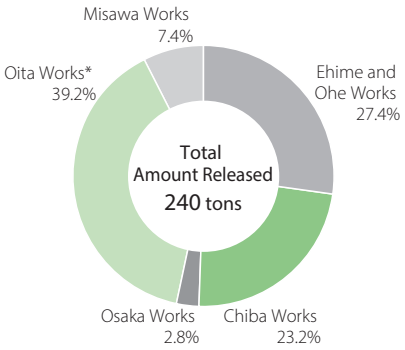

### FY2019 Release and Transfer of PRTR Substances (Sumitomo Chemical and Group Companies in Japan)

(Tons)

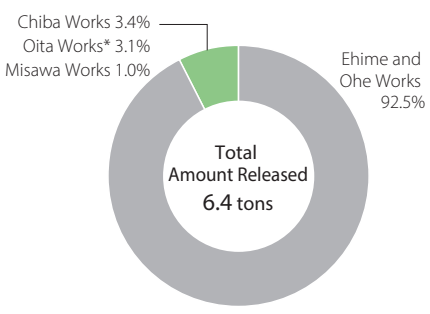
| | Released | | | Transferred | | |
|---|---|---|---|---|---|---|
| | Air | Water | Subtotal | Sewage | Waste | Subtotal |
| PRTR substances | | | | | | |
| Sumitomo Chemical (119 substances) | 240 | 6.4 | 246 | 4.1 | 4,652 | 4,656 |
| Sumitomo Chemical and Group companies in Japan | 438 | 8.0 | 448 | 7.3 | 7,967 | 7,974 |

### FY2019 PRTR Substances Released by Works (Sumitomo Chemical)

Released into the Air
(PRTR Substances)




Released into Waterways
(PRTR Substances)

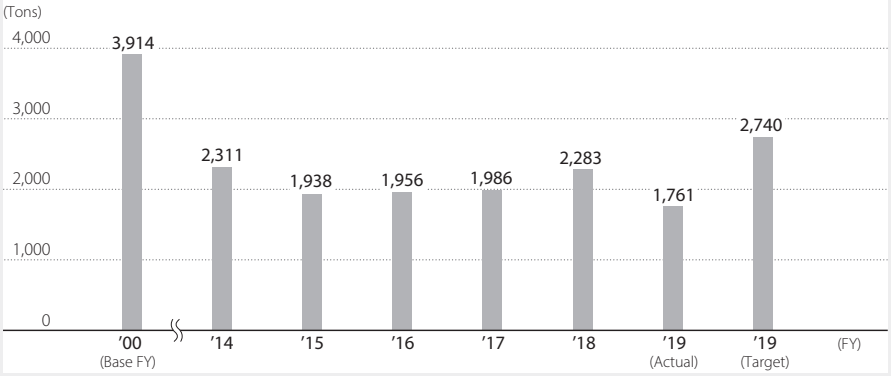



* Data for the Oita Works includes data for the Gifu and Okayama plants.

| | |
|---|---|
| Target | Reduce the total release of PRTR substances by 60% compared with fiscal 2008 by fiscal 2019. |
| Results | Reduced the total release of PRTR substances to 246 tons, by 89.9%, compared with fiscal 2008 by fiscal 2019, achieving the target. |

# Environmental Activities: Supplementary Data

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




| | |
|---|---|
| Target | Maintain a 30% reduction in VOC emissions compared with fiscal 2000. |
| Results | Reduced emissions by 1,761 tons, or 55.0%, compared with fiscal 2000 by fiscal 2019, achieving the target. |

## Prevention of Ozone Layer Depletion

### Number of Refrigeration Units That Use Specified CFCs and HCFCs as Coolants (Sumitomo Chemical and Group Companies in Japan) as of the End of Fiscal 2019

(Number of units)

| | Sumitomo Chemical | Sumitomo Chemical and Group companies in Japan |
|---|---|---|
| CFC11 | 8 | 8 |
| CFC12 | 3 | 23 |
| CFC113 | 0 | 1 |
| HCFC22 | 84 | 226 |
| HCFC123 | 26 | 33 |
| HCFC142b | 0 | 1 |

| | |
|---|---|
| Target | • Eliminate the use of refrigeration units that use specified CFCs as coolants by fiscal 2025.<br>• 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)

(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 | 3.4 | 0.0 | 0.0 | 3.4 | <0.1 | 87.1 | 87.1 |
| 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 | 0.6 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 |
| 4 | Acrylonitrile | 4.1 | 0.0 | 0.0 | 0.0 | 4.1 | 0.0 | 0.0 | 0.0 |
| 5 | Acrolein | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | <0.1 | <0.1 |
| 6 | Acetaldehyde | 0.3 | <0.1 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 |
| 7 | Acetonitrile | 0.9 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 4.5 | 4.5 |
| 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 | 33.8 | 33.8 |
| 10 | 2-Aminoethanol | <0.1 | 0.2 | 0.0 | 0.0 | 0.2 | 0.0 | 32.2 | 32.2 |
| 11 | m-Aminophenol | 0.0 | <0.1 | 0.0 | 0.0 | <0.1 | 0.0 | 17.5 | 17.5 |
| 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 | 0.0 | 0.0 |
| 14 | Isobutyraldehyde | 0.5 | 0.0 | 0.0 | 0.0 | 0.5 | 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 | 3.0 | <0.1 | 0.0 | 0.0 | 3.1 | 0.1 | 21.3 | 21.4 |
| 18 | Epichlorohydrin | 0.6 | 0.0 | 0.0 | 0.0 | 0.6 | 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 | 0.2 | 0.6 | 0.0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 |
| 22 | Xylene | 3.3 | <0.1 | 0.0 | 0.0 | 3.4 | 0.1 | 33.4 | 33.5 |
| 23 | Quinoline | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 24 | Cumene | 12.0 | <0.1 | 0.0 | 0.0 | 12.0 | 0.0 | 0.0 | 0.0 |
| 25 | Cresol | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 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 | 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 |
| 31 | 3-Chloropropene (also known as allyl chloride) | 1.6 | 0.0 | 0.0 | 0.0 | 1.6 | 0.0 | 15.3 | 15.3 |
| 32 | Chlorobenzene | 2.0 | <0.1 | 0.0 | 0.0 | 2.0 | 0.0 | 163.7 | 163.7 |
| 33 | Chloroform | <0.1 | 0.0 | 0.0 | 0.0 | <0.1 | 0.0 | 300.9 | 300.9 |
| 34 | Cobalt and its compounds | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 35 | Vinyl acetate | 23.4 | <0.1 | 0.0 | 0.0 | 23.4 | 0.0 | 0.0 | 0.0 |
| 36 | Salicyl aldehyde | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 37 | (RS)-α-Cyano-3-phenoxybenzyl 2,2,3,3-tetramethylcyclopropanecarboxylate (also known as fenpropathrin) | 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 | 119.2 | 119.2 |
| 42 | Cyclohexylamine | 0.0 | <0.1 | 0.0 | 0.0 | <0.1 | 0.0 | 2.2 | 2.2 |
| 43 | 1,2-dichloroethane | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | <0.1 | <0.1 |
| 44 | 1,1-Dichloroethylene (also known as vinylidene chloride) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45 | Cis-1,2-dichloroethylene | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 46 | 2,2-Dichloro-1,1,1- trifluoroethane (also known as HCFC-123) | 0.3 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 |
| 47 | 1,2-Dichloropropane | <0.1 | 0.0 | 0.0 | 0.0 | <0.1 | 0.0 | 360.0 | 360.0 |
| 48 | 1,3-Dichloropropene (also known as D-D) | 0.5 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 61.0 | 61.0 |
| 49 | Dichlorobenzene | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 153.5 | 153.5 |
| 50 | Dichloromethane (also known as methylene chloride) | 0.4 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 24.7 | 24.7 |
| 51 | Dicyclopentadiene | <0.1 | 0.0 | 0.0 | 0.0 | <0.1 | 0.0 | 5.5 | 5.5 |
| 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 | 0.4 | 0.0 | 0.0 | 0.4 | 0.0 | 7.9 | 7.9 |
| 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 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.3 | 10.3 |
| 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 | 1.3 | 1.3 |
| 59 | Dimethylamine | 0.0 | <0.1 | 0.0 | 0.0 | <0.1 | 0.0 | 1.9 | 1.9 |
| 60 | N,N-Dimethylformamide | <0.1 | <0.1 | 0.0 | 0.0 | <0.1 | 0.0 | 117.7 | 117.7 |
| 61 | Mercury and its compounds | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 62 | Organotin compounds | 0.0 | <0.1 | 0.0 | 0.0 | <0.1 | 0.0 | 0.7 | 0.7 |
| 63 | Styrene | 2.2 | 0.0 | 0.0 | 0.0 | 2.2 | 0.0 | 0.6 | 0.6 |
| 64 | Selenium and its compounds | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | <0.1 | 0.0 | <0.1 |
| 65 | Dioxins | 4.2 | 5.4 | 0.0 | 0.0 | 9.6 | 0.2 | 10.5 | 10.7 |
| 66 | Thiourea | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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 | 0.0 | 0.0 | 0.0 |
| 70 | Terephthalic acid | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 418.0 | 418.0 |
| 71 | Water-soluble copper salts (excluding complex salts) | 0.0 | <0.1 | 0.0 | 0.0 | <0.1 | <0.1 | 0.0 | <0.1 |
| 72 | Triethylamine | 0.6 | 0.2 | 0.0 | 0.0 | 0.9 | 0.6 | 40.3 | 40.9 |
| 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 | 0.0 | 0.0 | 0.0 |
| 75 | Trichloroethylene | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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 | 1,2,3-Trichloropropane | <0.1 | 0.0 | 0.0 | 0.0 | <0.1 | 0.0 | 16.3 | 16.3 |
| 78 | 1,2,4-Trimethylbenzene | 0.4 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 |
| 79 | Toluidine | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.6 | 3.6 |
| 80 | Toluene | 139.1 | 0.1 | 0.0 | 0.0 | 139.3 | 0.3 | 2,291.8 | 2,292.1 |
| 81 | Naphthalene | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82 | Lead compounds | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | <0.1 | 0.0 | <0.1 |
| 83 | Nickel compounds | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 |
| 84 | Nitrobenzene | 0.6 | 0.6 | 0.0 | 0.0 | 1.2 | 0.0 | 44.3 | 44.3 |
| 85 | 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 |
| 86 | Arsenic and its inorganic compounds | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | <0.1 | 0.0 | <0.1 |
| 87 | Hydrazine | <0.1 | <0.1 | 0.0 | 0.0 | <0.1 | 0.0 | 42.1 | 42.1 |
| 88 | Hydroquinone | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 89 | 4-Vinyl-1-cyclohexene | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90 | biphenyl | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 91 | Pyridine | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.8 |
| 92 | 1,3-Butadiene | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 |
| 93 | Bis(2-ethylhexyl)phthalate | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.8 | 1.8 |
| 94 | tert-Butyl hydroperoxide | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 95 | 2-tert-Butyl-5-methylphenol | <0.1 | 0.0 | 0.0 | 0.0 | <0.1 | 0.0 | 0.0 | 0.0 |
| 96 | Hydrogen fluoride and its water-soluble salts | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | <0.1 | 0.0 | <0.1 |
| 97 | 2-Propyn-1-ol | <0.1 | 0.0 | 0.0 | 0.0 | <0.1 | 0.0 | 0.0 | 0.0 |
| 98 | 2-Bromopropane | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.2 | 6.2 |
| 99 | Hexadecyltrimethylammonium chloride | <0.1 | 0.0 | 0.0 | 0.0 | <0.1 | 0.0 | 0.0 | 0.0 |
| 100 | n-Hexane | 27.5 | <0.1 | 0.0 | 0.0 | 27.6 | 0.0 | 105.2 | 105.2 |
| 101 | Water-soluble salts of peroxydisulfuric acid | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 102 | Benzyl chloride | <0.1 | 0.0 | 0.0 | 0.0 | <0.1 | 0.0 | 0.0 | 0.0 |
| 103 | Benzaldehyde | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 104 | Benzene | 0.3 | 0.2 | 0.0 | 0.0 | 0.5 | <0.1 | 0.0 | <0.1 |
| 105 | Boron compounds | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | <0.1 | 3.1 | 3.2 |
| 106 | Polychlorinated biphenyls (also known as PCBs) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 107 | 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 |
| 108 | Formaldehyde | <0.1 | <0.1 | 0.0 | 0.0 | 0.1 | 2.8 | 8.5 | 11.3 |
| 109 | Manganese and its compounds | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | <0.1 | 0.0 | <0.1 |
| 110 | Phthalic anhydride | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 111 | Maleic anhydride | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | <0.1 | <0.1 |
| 112 | 2,3-Epoxypropyl methacrylate | 1.6 | 0.0 | 0.0 | 0.0 | 1.6 | 0.0 | 0.0 | 0.0 |
| 113 | Methyl methacrylate | 8.7 | 0.0 | 0.0 | 0.0 | 8.7 | 0.0 | 44.2 | 44.2 |
| 114 | (Z)-2'-Methylacetophenone= 4,6-dimethyl-2-pyrimidinyl hydrazone (also known as Ferimzone) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 115 | Methylamine | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| 116 | 3-Methylthiopropanal | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 117 | Methylnaphthalene | 3.7 | 0.0 | 0.0 | 0.0 | 3.7 | 0.0 | 0.0 | 0.0 |
| 118 | Morpholine | 0.0 | <0.1 | 0.0 | 0.0 | <0.1 | 0.0 | 0.0 | 0.0 |
| 119 | Triphenyl phosphate | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total | | 240.3 | 6.4 | 0.0 | 0.0 | 246.7 | 4.1 | 4,652.0 | 4,656.1 |

# Environmental Activities: Supplementary Data

## Industrial Waste Reduction

### PCB Waste (Sumitomo Chemical and Group Companies in Japan)

Storage and Control of High Concentrations of PCB Waste as of the End of Fiscal 2019

| | Number of units of PCB waste | | | Volume of PCBs (kl) |
|---|---|---|---|---|
| | Total | Storage | Usage | |
| Sumitomo Chemical | 4 | 4 | 0 | <0.01 |
| Sumitomo Chemical and Group Companies in Japan | 13 | 9 | 4 | 0.1 |

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.

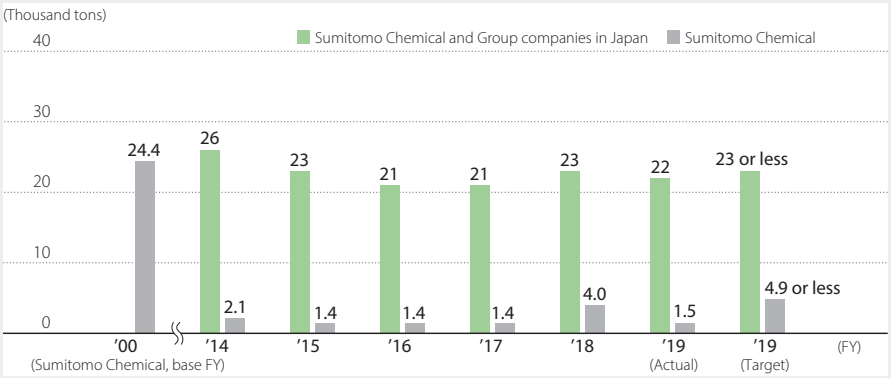
**Results**

Untreated high-concentration PCB-containing waste is still being collected and stored.

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.

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

### Landfill Disposal Amount (Sumitomo Chemical and Group Companies in Japan)




**Target**

We aim to maintain a landfill disposal amount of no more than 4,900 tons, 80% less than the fiscal 2000 level, for Sumitomo Chemical and no more than 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)

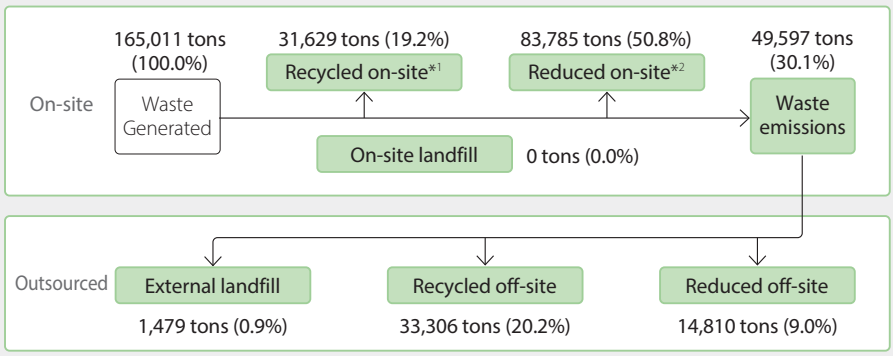
| | Number of manifests issued | Number of manifests digitized | Digitization rate (%) |
|---|---|---|---|
| FY2013 | 19,389 | 15,329 | 79 |
| FY2014 | 18,662 | 14,930 | 80 |
| FY2015 | 18,973 | 16,337 | 86 |
| FY2016 | 19,868 | 19,594 | 99 |
| FY2017 | 19,858 | 19,585 | 99 |
| FY2018 | 20,598 | 20,355 | 99 |
| FY2019 | 19,835 | 19,726 | 99 |

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

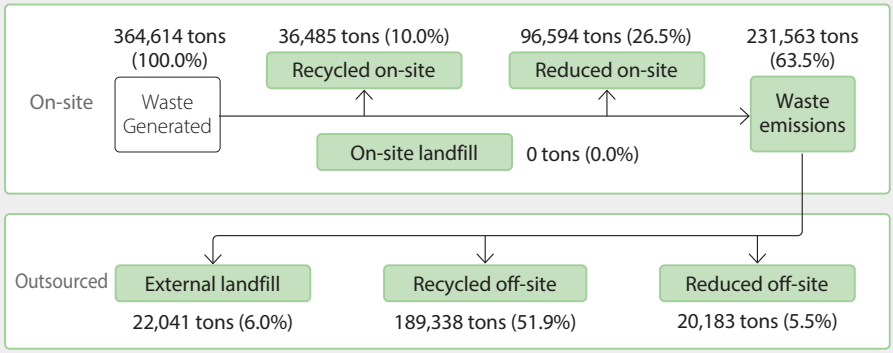
# Environmental Activities: Supplementary Data

## Waste Disposal Flow Chart and FY2019 Results

(Sumitomo Chemical)




(Sumitomo Chemical and Group Companies in Japan)




*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 FY2019 Results by Item in connection with the Disposal of Waste (Sumitomo Chemical)

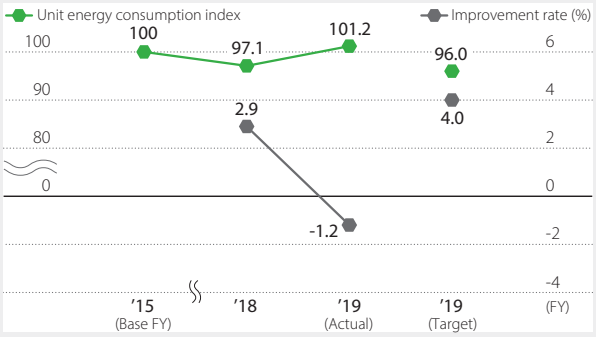
(Tons)

| 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 | 4,666.8 | | | | | 4,666.8 | | | 4,347.8 | | 319.0 |
| Sludge | 51,369.0 | | 12,782.6 | 23,086.2 | 2,664.7 | 12,835.5 | | 3,007.0 | 9,669.2 | 1.3 | 158.0 |
| Oil waste | 38,894.8 | 4,500.1 | 11,153.2 | 11,655.9 | | 11,585.5 | | 4,441.7 | 5,770.3 | 1,290.1 | 83.4 |
| Waste acid | 7,962.1 | | 0.6 | 6,153.4 | 692.6 | 1,115.5 | | 719.2 | 237.6 | 125.8 | 32.9 |
| Waste alkali | 53,155.1 | 2,943.4 | 39.0 | 37,778.6 | | 12,394.1 | | 5,574.2 | 5,474.6 | 1,267.3 | 77.9 |
| Waste plastic | 4,880.5 | | 150.0 | 747.1 | | 3,983.4 | | 426.6 | 2,917.9 | 81.8 | 557.1 |
| Waste paper | 1,117.2 | | 46.9 | 833.0 | | 237.3 | | 28.1 | 240.0 | | 0.1 |
| Wood waste | 1,174.3 | | | 142.7 | | 1,031.6 | | 30.5 | 548.8 | 445.9 | 6.4 |
| Textile waste | 43.3 | | | 29.0 | | 14.3 | | 12.2 | 2.1 | | |
| Animal and plant residues | 11.8 | | | | | 11.8 | | 11.8 | | | |
| Metal waste | 529.2 | | | 1.5 | | 527.7 | | 120.8 | 358.3 | | 17.7 |
| Glass and pottery waste | 501.0 | | | | | 501.0 | | 62.0 | 376.7 | | 62.2 |
| Slag | | | | | | | | | | | |
| Debris | 679.1 | 7.0 | | | | 672.1 | | 376.2 | 151.0 | | 143.9 |
| Soot and dust | 27.4 | | 6.6 | | | 20.8 | | | | | 20.8 |
| Total | 165,011 | 7,450 | 24,179 | 80,427 | 3,357 | 49,597 | 0 | 14,810 | 30,094 | 3,212 | 1,479 |

# Environmental Activities: Supplementary Data

## Sharing Environmental Protection and Management Targets (Japan)

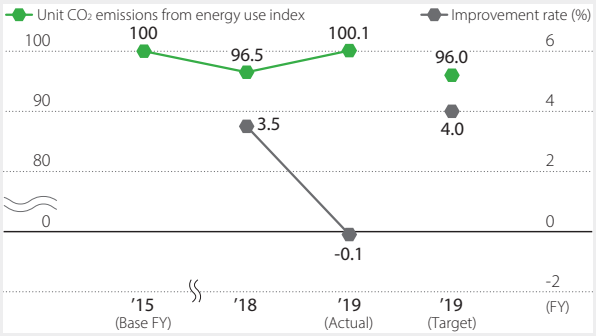
### Unit Energy Consumption Indices (2015 = 100)




**Improvement in Unit Energy Consumption Indices**

| | |
|---|---|
| Target | Improve unit energy consumption Indices by at least 1% annually on average. |
| Results | Unit energy consumption indices in fiscal 2019 worsened by 1.2% compared with fiscal 2015, failing to achieve the target. |

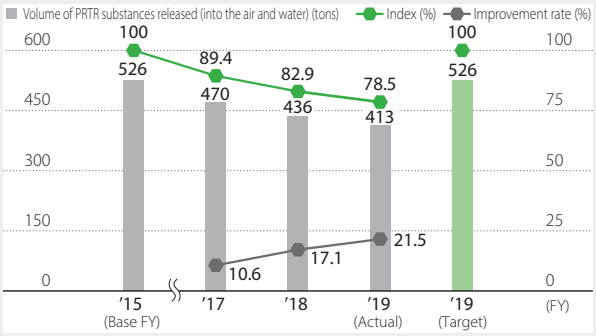
### Unit $CO_2$ Emissions from Energy Use Indices (2015 = 100)




**Improvement in Unit $CO_2$ Emissions from Energy Use Indices**

| | |
|---|---|
| Target | Improve unit $CO_2$ emissions Indices by at least 1% annually on average. |
| Results | Unit $CO_2$ emission indices in fiscal 2019 worsened by 0.1% compared with fiscal 2015, failing to achieve the target. |

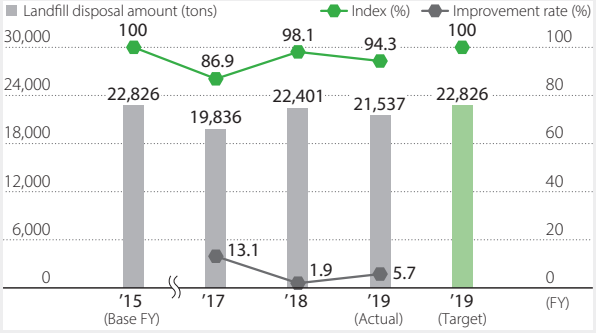
### Volume of PRTR Substances Released (into the Air and Water) and PRTR Substance Emissions Indices (2015 = 100)




**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 2019 was reduced by 21.5% 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 2019 was reduced by 5.7% compared with fiscal 2015, achieving the target. |

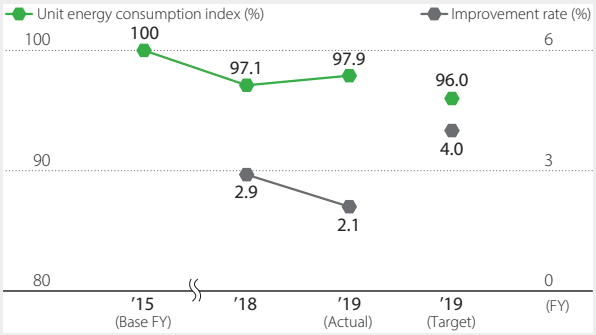
Note: **Sumitomo Chemical and the 15 Group companies in Japan listed below are included in the boundary of calculation.**

Sumika-Kakoushi Co., Ltd.; Sumika Color Co., Ltd.; Sumika Plastech Co., Ltd.; Nippon A&L Inc.; 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.; Sumika Polycarbonate Limited; Nihon Medi-Physics Co., Ltd.; Sumitomo Joint Electric Power Co., Ltd.

# Environmental Activities: Supplementary Data

## Sharing Environmental Protection and Management Targets (Overseas)

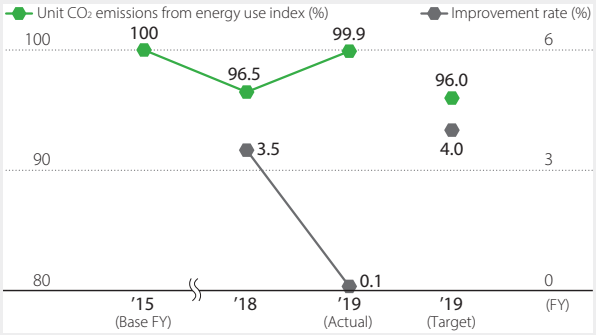
### Unit Energy Consumption Indices (2015 = 100)




Improvement in Unit Energy Consumption Indices

| | |
|---|---|
| Target | Improve unit energy consumption Indices by at least 1% annually on average. |
| Results | Unit energy consumption indices in fiscal 2019 improved by 2.1% compared with fiscal 2015, failing to achieve the target. |

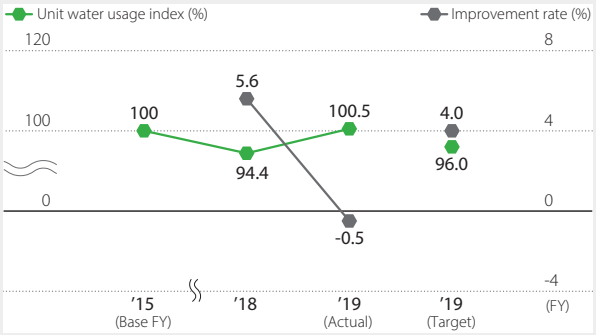
### Unit $CO_2$ Emissions from Energy Use Indices (2015 = 100)




Improvement in Unit $CO_2$ Emissions from Energy Use Indices

| | |
|---|---|
| Target | Improve unit $CO_2$ emissions Indices by at least 1% annually on average. |
| Results | Unit $CO_2$ emission indices in fiscal 2019 improved by 0.1% compared with fiscal 2015, failing to achieve the target. |

### Unit Water Usage Indices (2015 = 100)




Improvement in Unit Water Usage Indices

| | |
|---|---|
| Target | Improve unit water usage Indices by at least 1% annually on average. |
| Results | Usage in fiscal 2019 worsened by 0.5% compared with fiscal 2015, failing to achieve 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.<br>• Sumika Electronic Materials (Hefei) Co., Ltd. • Sumika Huabei Electronic Materials (Beijing) Co., Ltd.<br>• Sumika Electronic Materials (Shanghai) Co., Ltd. • Sumika Electronic Materials (Xi'an) Co., Ltd.<br>• Sumika Polymer Compounds Dalian Co., Ltd. • Zhuhai Sumika Polymer Compounds Co., Ltd.<br>• 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

1. Sumitomo Chemical (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 |

2. Group Companies In Japan

| | |
|---|---|
| Sumika-Kakoushi Co., Ltd. | Sumika Agro Manufacturing Co., Ltd. |
| Sumika Color Co., Ltd. | Koei Chemical Co., Ltd. |
| Nippon A&L Inc. | Taoka Chemical Co., Ltd. |
| Asahi Chemical Co., Ltd. | Tanaka Chemical Corporation |
| Ceratec Co., Ltd. | SCIOCS COMPANY LIMITED |
| Sumika Assembly Techno Co., Ltd | Sumitomo Dainippon Pharma Co., Ltd. |

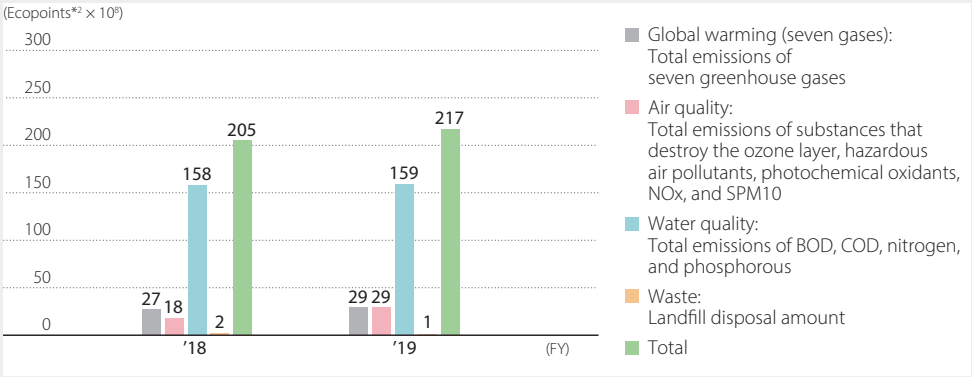
3. Overseas Group Companies

| |
|---|
| Dongwoo Fine-Chem Co., Ltd. |
| The Polyolefin Company (Singapore) Pte. Ltd. |
| Sumika Electronic Materials (Wuxi) Co., Ltd. |
| Sumitomo Chemical Asia Pte Ltd |
| Sumika Huabei Electronic Materials (Beijing) Co., Ltd. |
| Zhuhai Sumika Polymer Compounds Co., Ltd. |
| Sumika Polymer Compounds (Thailand) Co., Ltd. |
| Sumitomo Chemical Advanced Technologies LLC |
| Sumipex (Thailand) Co., Ltd. |
| Bara Chemical Co., Ltd. |
| SSLM Co., Ltd. |
| Sumika Electronic Materials (Xian) Co., Ltd. |
| Sumika Electronic Materials (Hefei) Co., Ltd. |
| Sumika Electronic Materials (Shanghai) Co., Ltd. |
| Sumika Polymer Compounds Dalian Co., Ltd. |

# 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) by JEPIX*1




### Assessing the Environmental Impact of Each Group Company Using JEPIX

In fiscal 2019, 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.