

3 Environmental Protection / Climate Change Action

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, 2017 to March 31, 2018
- ⁽²⁾ Boundary: Sumitomo Chemical and 23 major consolidated subsidiaries (18 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 1.7 billion yen, and

consolidated expenses decreased by 1.3 billion yen.

* Sumitomo Dainippon Pharma Co., Ltd.; Koei Chemical Co., Ltd.; Taoka Chemical Co., Ltd.; Tanaka Chemical Corporation; 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.; SCIOCS 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

									(В	illion yen)
				FY2	2016			FY2	017	
Classification		Details of Major Initiatives		Non-consolidated		Consolidated		Non-consolidated		idated
			Investment	Expenses	Investment	Expenses	Investment	Expenses	Investment	Expenses
Faci	ity area costs		4.0	16.0	5.2	26.6	1.6	16.8	3.5	28.2
Brea	Pollution prevention costs	Prevention of air pollution, water pollution, soil contamination, noise pollution, odors, ground subsidence, etc.	(2.5)	(10.9)	(3.5)	(15.2)	(1.2)	(11.8)	(2.6)	(16.5)
akdowr	Global environmental protection costs	Energy saving, prevention of global warming, ozone layer depletion, and other measures	(1.3)	(0.3)	(1.5)	(3.4)	(0.1)	(0.2)	(0.4)	(3.4)
-	Resource recycling costs	Resource saving, water saving and rainwater usage, waste reduction/disposal treatment, recycling, etc.	(0.2)	(4.9)	(0.2)	(8.1)	(0.3)	(4.8)	(0.5)	(8.3)
Ups Dov	tream / /nstream 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
Adn	ninistrative 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	0.8	0	1.3	0	0.7	0	1.3
R&D	costs	Development of products with attention to environmental safety, research into energy-saving processes, etc.	0	6.8	0	6.8	0.1	3.9	0.1	4.0
Adn	inistrative costs	Protection of the natural environment and enhance- ment 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	0.8
Envi rem	ronmental ediation 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
Tota			4.0	24.0	5.3	35.9	1.7	21.9	3.6	34.6

Economic Effects

				(Billion yen)	
Deculto	FY2	016	FY2017		
Results	Non-consolidated	Consolidated	Non-consolidated	Consolidated	
Reduced costs through energy saving	0.5	1.5	2.2	3.7	
Reduced costs through resource saving	0.4	4.0	0.5	6.7	
Reduced costs through recycling activities	2.0	3.3	0.6	1.7	
Total	2.9	8.8	3.3	12.1	

Economic effects are the rationalization value of per-unit improvement in such areas as energy and resource saving. In fiscal 2017, economic effects improved year on year ¥0.4 billion on a non-consolidated basis and ¥3.3 billion on a consolidated basis.

Cost Efficiency of Environmental Protection Measures (Sumitomo Chemical)



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.

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 2017, 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.

1

Reducing Greenhouse Gas Emissions

Greenhouse Gas Emissions (All Seven Gases) (Sumitomo Chemical (Target: All Facilities))

							(Thousands o	f tonnes of CO2e)
		FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017
CO2	Energy sources	3,134	3,190	3,357	3,347	2,559	2,405	2,454
	From other than energy use	98	62	63	65	55	50	93
Methane	e (CH4)	—		—	—	—	—	—
Nitrous	oxide (N2O)	58	67	63	76	65	45	35
Hydroflu	orocarbon (HFC)	—	_	—	—	—	—	—
Perfluor	ocarbon (PFC)	—	_	_	_		_	—
Sulfur he	exafluoride (SF6)	—	_	—	—	_	_	_
Nitroger	n trifluoride (NF3)	—	_	_	_	_	_	_

Note: • CH4, HFC, PFC, SF6, and NF3 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.

Energy Saving

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

	(a) Energy Consumption (1,000 kl in Crude Oil Equivalent)	(b) Production (1,000 tonnes in Ethylene Equivalent)	(a/b) Unit Energy Consumption
Ehime Works	409.7	680.8	0.602
Chiba Works	355.0	458.6	0.774
Osaka Works	23.7	18.9	1.254
Oita Works*	57.2	52.9	1.081
Misawa Works	10.4	7.5	1.387
Ohe Works	35.1	152.9	0.230
Total	891.1	1,371.6	0.650

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 (Target: 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 891 thousand kl in crude oil equivalent in fiscal 2017. In fiscal 2017, unit energy consumption improved 3.7% compared with fiscal 2016 and 21.3% compared with fiscal 2005.

Energy Consumption and CO₂ Emissions

(Sumitomo Chemical and Group Companies in Japan (Target: All Facilities))

		Energy Consumption (1,000 kl in Crude Oil Equivalent)	CO2 Emissions from Energy Use (1,000 tonnes)
Sı	umitomo Chemical	903	2,454
	Works	891	2,430
	Non-manufacturing sites, including the Head Offices and Research Laboratories	12	25
Su	imitomo Chemical and Group companies in Japan	1,815	5,452
	Works*	1,788	5,396
	Non-manufacturing sites, including the Head Offices and Research Laboratories	27	56

Note: • 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.

* Includes sales outside the Group by Sumitomo Joint Electric Power Co., Ltd.

Initiatives for Energy Saving and CO2 Emissions Reduction in the Logistics Division

Energy Consumption and CO₂ Emissions for Group Companies in Japan ("Specified Consigners")

	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017
Energy consumption (1,000 kl in crude oil)	4.1	3.9	3.9	3.9	1.6	1.6	1.8
CO2 emissions (1,000 tonnes)	10.9	10.3	10.3	10.3	3.9	4.0	4.6

Note: • Figures between fiscal 2011 and 2014 are totals for Nippon A&L Inc. and Nihon Oxirane Co., Ltd.

Since fiscal 2015, the figures are only for Nippon A&L Inc.



Industrial Waste Reduction

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

Storage and Control of High Concentrations of PCB Waste (As of the End of Fiscal 2017)

	Number of Units of PCB Waste			Volume of PCBs
	Total	Storage	Usage	(kl)
Sumitomo Chemical	18	18	0	0.06
Sumitomo Chemical and Group companies in Japan	58	58	0	1.0

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.

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 plans to treat 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



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

	Number of Manifests Issued	Number of Manifests Digitized	Digitization Rate (%)
FY2012	17,502	13,259	76
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

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



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



Note: 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.

*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 (Target: All Works))

	Waste	Recycle	d On-site	Reduced	On-site				Recycleo	d Off-site	
Туре	Generated	Reused, Recycled	Thermally	Incineration	Other	Waste Emissions	On-site Landfill	Reduced Off-site	Reused, Recycled	Thermally Recycled	External Landfill
Burnt residue	3,701.7					3,701.7			3,532.7		169.0
Sludge	47,519.2		7,474.3	21,466.9	2,893.1	15,616.7		2,083.4	13,327.3	3.3	292.2
Oil waste	34,690.4	4,509.6	9,566.4	10,750.6		9,863.7		3,502.1	5,280.2	1,049.4	31.9
Waste acid	8,456.2		14.6	6,142.4	815.8	1,483.4		1,036.0	425.7	8.8	4.9
Waste alkali	45,288.4	10.1	9.6	33,727.7	81.4	11,459.6		6,301.1	4,007.3	1,082.3	53.4
Waste plastic	5,810.0		157.4	1,211.9		4,440.8		438.8	3,273.7	140.5	588.8
Waste paper	1,141.7		66.5	822.7		252.5		28.0	224.3		0.2
Wood waste	915.7			81.5		834.3		54.4	639.2	131.7	9.0
Textile waste	46.1			35.0		11.1		9.5	1.7		0.0
Animal and plant residues	11.1					11.1		11.1			
Metal waste	858.5			0.4		858.0		457.5	385.0		15.5
Glass and pottery waste	335.9					335.9		18.9	270.9		46.2
Slag	31.0					31.0			31.0		
Debris	729.0	18.0				711.0		406.8	122.0		182.3
Soot and dust	55.1		5.7			49.4			3.8		45.6
Total	149,590	4,538	17,294	74,239	3,790	49,660	0	14,348	31,525	2,416	1,439

Addressing PRTR and VOCs

Trends in Emissions of Substances Subject to the PRTR Act



Sumitomo Chemical and Group Companies in Japan



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

							(Tonnes)	
			Released	I	Transferred			
		Air	Water	Subtotal	Sewage	Waste	Subtotal	
PI	RTR substances							
	Sumitomo Chemical (96 substances)	225	44	269	5	4,201	4,207	
	Sumitomo Chemical and Group companies in Japan	438	45	483	11	7,478	7,490	

PRTR Substances Released by Works (Sumitomo Chemical)



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







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

Prevention of Ozone Layer Depletion

Number of Refrigeration Units That Use Specified CFCs and HCFCs as Coolants (As of the End of Fiscal 2017)

	Sumitomo Chemical	Sumitomo Chemical and Group Companies in Japan
CFC11	11	11
CFC12	1	35
CFC113	0	0
CFC114	0	0
CFC115	0	2
HCFC22	76	227
HCFC123	26	31
HCFC142b	0	3

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.



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)





Preventing Pollution: 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.







Nitrogen Emissions (Sumitomo Chemical)



Phosphorus Emissions (Sumitomo Chemical)







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

Release and Transfer of PRTR Substances in Fiscal 2017 (Sumitomo Chemical (Target: All Works))

						(Torines, except where noted)			
			Amount Released			Amount Transferred			
No.	Name of Chemical Compound	Air	Water	Soil	Landfill	Total	Sewage	Waste	Total
1	Zinc compounds (water-soluble)	0.0	3.6	0.0	0.0	3.6	0.0	110.5	110.5
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	11	0.0	0.0	0.0	11	0.0	0.0	0.0
4	Acrylonitrile	4 5	<01	0.0	0.0	45	0.0	0.0	0.0
5	Acrolein	0.0	0.1	0.0	0.0	0.0	0.0	<0.0	<0.0
	Acataldahyda	0.0	<0.0	0.0	0.0	0.0	0.0	0.1	0.1
7	Acatonitrila	-01	0.1	0.0	0.0	01	0.0	26.7	0.0 26.7
, Q	o-Anicidino		0.0	0.0	0.0	0.1	0.0	20.7	20.7
0	Anilino	0.0	0.0	0.0	0.0	0.0	0.0	21.8	21.8
10	2-Aminocthanol	-0.1	0.0	0.0	0.0	0.7	0.0	22.4	22.4
11	z-Animoethanol	< <u>0.1</u>	<0.2	0.0	0.0	 	0.0	ZZ. 4 4 1	۲۲. ۱
11		0.0 <0.1	<0.1	0.0	0.0	<0.1	0.0	4.1	4.1
12	Any alcono	<0.1	0.0	0.0	0.0	<0.1	0.0	0.0	0.0
13		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	Sobutyraidenyde	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	O-etnylO-6-nitro-meta-toiyi-sec- butyipnosphoramidotnioate (Butamiros)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Ethylpenzene	2.4	<0.1	0.0	0.0	2.5	<0.1	/2.3	/2.3
1/		0.6	<0.1	0.0	0.0	0.6	0.0	0.0	0.0
18	1,2-Epoxypropane (also known as propylene oxide)	0.0	<0.1	0.0	0.0	<0.1	0.0	0.0	0.0
19	e-Caprolactam	0.2	0.9	0.0	0.0	1.1	0.0	0.0	0.0
20	Xylene	3.6	<0.1	0.0	0.0	3.6	<0.1	55.0	55.1
	Quinoline	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
. 22	Cumene	21.2	<0.1	0.0	0.0	21.2	0.0	0.0	0.0
23	Cresol	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0
	Chloroacetic acid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3-Chloropropene (also known as allyl chloride)	1.6	0.0	0.0	0.0	1.6	0.0	0.0	0.0
26	Chlorobenzene	3.6	<0.1	0.0	0.0	3.6	0.0	108.7	108.7
	Chloroform	<0.1	0.0	0.0	0.0	<0.1	<0.1	122.4	122.4
28	Cobalt and its compounds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	Vinyl acetate	17.0	<0.1	0.0	0.0	17.0	0.0	8.1	8.1
30	Salicyl aldehyde	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	Inorganic cyanide compounds (excluding complex salts and cyanates)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	1,4-Dioxane	<0.1	0.0	0.0	0.0	<0.1	<0.1	135.7	135.8
33	Cyclohexylamine	0.0	<0.1	0.0	0.0	<0.1	0.0	1.3	1.3
34	2,2-Dichloro-1,1,1- trifluoroethane (HCFC-123)	1.8	0.0	0.0	0.0	1.8	0.0	0.0	0.0
35	1,2-Dichloropropane	<0.1	0.0	0.0	0.0	<0.1	0.0	339.4	339.4
36	1,3-Dichloropropene (also known as D-D)	0.6	0.0	0.0	0.0	0.6	0.0	220.6	220.6
37	Dichlorobenzene	0.0	0.0	0.0	0.0	0.0	0.0	139.2	139.2
38	Dichloromethane (also known as methylene chloride)	3.5	0.0	0.0	0.0	3.5	0.0	8.2	8.2
39	Dicyclopentadiene	<0.1	0.0	0.0	0.0	<0.1	0.0	4.4	4.4
40	2,4-Dinitrophenol	0.0	0.0	0.0	0.0	0.0	0.0	40.4	40.4
41	1,3-Diphenylguanidine	0.0	0.5	0.0	0.0	0.5	0.0	10.3	10.3
42	2,6-Di-tert-butyl-4-cresol	0.0	<0.1	0.0	0.0	<0.1	0.0	0.0	0.0
43	2,4-Di-tert-butylphenol	<0.1	0.0	0.0	0.0	<0.1	0.0	0.0	0.0
44	N,N-Dimethylacetamide	0.0	0.0	0.0	0.0	0.0	0.0	5.0	5.0
45	N,N-Dimethylaniline	0.0	0.0	0.0	0.0	0.0	0.0	2.1	2.1
46	Dimethylamine	0.0	5.5	0.0	0.0	5.5	0.0	0.6	0.6
47	N,N-Dimethylformamide	<0.1	<0.1	0.0	0.0	<0.1	0.0	104.3	104.3
48	Styrene	2.3	0.0	0.0	0.0	2.3	0.0	2.0	2.0
49	Dioxins (in mg-TEG)	<0.1	<0.1	0.0	0.0	<0.1	<0.1	<0.1	<0.1
50	Thiourea	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7



	(Tonnes, except where noted							ere noted)		
		Amount Released					Amount Transferred			
No.	Name of Chemical Compound	Air	Water	Soil	Landfill	Total	Sewage	Waste	Total	
51	Q.QDimethyl Q.(3-methyl-4-nitrophenyl) phosphorothicate (Fenitrothion or MEP)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
52	2356-Tetrachloro-para-benzoguinope	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
53	Terenhthalic acid	0.0	0.0	0.0	0.0	0.0	0.0	423.1	423.1	
54	Water-soluble copper salts (excluding complex salts)	0.0	<0.0	0.0	0.0	< 0.0	0.0	0.0	0.0	
55	Sodium dodecyl sulfate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
56	Triethylamine	1.0	29.6	0.0	0.0	30.6	0.0	53.9	54 7	
57	246-Trichloro-135-triazine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
58	Trichlorofluoromethane (also known as CEC-11)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
59	123-Trichloropropage	<01	0.0	0.0	0.0	<0.5	0.0	16.8	16.8	
60	124-Trimethylbenzene	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	
61	Toluidine	0.1	0.0	0.0	0.0	0.1	0.0	3.0	0.0 3 Q	
62			0.0	0.0	0.0	108.7	1 3	1 836 3	18376	
63	Nabthalana		0.2	0.0	0.0	0.0	0.0	0.0	1,057.0	
64	Naphthalene		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
65	Nickel compounds		0.0	0.0	0.0	1 1	0.0	47.2	0.0 //7.2	
66	Vanadium compounds	0.0	0.5	0.0	0.0	0.0	0.0	-77.2	+7.2 00	
67	Arconic and its inorganic compounds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
68	Hydrazina	-0.0 -0.1	0.0	0.0	0.0	0.0	0.0	52.2	52.2	
60	Hydroquipopo	0.1	0.0	0.0	0.0	0.5	0.0	0.0	0.0	
70	Rinhanyl	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
70	Duridina	0.0	<0.0	0.0	0.0	-0.1	0.0	1.4	0.0	
/ 1 	Phonylopadiamina	0.0	<u></u> 0.1	0.0	0.0		0.0	0.0	0.0	
72	1.2 Putadiana	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	
73	tort Putul hydroporovida	0.0	0.0	0.0	0.0	0.0	0.0	3.9	3.9	
74	2 tott Puttul 5 mothylabanal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
75		-0.1	0.0	0.0	0.0	-0.1	0.0	0.0	-0.1	
70	2-PTOPyTI-1-01	<0.1	0.0	0.0	0.0	<0.1	0.0	<0.1 2.7	<0.1 2.7	
70	2-Bromopropane	0.0	0.0	0.0	0.0	-0.1	0.0	2./	2./	
70		<0.1 24.0	-0.1	0.0	0.0	24.0	0.0	141.2	141.2	
/9		0.0 0.0	<0.1	0.0	0.0	54.9	0.0	141.2	141.2	
00		0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	
81	Benzyl chloride	<0.1	0.0	0.0	0.0	<0.1	0.0	0.0	0.0	
82	Benzaldenyde	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
83	Benzene	0.3	0.2	0.0	0.0	0.5	0.0	0.0	0.0	
84 05	Bolion compounds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
85 06	Polyoxyetnylene 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	
00	Pormaidenyde	0.2	0.2	0.0	0.0	0.4	2.7	0.0	2./	
8/		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
88	Maleic annydride	0.0	0.0	0.0	0.0	0.0	0.0	<0.1	<0.1	
	2,3-Epoxypropyi methacrylate	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0	
90	Metnyi metnacrylate	9.0	0.0	0.0	0.0	9.0	0.0	40.9	40.9	
91	(Z)-Z -Metnylacetopnenone=4,6-dimetnyl-2-pyrimidinyl nydrazone (Ferimzone)	0.0	1./	0.0	0.0	1./	0.0	0.0	0.0	
92	Methylamine	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0	
93	3-metnyisuitanyipropanai	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
94	ivietnyinaphthalene	3.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	
95		0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.0	
96	Iripnenyi phosphate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total		225.0	43.8	0.0	0.0	268.8	5.0	4,201.4	4,206.5	

Sharing Environmental Protection and Management Targets (Japan)



Unit CO₂ Emissions from Energy Use Indices (2015 = 100)



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



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



Target Improve unit energy consumption by at least 1%



Improvement in Unit CO2 Emissions from Energy Use



Reduction of Volume of PRTR Substances Released



Reduction of Landfill Disposal Amount

TargetMaintain landfill disposal amount at or below fiscal 2015 levels.					
Results	The amount in fiscal 2017 was reduced by 13.1% 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.

Improvement in Unit Energy Consumption

Sharing Environmental Protection and Management Targets (Overseas)



Unit CO₂ Emissions from Energy Use Indices (2015 = 100)



Unit Water Usage Indices (2015 = 100)



Improvement in Unit Water Usage

on average.

Target

V

Results

Target Improve unit water usage by at least 1% annually c average.				
Results	Usage in fiscal 2017 worsened by 4.4% compared with fiscal 2015, failing to achieve the target.			

Note: • Data for previous fiscal years has been retroactively adjusted to enhance accuracy.

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. • SSIM Co. Ltd				

United States • Sumitomo Chemical Advanced Technologies LLC

Improvement in Unit Energy Consumption



Improvement in Unit CO2 Emissions from Energy Use

with fiscal 2015, achieving the target.

Improve unit CO₂ emissions by at least 1% annually

Emissions in fiscal 2017 improved by 2.1% compared