



Management of Chemical Substances and Reduction of Hazardous Substances

Concept of Management of Chemical Substances and Reduction of Hazardous Substances

Idemitsu Group, which manufactures and supplies petrochemical raw materials and products, has established the "General Principles of Quality Assurance" and works on improving the safety of production process workers and product users by conducting prior risk assessment of chemical substances, reducing and eliminating hazardous substances from production processes and products, and providing information on chemical substances contained in products. In order to minimize not only the impact on human health but also the negative impact on the ecosystem and the environment, we comply with stricter regulations on chemical substances in Japan and overseas.

Measures for Management of Chemical Substances and Reduction of Hazardous Substances

Management of PRTR-Designated Substances

Among the chemical substances regulated by the PRTR Law^{*1}, benzene, toluene, xylene, normal hexane and other highly volatile substances contained in crude oil, petroleum products, petrochemical raw materials will be partially evaporated into the atmosphere as VOC^{*2} whenever oil is transferred into or removed from storage tanks as well as when it is loaded onto tanker trucks and ships. To minimize such VOC emissions, the Idemitsu Group stores these chemicals in floating roof tanks that reduce evaporation, and carries out measures aimed at ensuring VOC recovery during transport. Chemical substances transferred to locations outside complexes are disposed of in compliance with the Waste Disposal and Public Cleansing Law.

*1 PRTR: Pollutant Release and Transfer Register

*2 VOC: Volatile Organic Compounds

Discharge and transfer of PRTR-Designated substances (Idemitsu FY2018 Results)

CAS No.	Substance name	Unit	Discharged amount			Transferred amount	Total
			Atmosphere	Water body	Soil		
1	water-soluble compounds of zinc	t	0.0	0.8	0.0	0.0	0.8
13	acetonitrile	t	0.0	0.0	0.0	1.1	1.1
20	2-aminoethanol	t	0.0	0.0	0.0	50.6	50.6
33	asbestos	t	0.0	0.0	0.0	34.4	34.4
37	4,4'-isopropylidenediphenol (commonly known as bisphenol A)	t	0.0	0.0	0.0	3.0	3.0
53	ethylbenzene	t	7.4	0.0	0.0	0.8	8.2
80	xylene	t	13.7	0.0	0.0	59.0	72.7
104	chlorodifluoromethane	t	0.8	0.0	0.0	0.0	0.8
186	dichloromethane	t	0.4	0.0	0.0	10.7	11.1
190	dicyclopentadiene	t	0.3	0.0	0.0	0.0	0.3
232	N, N-dimethylformamide (DMF)	t	0.0	0.0	0.0	9.5	9.5
240	styrene	t	28.0	0.0	0.0	6.5	34.5
262	tetrachloroethylene (TCE)	t	0.0	0.0	0.0	1.4	1.4
296	1,2,4-trimethylbenzene	t	1.1	0.0	0.0	0.0	1.1
297	1,3,5-trimethylbenzene	t	0.2	0.0	0.0	0.0	0.2
300	toluene	t	19.4	0.0	0.0	117.6	136.9
302	naphthalene	t	0.1	0.0	0.0	0.0	0.1
308	nickel	t	0.0	0.0	0.0	17.0	17.0
309	nickel compounds	t	0.0	0.0	0.0	0.6	0.6
321	vanadium compounds	t	0.0	0.0	0.0	29.0	29.0

CAS No.	Substance name	Unit	Discharged amount			Transferred amount	Total
			Atmosphere	Water body	Soil		
349	phenol	t	0.2	0.0	0.0	6.7	6.9
389	hexadecyltrimethylammonium chloride	t	0.0	9.8	0.0	0.0	9.8
392	n-hexane	t	40.4	0.0	0.0	2.6	43.0
400	benzene	t	4.3	0.0	0.0	0.0	4.4
406	polychlorinated biphenyls (PCB)	t	0.0	0.0	0.0	4.2	4.2
411	formaldehyde	t	0.0	0.0	0.0	33.6	33.6
412	manganese and its compounds	t	0.0	0.0	0.0	8.0	8.0
453	molybdenum and its compounds	t	0.0	0.0	0.0	22.0	22.0

* Scope of data: Hokkaido Refinery, Chiba Complex, Aichi Refinery, Tokuyama Complex, Cray Valley Idemitsu Corporation, Prime Polymer Co. Ltd., Anesaki Works, BASF Idemitsu Co., Ltd., Omaezaki Factory, Advanced Technology Research Laboratories, Technology & Engineering Center

* Chemicals are not listed if the total volume of discharge and transfer is less than 0.1 ton per year. Figures presented above may not be consistent with the totals since they are rounded off to the nearest one decimal place.

Discharge and transfer of PRTR-Designated substances (Showa Shell FY2018 Results)

CAS No.	Substance name	Unit	Discharged amount			Transferred amount	Total
			Atmosphere	Water body	Soil		
33	asbestos	t	0.0	0.0	0.0	0.2	0.2
53	ethylbenzene	t	1.0	0.0	0.0	0.0	1.0
80	xylene	t	5.9	0.0	0.0	0.0	5.9
243	dioxins	mg-TEQ	0.00	0.26	0.00	0.00	0.26
296	1,2,4-trimethylbenzene	t	0.6	0.0	0.0	0.0	0.6
297	1,3,5-trimethylbenzene	t	0.1	0.0	0.0	0.0	0.1
300	toluene	t	24.8	0.0	0.0	0.0	24.8
392	n-hexane	t	67.0	0.0	0.0	0.0	67.0
400	benzene	t	7.7	0.0	0.0	0.0	7.7

* Scope of data: Showa Yokkaichi Sekiyu Co., Ltd., TOA Oil Co., Ltd., Seibu Oil Co., Ltd.

* Reporting period: April 2018 to March 2019

* Chemicals are not listed if the total volume of discharge and transfer is less than 0.1 ton per year. Figures presented above may not be consistent with the totals since they are rounded off to the nearest one decimal place.

Controlling PCBs

In accordance with the Law concerning Special Measures for Promotion of Proper Treatment of PCB Wastes, at refineries and complexes, we appropriately store and manage oil containing polychlorinated biphenyls (PCBs) as well as transformers or other equipment that contain these substances. Under the same Law and the national Basic Plan for PCB Waste Treatment, final deadlines have been set for the completion of the treatment of all PCB waste and, accordingly, we are steadily carrying out the processing of such waste.

Managing CFCs

In accordance with the Act for Rational Use and Proper Management of Fluorocarbons, which came into effect on April 1, 2015, we have been implementing steps to prevent the leakage of fluorocarbons. The Safety, Environment (HSSE) & Quality Assurance Department undertakes annual inspections on the progress of changeover to non-fluorocarbon coolants at our facilities. As our refineries and complexes house a significant portion of our large-scale processing equipment containing CFCs and HCFCs, which damage the ozone layer, we have been replacing these equipment during the performance of major shutdown maintenance, aiming to eliminate the use of CFCs and HCFCs by March 2026.