

**Release and transfer volume of substances covered by PRTR law from domestic Kuraray plants,
research laboratories and affiliated companies in FY 2019 (Jan.-Dec.)**

1. This table shows the substance used more than one ton in each plant. (Specified Class 1 designated chemical substances are more than 0.5 ton).
2. Unit; metric ton (excepting dioxins; mg-TEQ for dioxins)
3. In this table, the values include affiliated companies in the plant.
Each company submits the official notice; therefore some figures in this table may not be same with the officially notified figures.
4. The official notice is two significant figure. (Unit; kg)

1. Kuraray Co., Ltd.

Okayama Plant (including Kuraray Engineering Co., Ltd., Kuraray Kuraflex Co., Ltd., Kuraray Okayama Spinning Co., Ltd., Kuraray Techno Co., Ltd.)
1-2-1, Kaigan-dori, Minami-ku, Okayama 702-8601, Japan

CAS No	substance	emissions volume				transfer volume			
		atmosphere	water area	soil	total	waste	recycled	sewage works	total
75-07-0	acetaldehyde	4.66			4.66				
141-43-5	2-aminoethanol								
60-00-4	ethylenediaminetetraacetic acid								
75-56-9	1,2-epoxypropane								
108-05-4	vinyl acetate (production)	27.57			27.57				
108-05-4	vinyl acetate (consumption)	22.43			22.43	1.10			1.10
124-40-3	dimethylamine	2.74			2.74	0.37			0.37
68-12-2	N,N-dimethylformamide	94.49	1.97		96.46	79.66			79.66
151-21-3	sodium dodecyl sulfate								
108-88-3	toluene	84.08	0.01		84.09	3.17			3.17
*	vanadium compound (vanadium conversion, production)					115.66			115.66
*	vanadium compound (vanadium conversion, consumption)						0.02		0.02
822-06-0	hexamethylene diisocyanate								
*	boron and its compounds		41.59		41.59				
—	poly(oxyethylene) alkyl ether								
9004-82-4	Sodium poly(oxyethylene) dodecyl ether sulfonate								
50-00-0	formaldehyde	0.47			0.47	0.05			0.05
1321-94-4	methylnaphthalene	0.01			0.01				
101-77-9	4,4'-Methylenedianiline								
101-68-8	methylene-bis-(4,1-phenylene)=di-isocyanate					1.27			1.27
—	dioxins	2.79E-05			2.79E-05	3.06E-06			3.06E-06

Kurashiki Plant (Tamashima area) (including Kuraray Tamashima Co., Ltd., Kuraray Techno Co., Ltd., Kurashiki Research Center.)

7471, Tamashimaotoshima, Kurashiki, Okayama 713-8550, Japan

CAS No	substance	emissions volume				transport volume			
		atmosphere	water area	soil	total	waste	recycled	sewage works	total
127-19-5	N,N-dimethylacetamide								
68-12-2	N,N-dimethylformamide					0.16			0.16
—	poly(oxyethylene) alkyl ether								
7705-08-0	ferric chloride								
1321-94-4	methylnaphthalene	0.12			0.12				
75-01-4	chloroethylene								
—	dioxins	8.22			8.22	347.53			347.53

Saijo Plant (including Kuraray Saijo Co., Ltd, Kuraray Techno Co., Ltd.)

892, Tsuitachi, Saijo, Ehime 793-8585, Japan

CAS No	substance	emissions volume				transport volume			
		atmosphere	water area	soil	total	waste	recycled	sewage works	total
75-07-0	acetaldehyde	0.41			0.41				
—	antimony and its compounds								
7705-08-0	ferric chloride					0.01			0.01
123-91-1	1,4-dioxane		2.76		2.76	0.04			0.04
100-21-0	terephthalic acid								
108-95-2	phenol	0.08	0.21		0.29	3.28			3.28
50-00-0	formaldehyde					0.01			0.01
111-30-8	glutaraldehyde								
1321-94-4	methylnaphthalene	0.37			0.37				
—	poly(oxyethylene) alkyl ether	1.20E-03			1.20E-03	0.001	1.07		1.07
9004-82-4	poly(oxyethylene) sodium sulfate dodecyl ether						4.50		4.50

* There is no dioxins.

Niigata Plant (including Kuraray Noritake Dental Inc., Kuraray Techno Co., Ltd.)

2-28, Kurashiki-cho, Tainai, Niigata 959-2691, Japan

CAS No	substance	emissions volume				transport volume			
		atmosphere	water area	soil	total	waste	recycled	sewage works	total
141-2-2	n-butyl acrylate	0.29			0.29	36.90			36.90
96-33-3	methyl acrylate	0.41			0.41	0.90	0.46		1.37
75-07-0	acetaldehyde	0.34			0.34				
75-86-5	acetone cyanohydrin (production)								
75-86-5	acetone cyanohydrin (consumption)								
78-67-1	2,2'-azodiisobutyronitrile								
149-57-5	2-ethylhexanoate					9.07			9.07
—	xylene								
108-05-4	vinyl acetate	4.23			4.23		7.90		7.90
—	inorganic cyanide compounds (hydrogen cyanide)						4.00E-03		4.00E-03
77-73-6	dicyclopentadiene					1.84			1.84
100-42-5	styrene	0.06			0.06	2.72	0.38		3.10
121-44-8	triethylamine					0.52			0.52
108-88-3	toluene	8.26	4.97		13.22	185.81	6.77		192.58
*	lead and its compounds					16.45			16.45
—	nickel compounds								
117-81-7	bis(2-ethylhexyl) phthalate					1.39			1.39
110-54-3	n-hexane	0.68			0.68	11.44			11.44
108-31-6	maleic anhydride								
79-41-4	methacrylic acid (production)	0.03			0.03				
79-41-4	methacrylic acid (consumption)					8.04			8.04
80-62-6	methyl methacrylate (production)	2.06			2.06	12.75			12.75
80-62-6	methyl methacrylate (consumption)	42.54			42.54	8.20	9.39		17.59
128-37-0	butylated hydroxytoluene					0.06			0.06
110-00-9	furan								
111-87-5	1-octanol	0.03			0.03				
67-66-3	chloroform								
—	dioxins								

Kashima Plant (including Kuraray Techno Co., Ltd.)

36, Towada, Kamisu, Ibaraki 314-0197, Japan

CAS No	substance	emissions volume				transport volume			
		atmosphere	water area	soil	total	waste	recycled	sewage works	total
—	zinc compounds (water-soluble)		0.87		0.87				
78-79-5	isoprene (production)	1.94			1.94			14.98	14.98
78-79-5	isoprene (consumption)	2.34			2.34				
149-57-5	2-ethylhexanoic acid							5.18	5.18
100-41-4	ethylbenzene	0.28			0.28				
75-21-8	ethylene oxide								
111-87-5	1-octanol	0.45			0.45			0.45	0.45
128-37-0	2,6-di-tert-butyl-4-methylphenol								
68-12-2	N,N-dimethylformamide								
100-42-5	styrene	1.23			1.23	1.61			1.61
100-21-0	terephthalic acid								
121-44-8	triethylamine								
108-88-3	toluene	0.25			0.25	29.95		5.85E-04	29.95
—	nickel compounds					0.19		6.15	6.34
106-99-0	1,3-butadiene	1.59			1.59				
110-54-3	n-hexane	30.27			30.27	0.18		0.19	0.37
—	poly(oxyethylene) alkyl ether							1.44	1.44
50-00-0	formaldehyde	0.10			0.10			31.20	31.20
108-31-6	maleic anhydride	0.17			0.17			0.05	0.05
101-68-8	methylenebis(4,1-phenylene) diisocyanate					0.54			0.54
*	molybdenum and its compounds							0.05	0.05
67-66-3	chloroform					0.30			0.30
—	dioxins		5.40E-04		5.40E-04			2.71E-06	2.71E-06

Tsurumi Plant (Former Kuraray Chemical Co., Ltd. has been acquired by Kuraray Co., Ltd. since FY2017)

4342, Tsurumi, Bizen, Okayama 705-0025, Japan

CAS No	substance	emissions volume				transport volume			
		atmosphere	water area	soil	total	waste	recycled	sewage works	total
108-88-3	toluene	7.20			7.20				
—	xylene	0.07			0.07				
95-63-6	1,2,4-trimethylbenzene	0.09			0.09				
1321-94-4	methylnaphthalene	0.01			0.01				

* There is no dioxins.

Tsukuba Research Center

41, Miyukigaoka, Tsukuba, Ibaraki 305-0841, Japan

* There is no substances covered by PRTR law.

* There is no dioxins.

2. Domestic Affiliated Companies

Ibuki Plant, Kuraray Plastics Co., Ltd. (including Ibuki Kosan Co., Ltd.)

4330, Osa, Tarui-cho, Fuwa-gun, Gifu 503-2122, Japan

CAS No	substance	emissions volume				transport volume			
		atmosphere	water area	soil	total	waste	recycled	sewage works	total
117-81-7	bis(2-ethylhexyl) phthalate					58.69			58.69
1321-94-4	methylnaphthalene	0.01			0.01				

* There is no dioxins.

Maruoka Plant, Kuraray Fastening Co., Ltd.

56, Nouno, Maruoka-cho, Sakai, Fukui 910-0273, Japan

CAS No	substance	emissions volume				transport volume			
		atmosphere	water area	soil	total	waste	recycled	sewage works	total
108-88-3	toluene	0.16			0.16	0.08			0.08

* There is no dioxins.

Okayama Plant, Kuraray Trading Co., Ltd

1099, Kawabe, Mabi-cho, Kurashiki, Okayama 710-1313, Japan

* There is no substances covered by PRTR law.

* There is no dioxins.