

**Release and transfer volume of substances covered by PRTR law from domestic Kuraray plants,
research laboratories and affiliated companies in FY 2018 (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	1.64			1.64				
141-43-5	2-aminoethanol								
75-56-9	1,2-epoxypropane								
108-05-4	vinyl acetate (production)	27.61			27.61				
108-05-4	vinyl acetate (consumption)	21.81			21.81	1.11			1.11
124-40-3	dimethylamine	2.47			2.47	0.32			0.32
68-12-2	N,N-dimethylformamide	86.73	1.54		88.28	55.62			55.62
151-21-3	sodium dodecyl sulfate								
108-88-3	toluene	83.99	0.01		84.00	3.20			3.20
*	vanadium compound (vanadium conversion, production)					141.56			141.56
*	vanadium compound (vanadium conversion, consumption)						0.02		0.02
822-06-0	hexamethylene diisocyanate								
*	boron and its compounds		45.11		45.11				
—	poly(oxyethylene) alkyl ether								
9004-82-4	Sodium poly(oxyethylene) dodecyl ether sulfonate								
50-00-0	formaldehyde	0.47			0.47	0.02			0.02
1321-94-4	methylnaphthalene	0.01			0.01				
101-77-9	4,4'-Methylenedianiline								
101-68-8	methylene-bis-(4,1-phenylene)=di-isocyanate					5.23			5.23
—	dioxins	1.15E-04			1.15E-04	4.10E-07			4.10E-07

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					0.15			0.15
68-12-2	N,N-dimethylformamide								
—	poly(oxyethylene) alkyl ether								
7705-08-0	ferric chloride								
1321-94-4	methylnaphthalene	0.07			0.07				
75-01-4	chloroethylene								
—	dioxins	14.55			14.55	108.67			108.67

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	0.05			0.05				
—	antimony and its compounds								
7705-08-0	ferric chloride					0.07			0.07
123-91-1	1,4-dioxane		2.35		2.35	0.05			0.05
100-21-0	terephthalic acid								
108-95-2	phenol	0.12	0.17		0.29	3.07			3.07
50-00-0	formaldehyde					0.01			0.01
111-30-8	glutaraldehyde								
1321-94-4	methylnaphthalene	0.11			0.11				
—	poly(oxyethylene) alkyl ether	1.20E-03			1.20E-03		1.01		1.01
9004-82-4	poly(oxyethylene) sodium sulfate dodecyl ether						4.80		4.80

* 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	0.34			0.34	42.78			42.78
96-33-3	methyl acrylate	0.44			0.44		0.69		0.69
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					8.85			8.85
—	xylene								
108-05-4	vinyl acetate	4.39			4.39		23.52		23.52
—	inorganic cyanide compounds (hydrogen cyanide)						4.00E-03		4.00E-03
75-09-2	dichloromethane								
77-73-6	dicyclopentadiene					2.08			2.08
100-42-5	styrene	0.07			0.07	2.65	0.36		3.00
121-44-8	triethylamine					0.79			0.79
108-88-3	toluene	7.51	0.45		7.96	192.90	4.50		197.39
*	lead and its compounds					16.04			16.04
—	nickel compounds								
117-81-7	bis(2-ethylhexyl) phthalate					2.58			2.58
110-54-3	n-hexane	0.67			0.67	11.56			11.56
108-31-6	maleic anhydride								
79-41-4	methacrylic acid (production)	0.04			0.04				
79-41-4	methacrylic acid (consumption)					7.85			7.85
80-62-6	methyl methacrylate (production)	1.96			1.96				
80-62-6	methyl methacrylate (consumption)	46.74			46.74	24.55	7.68		32.23
128-37-0	butylated hydroxytoluene					0.10			0.10
110-00-9	furan								
111-87-5	1-octanol	0.15			0.15				
67-66-3	chloroform					0.10			0.10
—	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)		0.78		0.78				
78-79-5	isoprene (production)	1.94			1.94			14.98	14.98
78-79-5	isoprene (consumption)	3.04			3.04				
149-57-5	2-ethylhexanoic acid							8.59	8.59
100-41-4	ethylbenzene	0.28			0.28				
75-21-8	ethylene oxide								
111-87-5	1-octanol	0.46			0.46				
128-37-0	2,6-di-tert-butyl-4-methylphenol								
68-12-2	N,N-dimethylformamide								
100-42-5	styrene	1.35			1.35	1.61			1.61
100-21-0	terephthalic acid					60.80			60.80
121-44-8	triethylamine								
108-88-3	toluene	0.27			0.27	11.51		0.00	11.52
—	nickel compounds							4.19	4.19
106-99-0	1,3-butadiene	2.87			2.87				
110-54-3	n-hexane	30.97			30.97	0.14		0.20	0.34
—	poly(oxyethylene) alkyl ether							1.54	1.54
50-00-0	formaldehyde	0.11			0.11			30.93	30.93
108-31-6	maleic anhydride							0.10	0.10
101-68-8	methylenebis(4,1-phenylene) diisocyanate								
*	molybdenum and its compounds		0.05		0.05				
67-66-3	chloroform					0.38			0.38
—	dioxins	0.44			0.44			1.88E-04	1.88E-04

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	13.12			13.12				
—	xylene	0.08			0.08				
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
97-77-8	Bis(diethylthiocarbamoyl) Disulfide								
117-81-7	bis(2-ethylhexyl) phthalate						49.78		49.78
1321-94-4	methylnaphthalene	0.02			0.02				

* 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	0.90			0.90	0.46			0.46

* 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.