

1. Kuraray Co., Ltd.

Remark: the affiliated companies located in the site are included.

Total

	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Water Usage	1,000 m ³	67,984	68,921	72,124	71,042	71,049
Waste Water	1,000 m ³	59,997	61,814	63,272	62,846	63,888
COD load	tons	480	501	532	514	554
Energy consumption (crude oil equivalent)	1,000 kl	398	403	413	434	433
GHG emissions	1,000 t-CO ₂ e (inside number: CO ₂ emissions)	1,190	1,218	1,250	1,319	1,310
		1,165	1,194	1,227	1,296	1,286
SOx emissions	tons	357	418	330	407	350
NOx emissions	tons	1,723	1,734	1,705	1,855	1,779
Soot and dust emissions	tons	26	27	27	33	31
Ozone-layer depleting substance emissions	tons of CFC equivalent	0.2	0.2	0.0	0.0	0.0
Substances covered under JCIA's voluntary PRTR management program	No. of items	87	82	77	82	85
	Release	888	891	905	976	902
	Transfer	1,112	1,141	1,146	1,292	1,201
Substances covered under PRTR law	No. of items	63	60	59	62	61
	Release	353	392	414	431	392
	Transfer	618	616	657	746	658
Waste	Generation	73,325	76,356	82,900	84,756	87,003
	Utilized internally	19,619	21,461	20,446	21,519	23,118
	Utilized externally	51,021	53,276	60,043	60,446	61,965
	Unutilized internally	1,969	643	889	998	764
	Unutilized externally	487	620	852	849	875

Okayama Plant (including Kuraray Engineering Co., Ltd., Kuraray Kuraflex Co., Ltd., Kuraray Okayama Spinning Co., Ltd., Kuraray Techno Co., Ltd.)

(1) Address: 1-2-1, Kaigan-dori, Minami-ku, Okayama City, Okayama Prefecture

(2) Site area: 663,000 m²

(3) ISO 14001: Certification No. JQA-EM0796 (Certified on March 24, 2000)

Main products: Kuralon, Kuralon K – II,
Clarino (man-made leather),
Kuraflex (dry-laid non-woven fabric)
EVAL resin and film, Poval resin

	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Water Usage	1,000 m ³	12,825	13,537	13,808	13,643	13,163
Waste Water	1,000 m ³	9,980	10,150	10,622	10,824	10,985
COD load	tons	190	189	192	182	193
Energy consumption (crude oil equivalent)	1,000 kl	186	191	193	197	191
GHG emissions	1,000 t-CO ₂ e (inside number: CO ₂ emissions)	620	638	642	654	626
		619	638	641	652	624
SOx emissions	tons	125	173	114	209	106
NOx emissions	tons	1,110	1,132	1,089	1,232	1,144
Soot and dust emissions	tons	11	13	13	16	14
Ozone-layer depleting substance emissions	tons of CFC equivalent	0.2	0.2	0.0	0.0	0.0
Substances covered under JCIA's voluntary PRTR management program	No. of items	29	33	34	31	27
	Release	474	478	529	511	480
	Transfer	303	271	268	316	356
Substances covered under PRTR law	No. of items	19	20	21	20	17
	Release	263	291	309	292	271
	Transfer	221	183	168	210	207
Waste	Generation	25,950	26,030	29,684	25,793	25,425
	Utilized internally	1,955	2,024	1,377	0	0
	Utilized externally	22,124	23,078	27,255	24,489	24,606
	Unutilized internally	1,669	596	785	933	758
	Unutilized externally	151	320	267	372	60

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

(1) Address: 7471, Tamashima-otoshima, Kurashiki City, Okayama Prefecture

(2) Site area: 410,000 m²

(3) ISO 14001: Certification No. JQA-EM1213 (Certified on December 22, 2000)

Main products: Polyester fiber,
Poval film,

	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Water Usage	1,000 m ³	7,241	7,105	7,080	7,042	7,072
Waste Water	1,000 m ³	7,212	7,214	6,776	6,486	6,555
COD load	tons	28	31	37	39	44
Energy consumption (crude oil equivalent)	1,000 kl	21	21	21	25	24
GHG emissions	1,000 t-CO ₂ e (inside number: CO ₂ emissions)	69	84	92	105	106
		48	63	73	85	85
SOx emissions	tons	72	77	57	33	51
NOx emissions	tons	107	103	87	92	87
Soot and dust emissions	tons	0.5	0.5	0.5	0.8	2.7
Ozone-layer depleting substance emissions	tons of CFC equivalent	0.0	0.0	0.0	0.0	0.0
Substances covered under JCIA's voluntary PRTR management program	No. of items	12	12	12	10	10
	Release	29	32	31	31	29
	Transfer	58	68	63	76	40
Substances covered under PRTR law	No. of items	7	8	8	6	5
	Release	0	0	0	0	0
	Transfer	2	1	2	0	0
Waste	Generation	12,606	12,605	12,455	11,194	13,178
	Utilized internally	860	943	362	2,378	3,489
	Utilized externally	11,736	11,637	12,069	8,796	9,657
	Unutilized internally	0	0	0	0	0
	Unutilized externally	10	25	25	20	33

Saijo Plant (including Kuraray Saijo Co., Ltd, Kuraray Techno Co., Ltd.)
 (1) Address: 892, Tsuitachi, Saijo City, Ehime Prefecture
 (2) Site area: 541,000 m²
 (3) ISO 14001: Certification No. JQA-EM1185 (Certified on December 15, 2000)

Main products: Poval film, Melt-blown Non-woven fabric,
 VECTRAN polyarylate fiber,
 GENESTAR (heat resistant polyamide resin),
 Polyester filament, KURAGEL PVA gel

	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Water Usage	1,000 m ³	13,999	14,277	15,221	14,175	14,503
Waste Water	1,000 m ³	12,155	12,283	12,641	12,435	12,535
COD load	tons	23	32	23	22	23
Energy consumption (crude oil equivalent)	1,000 kl	54	52	55	56	58
GHG emissions (inside number: CO2 emissions)	1,000 t-CO2e	185	178	190	188	193
		185	178	190	188	192
SOx emissions	tons	143	142	149	148	154
NOx emissions	tons	400	400	431	397	407
Soot and dust emissions	tons	12	12	10	13	9
Ozone-layer depleting substance emissions	tons of CFC equivalent	0.0	0.0	0.0	0.0	0.0
Substances covered under JCIA's voluntary PRTR management program	No. of items	15	16	16	16	16
	Release	148	140	135	144	144
	Transfer	5	5	5	5	4
Substances covered under PRTR law	No. of items	9	10	10	10	10
	Release	3	3	3	3	3
	Transfer	3	2	2	3	4
Waste		11,637	12,548	14,206	14,547	13,802
	Utilized internally	183	202	153	0	0
	Utilized externally	11,316	12,199	13,846	14,304	13,572
	Unutilized internally	0	0	0	0	0
	Unutilized externally	138	147	207	232	220

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

(1) Address: 2-28, Kurashiki-cho, Tainai City, Niigata Prefecture
 (2) Site area: 924,000 m²
 (3) ISO 14001: Certification No. JQA-EM0801 (Certified on March 31, 2000)

Main products: Methacrylic resin for molding,
 Poval resin,
 Dental materials
 KURARITY (acrylic thermoplastic elastomer)

	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Water Usage	1,000 m ³	31,363	31,412	33,428	33,330	33,160
Waste Water	1,000 m ³	27,793	29,142	30,194	30,080	30,651
COD load	tons	157	161	180	170	191
Energy consumption (crude oil equivalent)	1,000 kl	63	63	65	65	65
GHG emissions (inside number: CO2 emissions)	1,000 t-CO2e	137	138	141	139	139
		135	136	139	138	138
SOx emissions	tons	13	21	6	2	10
NOx emissions	tons	55	52	51	62	61
Soot and dust emissions	tons	0.1	0.0	0.0	0.0	0.0
Ozone-layer depleting substance emissions	tons of CFC equivalent	0.0	0.0	0.0	0.0	0.0
Substances covered under JCIA's voluntary PRTR management program	No. of items	46	52	41	37	46
	Release	104	106	112	120	112
	Transfer	609	411	466	482	386
Substances covered under PRTR law	No. of items	30	35	27	27	30
	Release	60	59	62	73	63
	Transfer	339	326	400	423	313
Waste	Generation	14,147	15,200	16,256	16,989	16,531
	Utilized internally	9,612	10,548	10,654	10,733	10,542
	Utilized externally	4,026	4,147	4,829	5,283	5,254
	Unutilized internally	246	0	0	0	0
	Unutilized externally	89	37	95	40	463

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

(1) Address: 36, Touwada, kamisu City, Ibaraki Prefecture

(2) Site area: 408,000 m²

(3) ISO 14001: Certification No. JQA-EM0364 (Certified on March 12, 1999)

Main products: SEPTON (thermoplastic elastomer),
HYBRAR (thermoplastic elastomer),
GENESTAR (heat resistant polyamide resin),
Industrial cleaner

	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Water Usage	1,000 m ³	2,229	2,305	2,466	2,461	2,703
Waste Water	1,000 m ³	2,234	2,407	2,743	2,665	2,773
COD load	tons	81	88	100	98	101
Energy consumption (crude oil equivalent)	1,000 kl	71	73	76	80	82
GHG emissions	1,000 t-CO ₂ e (inside number: CO ₂ emissions)	171	172	178	190	201
		170	172	178	190	201
SOx emissions	tons	4	4	4	6	8
NOx emissions	tons	50	48	47	51	53
Soot and dust emissions	tons	2.4	1.8	3.6	2.0	4.0
Ozone-layer depleting substance emissions	tons of CFC equivalent	0.0	0.0	0.0	0.0	0.0
Substances covered under JICA's voluntary PRTR management program	No. of items	38	42	38	41	40
	Release	tons	129	133	98	163
	Transfer	tons	363	376	345	413
Substances covered under PRTR law	No. of items	24	26	24	25	26
	Release	tons	25	38	40	56
	Transfer	tons	89	98	84	110
Waste	Generation	tons	8,756	9,883	10,146	10,368
	Utilized internally	tons	7,009	7,744	7,901	8,408
	Utilized externally	tons	1,601	2,025	1,897	1,780
	Unutilized internally	tons	54	47	104	65
	Unutilized externally	tons	92	84	252	115

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

(1) Address: 4342, Tsurumi, Bizen City, Okayama Prefecture

(2) Site area: 89,000 m²

(3) ISO 14001: Certification No. JQA-EM5426 (Certified on July 7, 2006)

Main products: Activated carbon,
high performance activated carbon,

	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Water usage	1,000 m ³	333	297	317	357	420
Waste water	1,000 m ³	229	191	224	291	312
COD load	tons	2	1	1	2	2
Energy consumption (crude oil equivalent)	1,000 kl	9	8	9	9	10
GHG emissions	1,000 t-CO ₂ e (inside number: CO ₂ emissions)	42	38	43	37	39
		42	38	43	37	39
SOx emissions	tons	12	12	14	8	20
NOx emissions	tons	27	26	19	21	26
Soot and dust emissions	tons	2	1	1	1	2
Ozone-layer depleting substance emissions	tons of CFC equivalent	0	0	0	0	0
Substances covered under JICA's voluntary PRTR management program	No. of items	4	6	6	10	5
	Release	tons	15	17	12	6
	Transfer	tons	0	0	0	0
Substances covered under PRTR law	No. of items	3	5	5	6	4
	Release	tons	15	16	12	6
	Transfer	tons	0	0	0	0
Waste	Generation	tons	6,251	5,171	5,676	5,745
	Utilized internally	tons	0	0	0	0
	Utilized externally	tons	6,243	5,160	5,650	5,680
	Unutilized internally	tons	0	0	0	0
	Unutilized externally	tons	8	12	27	65

2. Domestic Affiliated Companies

Total

	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Water usage	1,000 m ³	921	895	955	783	755
Waste water	1,000 m ³	805	780	823	719	682
COD load	tons	2	2	2	0	0
Energy consumption (crude oil equivalent)	1,000 kl	13	12	14	5	5
GHG emissions (inside number: CO ₂ emissions)	1,000 t-CO ₂ e	50	47	53	11	11
		50	47	53	11	11
SOx emissions	tons	12	12	15	0	0
NOx emissions	tons	28	27	20	1	1
Soot and dust emissions	tons	2	1	1	0	0
Ozone-layer depleting substance emissions	tons of CFC equivalent	0	0	0	0	0
Substances covered under JClA's voluntary PRTR management program	No. of items	13	14	12	6	7
	Release	97	119	52	90	102
Substances covered under PRTR law	Transfer	13	12	3	2	2
	No. of items	7	8	7	3	4
Waste	Release	17	18	13	1	1
	Transfer	5	5	1	0	0
Waste	Generation	7,767	6,762	7,076	1,671	1,674
	Utilized internally	55	57	38	25	25
	Utilized externally	7,514	6,453	6,757	1,174	1,298
	Unutilized internally	0	5	0	0	0
	Unutilized externally	198	238	397	472	351

Ibuki Plant, Kuraray Plastics Co., Ltd.

(1) Address: 4330, Osa, Tarui-cho, Fuwa-gun, Gifu Prefecture

(2) Site area: 74,900 m²

(3) ISO 14001: Certification No. JQA-EM2934 (Certified on January 17, 2003)

Main products: Hoses, driving pipes, laminates, compounds

	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Water usage	1,000 m ³	499	514	549	682	641
Waste water	1,000 m ³	499	514	553	682	642
COD load	tons	0.3	0.4	0.8	0.3	0.0
Energy consumption (crude oil equivalent)	1,000 kl	2	1	2	2	2
GHG emissions (inside number: CO ₂ emissions)	1,000 t-CO ₂ e	3	3	3	3	3
		3	3	3	3	3
SOx emissions	tons	0.3	0.2	0.2	0.1	0.0
NOx emissions	tons	0.7	0.5	0.4	0.5	0.2
Soot and dust emissions	tons	0.1	0.1	0.1	0.1	0.0
Ozone-layer depleting substance emissions	tons of CFC equivalent	0	0	0	0	0
Substances covered under JClA's voluntary PRTR management program	No. of items	8	8	7	5	5
	Release	56	73	34	85	98
Substances covered under PRTR law	Transfer	8	9	0	0	0
	No. of items	5	5	4	2	2
Waste	Release	0.3	0.4	0.0	0.0	0.0
	Transfer	3	4	0	0	0
Waste	Generation	774	787	624	547	716
	Utilized internally	0	0	0	0	0
	Utilized externally	706	711	538	510	680
	Unutilized internally	0	5	0	0	0
	Unutilized externally	68	61	202	37	36

Kuraray Fastening Co., Ltd.

(1) Address: 56, Noune, Maruoka-cho, Sakai-gun, Fukui prefecture

(2) Site area: 22,950 m²

(3) ISO 14001: Certification No. JQA-EM3326 (Certified on August 22, 2003)

Main products: MAGICTAPE (hook and loop fastener), MAGILOCK (molded plastic hook and loop fastener)

	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Water usage	1,000 m ³	60	50	44	34	41
Waste water	1,000 m ³	57	48	42	33	37
COD load	tons	—	—	—	—	—
Energy consumption (crude oil equivalent)	1,000 kl	2	2	2	2	2
GHG emissions (inside number: CO ₂ emissions)	1,000 t-CO ₂ e	3	4	4	4	4
		3	4	4	4	4
SOx emissions	tons	—	—	—	—	—
NOx emissions	tons	—	—	—	—	—
Soot and dust emissions	tons	—	—	—	—	—
Ozone-layer depleting substance emissions	tons of CFC equivalent	0	0	0	0	0
Substances covered under JClA's voluntary PRTR management program	No. of items	3	3	4	3	2
	Release	6	6	6	5	5
Substances covered under PRTR law	Transfer	3	3	3	2	2
	No. of items	2	2	2	2	1
Waste	Release	1	1	1	1	1
	Transfer	1	0	1	0	0
Waste	Generation	263	269	228	269	271
	Utilized internally	0	0	0	0	0
	Utilized externally	250	254	216	250	247
	Unutilized internally	0	0	0	0	0
	Unutilized externally	13	15	12	20	24

Okayama Plant, Kuraray Trading Co., Ltd.

(1) Address: 1099, Aza-Shinden, Oaza-Kawabe, Mabi-cho, Kibi-gun, Okayama Prefecture

(2) Site area: 5,780 m²

Main products: Industrial resin belts

	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	
Water usage	1,000 m ³	4	4	4	4	3	
Waste water	1,000 m ³	4	4	4	4	3	
COD load	tons	—	—	—	—	—	
Energy consumption (crude oil equivalent)	1,000 kl	0.2	0.2	0.2	0.2	0.1	
GHG emissions (inside number: CO ₂ emissions)	1,000 t-CO ₂ e	0.6	0.6	0.5	0.5	0.3	
		0.6	0.6	0.5	0.5	0.3	
SOx emissions	tons	0.2	0.2	0.2	0.2	0.1	
NOx emissions	tons	0.4	0.4	0.4	0.4	0.3	
Soot and dust emissions	tons	0.1	0.1	0.1	0.1	0.1	
Ozone-layer depleting substance emissions	tons of CFC equivalent	0	0	0	0	0	
Substances covered under JCIA's voluntary PRTR management program	No. of items	2	2	2	2	2	
	Release	tons	0.2	0.2	0.2	0.2	0.1
Substances covered under PRTR law	Transfer	tons	0	0	0	0	
	No. of items		0	0	0	0	
Waste	Release	tons	—	—	0	0	
	Transfer	tons	—	—	0	0	
Waste	Generation	tons	45	49	46	41	25
	Utilized internally	tons	40	45	23	0	0
	Utilized externally	tons	3	3	21	40	24
	Unutilized internally	tons	0	0	0	0	0
	Unutilized externally	tons	2	1	2	1	1

3. Overseas Affiliated Companies

<p> EVAL Europe N.V. Kuraray Europe GmbH, PVA/PVB Division Kuraray Europe GmbH, Trosifol Division Kuraray Europe GmbH, OOO Trosifol Kuraray Europe GmbH. Holesov works Kuraray America Inc. EVAL BU Kuraray America Inc. SEPTON BU Kuraray America Inc. PVOH BU Kuraray America Inc. Fayetteville works Kuraray America Inc. La Porte works Kuraray America Inc. Washington works Kuraray Korea Ulsan works Kuraray Asia Pacific Pte.Ltd. MonoSol, LLC. La Porte Plant MonoSol, LLC. Portage Plant MonoSol, LLC. Duneland Plant MonoSol, LLC. Hartlebury Plant Plantic Technologies Ltd. Kuraray Magictape (Shanghai) Co., Ltd. Kuraray Chemical (Ningxia) Environmental Industry Co., Ltd. Kuraray Methacrylate (Zhang Jia Gang) Co., Ltd. </p>	<p> Calgon Carbon Corp., Big Sandy Plant Calgon Carbon Corp., Pearl River Plant Calgon Carbon Corp., Gila Bend Plant Calgon Carbon Corp., Neville Island Plant Calgon Carbon Corp., Columbus Plant Calgon Carbon Corp., North Tonawanda Plant Calgon Carbon Corp., Parentis Plant Calgon Carbon Corp., Feluy Plant Calgon Carbon Corp., Saint Bauzile Plant Calgon Carbon Corp., Riom Montagnes Plant Calgon Carbon Corp., Legnago Plant Calgon Carbon Corp., Tipton Plant Calgon Carbon Corp., Foggia Plant Calgon Carbon Corp., Ashton Plant Calgon Carbon Corp., Durham Plant Calgon Carbon Corp., Suzhou Plant </p>
--	--

	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	
Water usage (excepte sea water)	1,000 m ³	7,340	9,357	9,986	11,092	17,242	
Waste water	1,000 m ³	5,820	6,484	7,987	8,795	7,757	
TOC release	tons	2,316	2,340	2,229	2,637	2,462	
Energy consumption (crude oil equivalent)	1,000 kl	355	443	437	500	595	
CO ₂ emmissions	1,000 tons of CO ₂ equivalent	753	952	933	1,032	1,868	
SOx emmissions	tons	0	0	2	1	1,081	
NOx emmissions	tons	23	38	53	51	439	
Substances covered under PRTR law	No. of items	16	14	14	14	11	
	Emission	tons	300	328	483	790	633
Waste	Transfer	tons	2,917	5,631	8,158	6,504	7,680
	Generation	tons	22,445	34,649	39,330	37,331	76,277
	Utilization	tons	9,146	15,551	15,708	16,196	30,483
	Landfill	tons	3,900	5,783	8,718	9,043	24,983

* Since TOC emissions are treated by outside wastewater treatment businesses, the amount of discharge to public water areas is substantially lower than the above figures.

* Data for overseas affiliated companies is not included in the Kuraray Group total in the Kuraray CSR Report.