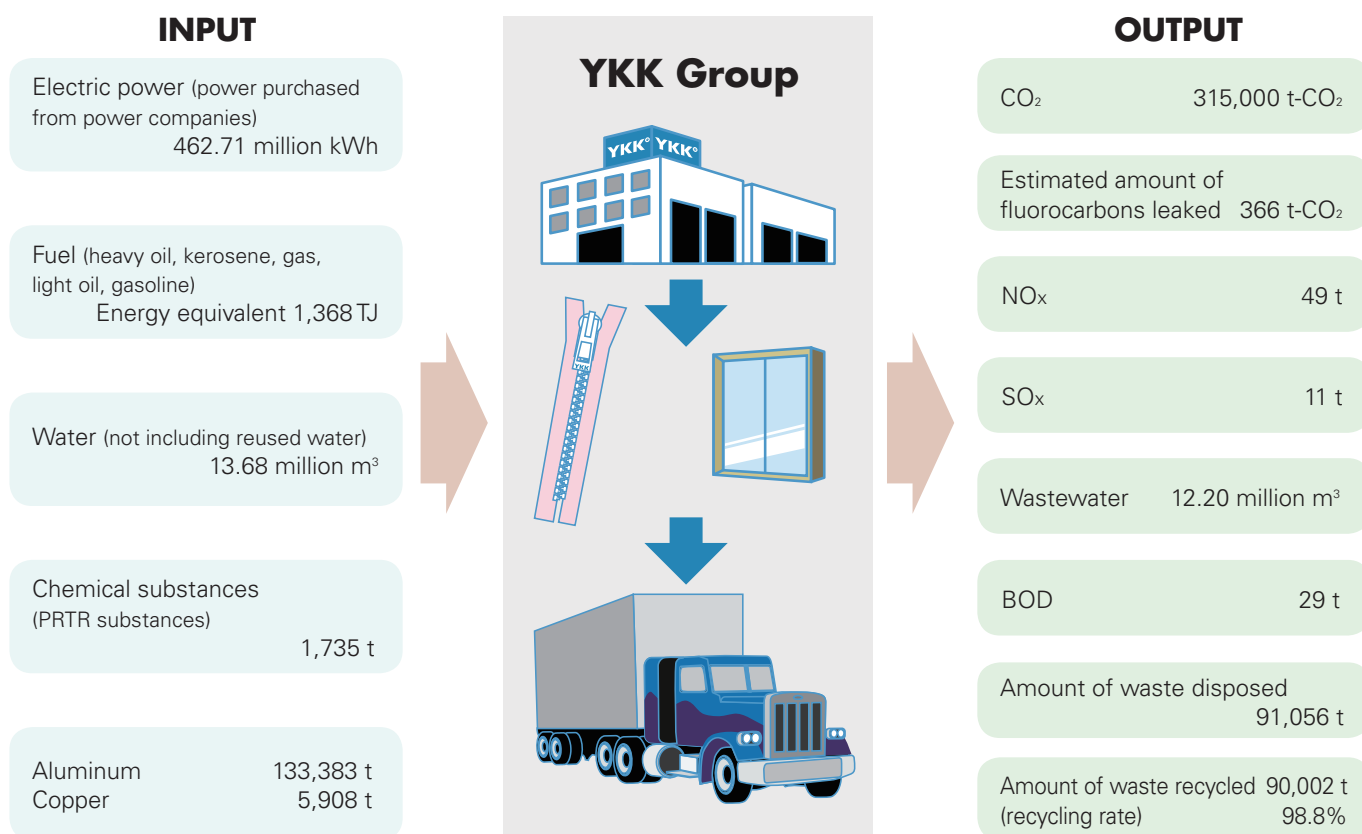
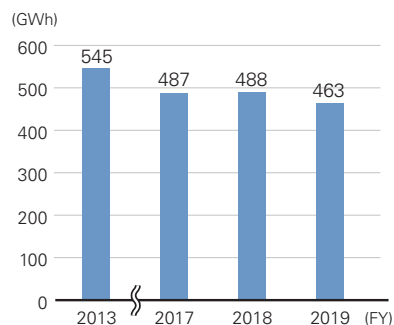


Environmental impact mass-balance of YKK Group plants/offices in Japan (fiscal 2019)

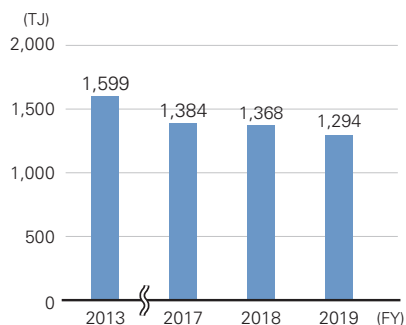


Changes in energy consumption per type (all YKK Group locations in Japan)

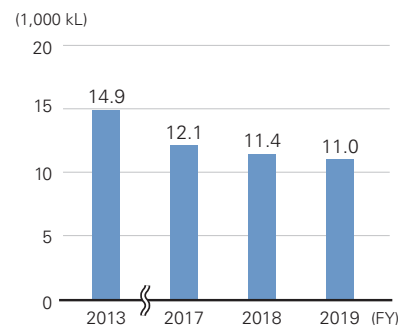
Electric power



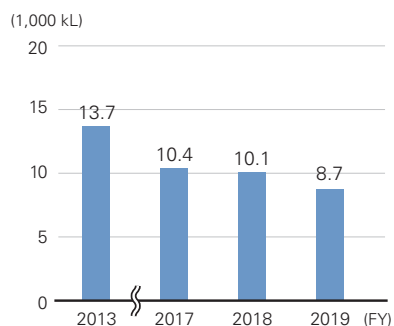
Fuel total (energy equivalent)



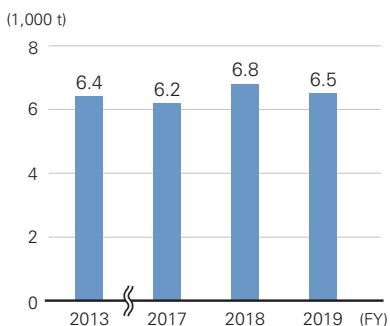
Heavy fuel oil A



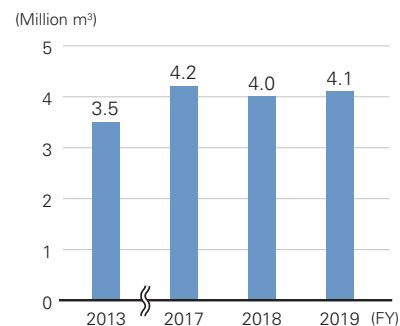
Kerosene



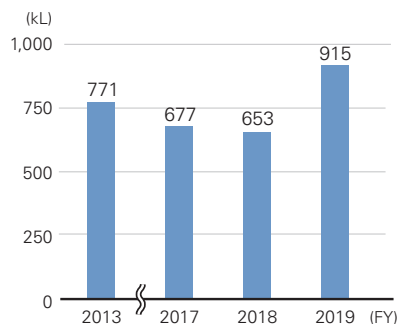
LPG



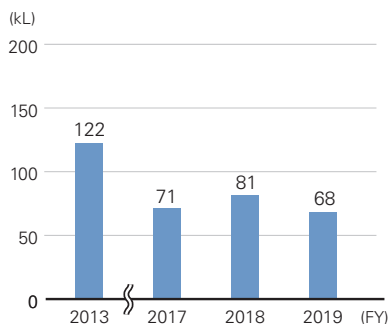
Natural gas



Light oil

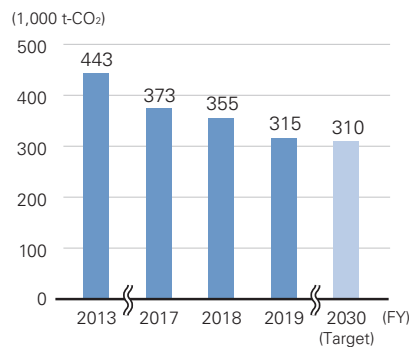


Gasoline



Change in CO<sub>2</sub> emissions (all YKK Group locations in Japan)

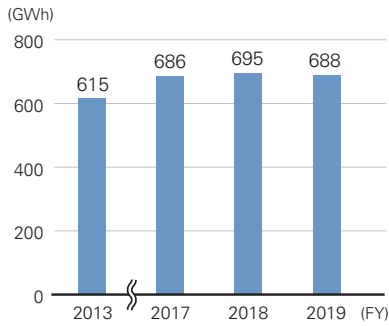
CO<sub>2</sub> emissions performance



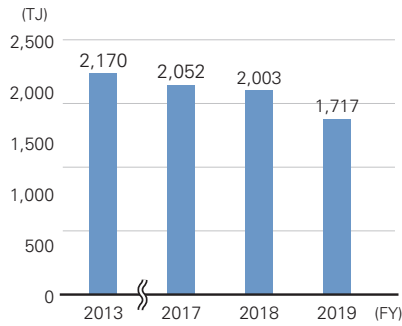
Note: Based on the YKK Group's Greenhouse Gas (GHG) Calculation Rules, which require the most recent official conversion factor for CO<sub>2</sub>/kWh be used (the factor changes to reflect market changes). The Group's CO<sub>2</sub> emissions in fiscal 2019 were down 28.9% compared with fiscal 2013.

Changes in energy consumption per type (all foreign YKK Group locations)

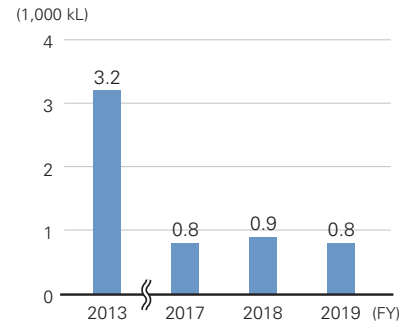
Electric power



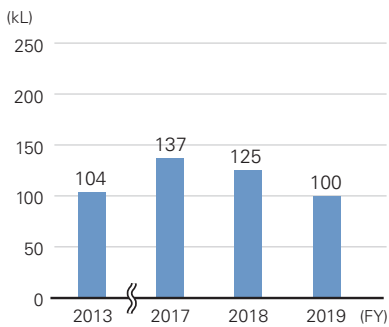
Fuel total (energy equivalent)



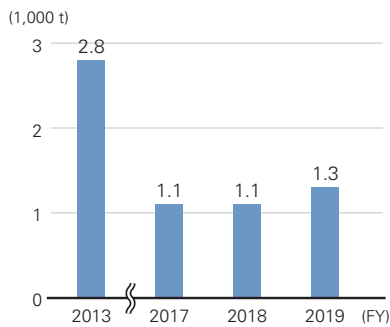
Heavy fuel oil A



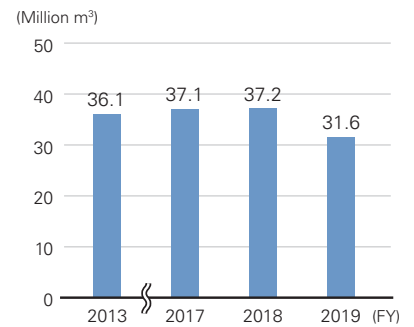
Kerosene



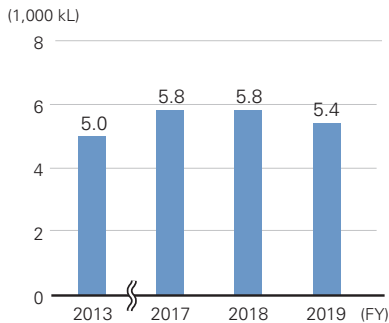
LPG



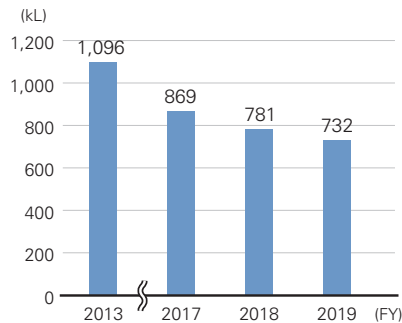
Natural gas



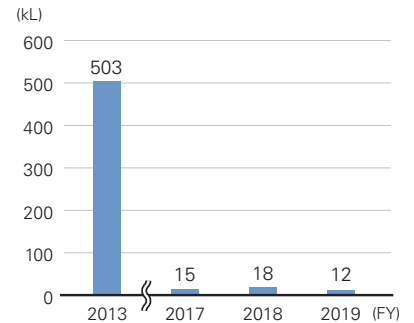
Light oil



Gasoline

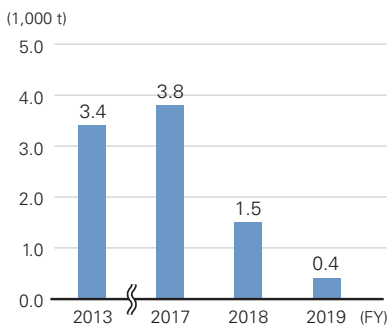


Heavy fuel oil C

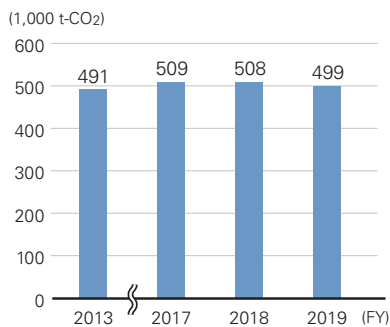


Changes in total CO<sub>2</sub> emissions (all foreign YKK Group locations)

Coal

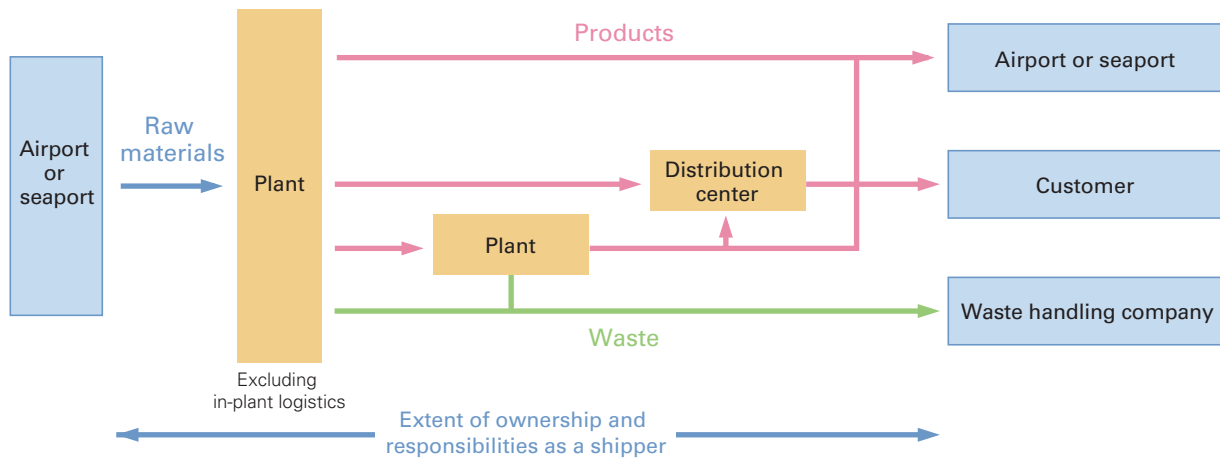


CO<sub>2</sub> emissions performance

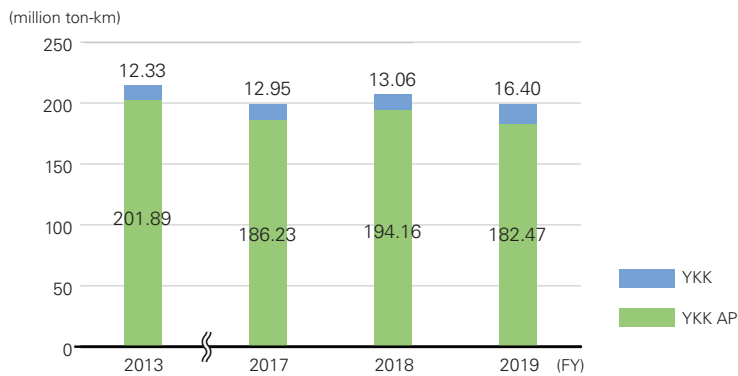


Note: Based on the YKK Group's Greenhouse Gas (GHG) Calculation Rules, which require the most recent official conversion factor for CO<sub>2</sub>/kWh be used (the factor changes to reflect market changes). The Group's CO<sub>2</sub> emissions in fiscal 2019 were up 1.6% compared with fiscal 2013.

Extent of responsibility and results related to transportation amounts as a shipper (all YKK Group locations in Japan)



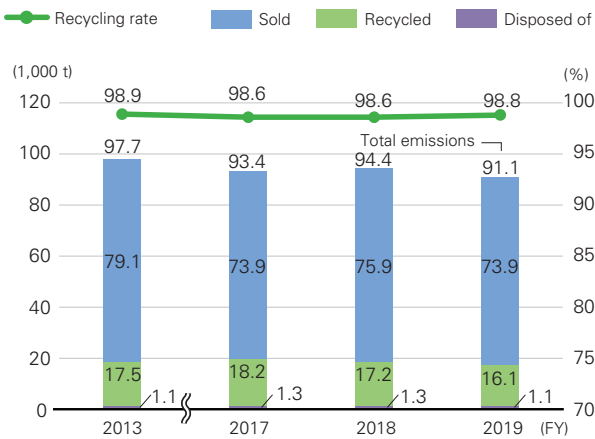
Transported amount



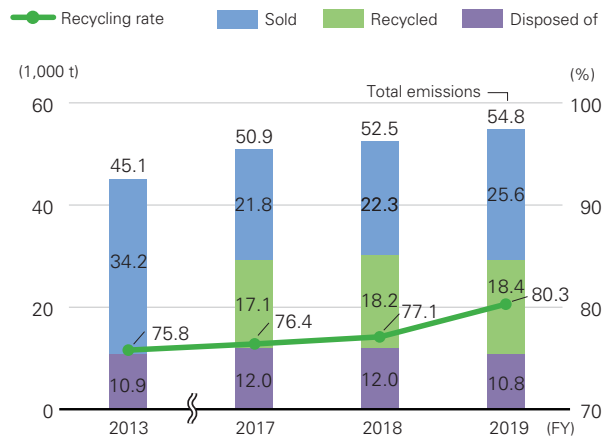
Specified shipper: A company that consigns cargo transport of 30 million ton-km or more a year within its business operations. YKK AP is classed as a specified shipper; YKK is not classed as a specified shipper.

Changes in waste production and recycling rate (all domestic and foreign YKK Group locations)

All YKK Group locations in Japan



All foreign YKK Group locations



\* The amount of recycling in FY2013 is included in the sold amount.

## Atmosphere (YKK Group main production locations in Japan)

Equipment	Plant	Soot and dust [g/Nm <sup>3</sup> ]					Nitrogen oxides [ppm]				
		National emissions standard	Municipal agreed value	Voluntary emissions standard	Highest value measured in fiscal 2019	Assessment	National emissions standard	Municipal agreed value	Voluntary emissions standard	Highest value measured in fiscal 2019	Assessment
Boilers	Tohoku	0.25	0.20	0.19	0.050	Acceptable	350	350	325	220	Acceptable
	Kurobe	0.30	–	0.20	Below 0.01	Acceptable	180	–	180	69	Acceptable
	Shikoku	0.10	–	0.01	Below 0.0043	Acceptable	150	–	75	28	Acceptable
	Kyushu	0.30	0.10	0.020	Below 0.01	Acceptable	180	150	120	90	Acceptable
Foundry melting furnaces	Tohoku	0.30	0.10	0.09	0.031	Acceptable	200	200	70	59	Acceptable
	Kurobe	0.20	–	0.15	0.01	Acceptable	180	–	90	55	Acceptable
	Shikoku	0.20	–	0.02	0.0085	Acceptable	200	–	100	51	Acceptable
	Kyushu	0.20	0.30	0.10	Below 0.01	Acceptable	180	170	120	64	Acceptable
Foundry heat treatment furnaces	Tohoku	0.25	–	0.23	0.010	Acceptable	160	160	145	130	Acceptable
Foundry holding furnaces	Kurobe	0.20	–	0.13	0.03	Acceptable	180	–	140	63	Acceptable
	Shikoku	0.20	–	0.02	Below 0.0035	Acceptable	180	–	170	60	Acceptable
	Kyushu	0.20	0.01	0.008	Below 0.005	Acceptable	150	150	120	32	Acceptable
Extrusion heat treatment furnaces	Tohoku	0.25	–	0.23	0.010	Acceptable	180	180	–	49	Acceptable
	Kurobe	0.20	–	0.1	Below 0.01	Acceptable	180	–	90	47	Acceptable
	Shikoku	0.20	–	0.02	0.014	Acceptable	180	–	150	42	Acceptable
	Kyushu	0.20~0.25	0.03	0.02	Below 0.01	Acceptable	180	150	100	48	Acceptable
Surface treatment drying furnaces	Tohoku	0.25	–	0.23	0.001	Acceptable	230	230	55	43	Acceptable
	Kurobe	0.20	–	0.10	Below 0.01	Acceptable	230	–	50	38	Acceptable
	Shikoku	0.20	–	0.02	Below 0.0079	Acceptable	230	–	75	32	Acceptable
	Kyushu	0.20	0.01	0.008	Below 0.005	Acceptable	–	130	100	60	Acceptable

## Water quality (YKK Group main production locations in Japan)

Unit: mg/l (except pH)

Item	Plant	National water emission standard	Prefectural water emission standard	Municipal agreed value	Voluntary management standard	Highest value measured in fiscal 2019	Assessment
pH	Tohoku	5.8~8.6 <sup>*1</sup>	5.8~8.6 <sup>*1</sup>	6.5~8.5	6.6~8.1	Min. 6.7 Max. 8.0	Acceptable
	Saitama MADO (window)	5.8~8.6 <sup>*1</sup>	5.8~8.6 <sup>*1</sup>	–	6.1~8.3	Min. 6.5 Max. 7.7	Acceptable
	Kurobe	5.8~8.6 <sup>*1</sup>	5.8~8.6 <sup>*1</sup>	5.8~8.6	6.0~8.4	Min. 6.9 Max. 7.5	Acceptable
	Shikoku	5.8~8.6 <sup>*1</sup>	5.8~8.6 <sup>*1</sup>	–	6.0~8.4	Min. 6.9 Max. 7.6	Acceptable
	Kyushu	5.0~9.0 <sup>*2</sup>	5.0~9.0 <sup>*2</sup>	5.8~8.6	6.3~8.1	Min. 6.8 Max. 7.6	Acceptable
BOD	Tohoku	120 <sup>*1</sup>	120	20	9.5	5.4	Acceptable
	Saitama MADO (window)	120 <sup>*1</sup>	20	–	3.4	1.3	Acceptable
	Kurobe	120 <sup>*1</sup>	15	15	4	6.2	Acceptable
	Shikoku	120 <sup>*1</sup>	30	–	20	7.2	Acceptable
COD	Kurobe	120 <sup>*2</sup>	25	20	10	13.0	Acceptable
	Saitama MADO (window)	120 <sup>*2</sup>	120	–	16	11.3	Acceptable
	Shikoku	120 <sup>*2</sup>	25	–	15	10.5	Acceptable
	Kyushu	120 <sup>*2</sup>	20	20	15	12.2	Acceptable
Suspended solids	Tohoku	150	150	20	3.3	3.3	Acceptable
	Saitama MADO (window)	150	50	–	6	2.7	Acceptable
	Kurobe	150	90	–	5	3.0	Acceptable
	Shikoku	150	25	–	5	3.0	Acceptable
	Kyushu	150	20	20	8	4.0	Acceptable
Oil	Tohoku	5	5	2	1	0.5	Acceptable
	Kurobe	5	–	3	Below 0.5	Below 0.5	Acceptable
	Shikoku	5	3	–	2	Below 1	Acceptable
	Kyushu	5	5	5	1	0.7	Acceptable
Cyanide	Kurobe	1	–	–	Below 0.5	Below 0.5	Acceptable
Nitrogen	Saitama MADO (window)	–	120	–	40	29.6	Acceptable
	Shikoku	–	60	–	25	18.6	Acceptable
	Kyushu	–	60	–	30	23.0	Acceptable
Phosphorus	Saitama MADO (window)	–	16	–	2	1.9	Acceptable
	Shikoku	–	8	–	0.8	0.27	Acceptable
	Kyushu	–	8	–	0.5	0.04	Acceptable
Hexavalent chromium compounds	Kurobe	0.5	–	0.1	Below 0.02	Below 0.02	Acceptable

\*1 Standard when discharging into rivers \*2 Standard when discharging into ocean

## Groundwater inspections (Kurobe area)

	Substance	Unit	Environmental standard*	Measurement results Fiscal 2019	Assessment
Volatile organic compounds	Dichloromethane	mg/l	0.02 or less	Below 0.002	Acceptable
	Carbon tetrachloride	mg/l	0.002 or less	Below 0.0002	Acceptable
	1,1-Dichloroethylene	mg/l	0.02 or less	Below 0.002	Acceptable
	Cis-1,2-Dichloroethylene	mg/l	0.04 or less	Below 0.004	Acceptable
	1,1,1-Trichloroethane	mg/l	1 or less	Below 0.0005	Acceptable
	Trichloroethylene	mg/l	0.03 or less	Below 0.002	Acceptable
	Tetrachloroethylene	mg/l	0.01 or less	Below 0.0005	Acceptable
Heavy metals	Cadmium	mg/l	0.01 or less	Below 0.001	Acceptable
	Cyanide	mg/l	Not detected	Below 0.1	Acceptable
	Lead	mg/l	0.01 or less	Below 0.005	Acceptable
	Hexavalent chromium	mg/l	0.05 or less	Below 0.005	Acceptable
	Selenium	mg/l	0.01 or less	Below 0.002	Acceptable
	Fluorine	mg/l	0.8 or less	Below 0.1	Acceptable
	Boron	mg/l	1 or less	Below 0.1	Acceptable

\* Environmental standard: Keeping the amount less than this standard is desirable for preservation of human health and protection of the human environment

Noise (YKK Group main production locations in Japan)

Unit: db

Plant*	Type	Prefectural standard	Municipal agreement on pollution control	Voluntary standard	Highest value measured in fiscal 2019	Assessment
Tohoku	Daytime (8:00~19:00)	–	60	60	59.8	Acceptable
Tohoku	Morning (6:00~8:00) Evening (19:00~22:00)	–	55	55	53.7	Acceptable
Tohoku	Night-time (22:00~6:00)	–	50	50	49.6	Acceptable
Kurobe	Daytime (8:00~19:00)	70	60	59	56.2	Acceptable
Kurobe	Morning (6:00~8:00) Evening (19:00~22:00)	65	55	55	54	Acceptable
Kurobe	Night-time (22:00~6:00)	63	50	49	48.7	Acceptable
Shikoku	Daytime (8:00~19:00)	70	70	65	56	Acceptable
Shikoku	Morning (6:00~8:00) Evening (19:00~22:00)	65	65	60	58	Acceptable
Shikoku	Night-time (22:00~6:00)	60	65	55	53	Acceptable

Note: The Kyushu Plant is outside the designated area

Dioxins (YKK Group main production locations in Japan)

Equipment	Plant	Atmosphere (unit: ng/TEQ/m <sup>3</sup> N)		Assessment	Water quality (unit: pg-TEQ/m <sup>3</sup> N)		Assessment
		Emissions standard	Highest value measured in fiscal 2019		Emissions standard	Highest value measured in fiscal 2019	
Aluminum melting furnaces	Tohoku	–	0.046	Acceptable	–	–	–
	Kurobe	5	0.000011	Acceptable	10	–	–
	Shikoku	5	0.00029	Acceptable	–	–	–
	Kyushu	5	0.011	Acceptable	–	–	–

Fiscal 2019 YKK Group main production locations in Japan PRTR calculations

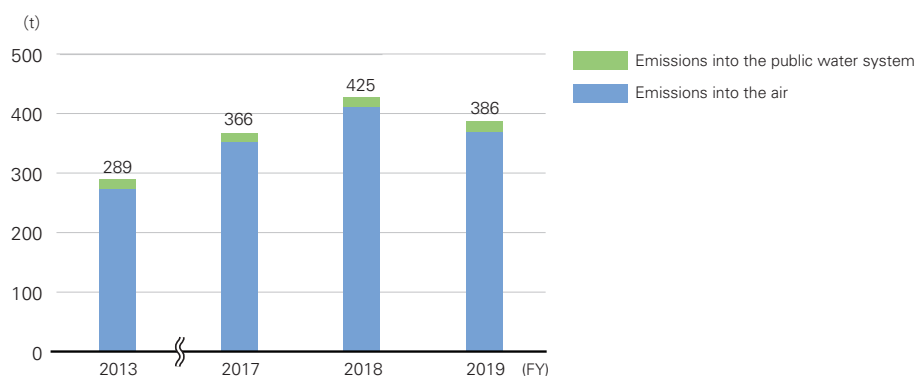
Period: April 2019–March 2020

Unit: t (Dioxins: mg-TEQ)

Substance number	Substance	Volume handled	Atmospheric emissions	Public water emissions	Soil emissions (kg/y)	Landfill volume (kg/y)	Transfer amount to sewer system (kg/y)	Transfer amount (kg/y)	Consumption (kg/y)	Transformed amount (kg/y)
1	Zinc compounds (water-soluble)	1.52	Below 0.01	Below 0.01	–	–	–	0.68	0.67	0.17
31	Antimony	5.45	–	–	–	–	–	0.15	5.30	–
53	Ethylbenzene	14.32	13.73	–	–	–	–	0.05	Below 0.01	0.50
80	Xylene	146.72	45.03	–	–	–	–	0.01	15.25	86.36
87	Chromium and trivalent chromium compounds	2.47	–	Below 0.01	–	–	–	0.06	2.04	Below 0.01
132	Cobalt and cobalt compounds	11.54	–	0.34	–	–	–	0.32	10.88	–
144	Inorganic cyanide compounds	19.73	0.04	0.02	–	–	–	15.72	–	3.95
232	N, N-dimethylformamide	172.27	172.27	–	–	–	–	–	–	–
258	Hexamethylenetetramine	0.61	–	Below 0.01	–	–	–	–	–	–
259	Tetramethylthiuram disulfide	3.54	–	–	–	–	–	0.59	0.14	2.81
277	Triethylamine	9.07	3.32	5.68	–	–	–	–	0.07	–
296	1,2,4-Trimethylbenzene	133.36	10.09	–	–	–	–	Below 0.01	21.49	101.77
300	Toluene	125.08	120.57	–	–	–	–	0.57	Below 0.01	1.41
308	Nickel	65.24	0.19	–	–	–	–	2.79	61.00	Below 0.01
309	Nickel compounds	29.75	Below 0.01	0.94	–	–	–	0.74	27.04	1.04
355	Bis(2-ethylhexyl) phthalate	417.17	–	–	–	–	–	1.92	415.25	–
395	Water-soluble salts of peroxodisulfuric acid	4.45	0.44	0.48	–	–	–	–	–	3.53
405	Boron compounds	14.81	–	11.18	–	–	–	1.42	2.21	–
412	Manganese and manganese compounds	208.75	0.18	–	–	–	–	5.54	190.04	–
438	Methylnaphthalene	133.58	0.60	–	–	–	–	0.84	21.50	110.64
448	Methylenebis (4, 1-phenylene) diisocyanate	206.67	–	–	–	–	–	0.39	204.89	1.39
461	Triphenyl phosphate	9.18	–	–	–	–	–	–	9.18	–
243	Dioxins (mg-TEQ)	–	0.45	–	–	–	–	–	–	–

Notes: 1. Calculations for substances of which we handle 1 t or more per year (0.5 t or more per year for Class I Designated Chemical Substances, with the exception of dioxins) at our domestic plants  
 2. Consumption: the amount consumed as a raw material and the amount contained in products or the amount sold and recycled  
 3. Transformed amount: the amount that has been transformed into other substances by incineration, reactive processing and other methods

Emissions of PRTR Substances (excluding dioxin) (YKK Group main production locations in Japan)





CO<sub>2</sub> Emissions in the Supply Chain in FY2019 (YKK Group Companies in Japan)

