

EPEAT 4.7.2.1 Public disclosure of key environmental aspects

The following data shows key environmental aspects in the Hirooka office having complete responsibility for the design and manufacture of printers and scanners. (Fiscal Year: From April to next March)

a) Greenhouse Gas (GHG) Emissions

Greenhouse gas emissions (thousand t-CO ₂ e)	FY2019	FY2020
Scope 1	0.57	0.78
Scope 2	20.66	11.22
Total	21.23	12.00

CO₂ conversion factor of greenhouse gas emissions

- ♦ Electric power: In Japan, we use the adjusted emissions factors for the load serving entities (i.e., utilities) from which our sites purchase electricity, pursuant to Load Serving Entity Emission Factors announced by the Ministry of Environment and the Ministry of Economy, Trade and Industry.
- ♦ Fuel: The factors announced by the IPCC in 2006 were used for both domestic and overseas data.
- ♦ GHGs other than CO₂: Equivalent values were calculated based on 100-year GWP values in the Fifth Assessment Report of the IPCC.

Third-party verification of GHG emissions

Scopes 1 and 2 GHG emissions are verified.

b) Water

Water withdrawal (thousand m ³)	FY2019	FY2020
Municipal water	354	362
Ground water	163	161
Total	517	524
Discharge (thousand m ³)	FY2019	FY2020
Total water discharge (sewage)	449	430
Recycled water	207	161
(Ratio)	(28.6%)	(23.5%)
Reused water	0	0
(Ratio)	(0%)	(0%)

♦ Recycled ratio=recycled water / (water withdrawal + recycled water)

* Totals do not add up in some cases due to rounding off of fractions.

Third-party verification of water

Water withdrawal are verified.

Quality of water discharge

The following table shows the water quality measurement values of the main substances in the five drainage ports for manufacturing process and living use in the Hirooka office. (No.2, 3, 5, 8, 9)

Sewage line	Item	Unit	Measurement value (average)	
			FY2019	FY2020
No.2	n-hexane (mineral oil)	mg/l	ND	ND
	n-hexane (animal/plant oil)	mg/l	7.1	5.9
No.3	BOD	mg/l	30.4	21.8
	SS	mg/l	32.5	27
	n-hexane (mineral oil)	mg/l	ND	ND
	n-hexane (animal/plant oil)	mg/l	2.5	2.0
	Cu	mg/l	ND	ND
	Zn	mg/l	0.03	0.02
	Fe	mg/l	0.03	0.02
	Mn	mg/l	0.02	0.003
	Cr	mg/l	ND	ND
	T-P	mg/l	1.4	1.1
	Pb	mg/l	ND	ND
	Fluorine	mg/l	0.6	0.5
	Ammonia compound, Nitrous acid, Nitric acid	mg/l	21.3	21.3
	I2 (amount iodine consumed)	mg/l	1.3	2.1
	Nitric acid (NO3)	mg/l	9.2	6.9
	Nitrous acid (NO2)	mg/l	6.5	ND
	Ammonia nitrogen	mg/l	15.6	13.2
No.5	n-hexane (mineral oil)	mg/l	ND	ND
	n-hexane (animal/plant oil)	mg/l	6.0	4.6
No.8	BOD	mg/l	1.1	2.6
	SS	mg/l	0.2	0.3
	n-hexane (mineral oil)	mg/l	ND	ND
	n-hexane (animal/plant oil)	mg/l	ND	ND
	Cu	mg/l	ND	0.1
	Zn	mg/l	0.04	0.16
	Fe	mg/l	0.01	0.05
	Mn	mg/l	ND	0.01
	Cr	mg/l	ND	0.003
	T-P	mg/l	ND	0.002
	Pb	mg/l	ND	ND
	Fluorine	mg/l	0.5	0.01
	Ammonia compound, Nitrous acid, Nitric acid	mg/l	0.4	0.7
	I2 (amount iodine consumed)	mg/l	0.1	0.5

	Nitric acid (NO3)	mg/l	0.4	0.5
	Nitrous acid (NO2)	mg/l	0.4	ND
	Ammonia nitrogen	mg/l	0.03	0.08
No.9	BOD	mg/l	172	129
	SS	mg/l	135	108
	n-hexane (mineral oil)	mg/l	ND	0.2
	n-hexane (animal/plant oil)	mg/l	5.5	4.1
	Cu	mg/l	0.003	0.013
	Zn	mg/l	0.08	0.1
	Fe	mg/l	0.1	0.1
	Mn	mg/l	0.003	0.003
	Cr	mg/l	ND	ND
	T-P	mg/l	6.5	7.0
	Pb	mg/l	ND	ND
	Fluorine	mg/l	0.03	0.1
	Ammonia compound, Nitrous acid, Nitric acid	mg/l	28.7	41
	I2 (amount iodine consumed)	mg/l	33.5	23
	Nitric acid (NO3)	mg/l	ND	1.7
	Nitrous acid (NO2)	mg/l	0.1	ND
	Ammonia nitrogen	mg/l	42	52
	No.10	BOD	mg/l	11
SS		mg/l	10	8
n-hexane (mineral oil)		mg/l	ND	ND
n-hexane (animal/plant oil)		mg/l	ND	ND
Cu		mg/l	ND	ND
Zn		mg/l	0.01	0.003
Fe		mg/l	0.01	0.001
Mn		mg/l	ND	ND
Cr		mg/l	ND	ND
T-P		mg/l	0.04	0.04
Pb		mg/l	ND	ND
Fluorine		mg/l	2.6	1.2
Ammonia compound, Nitrous acid, Nitric acid		mg/l	14	24
I2 (amount iodine consumed)		mg/l	0.3	0.5
Nitric acid (NO3)		mg/l	1.6	1.3
Nitrous acid (NO2)		mg/l	1.7	ND
Ammonia nitrogen	mg/l	15	26	

ND: No Detection (Below the detection limit)

-: Unmeasured

c) Waste

Waste (tonnes)		FY2019	FY2020
All solid waste generated		2,603	2,576
Reused or recycled	Landfilled	4	10
	Sent to waste-to-energy	319	507
	Incineration	60	46
	Other disposal facilities (material recycle)	2,218	2,013
	Discards that have been reduced (from a defined base year: previous year)	46	27

d) Toxics

FY2020 PRTR data (kg)

No.	Name	Emissions to atmosphere	Transfer to waste	Removed/ consumed
374	hydrogen fluoride and its water-soluble salts	0	0	12,859
438	Methylnaphthalene	12	0	2,296
20	2-aminoethanol	0	208	0

FY2019 PRTR data (kg)

No.	Name	Emissions to atmosphere	Transfer to waste	Removed/ consumed
374	hydrogen fluoride and its water-soluble salts	0	0	11,087
438	Methylnaphthalene	17	0	3,359
20	2-aminoethanol	0	203	0

The calculation and protocols used are the Japanese Pollutant Release and Transfer Register (PRTR). More details can be found on: <http://www.env.go.jp/en/chemi/prtr/about/index.html>