

Safety & Environmental Report 2018

Data by Site

Notes on figures

- The Energy Consumption statistics are crude-oil equivalents of heavy oil, diesel oil, kerosene, gasoline, LP gas or etc.
- The recycling ratio represents the percentage of sold-off/recycled waste.
- Air emission data is measured at exhaust vents and water quality data at the final discharge outlet.
- For PRTR-targeted substances, Special Class 1 restricted substances (the amount usage of 0.5 ton or more per year) and Class 1 restricted substances (the amount usage of 1 ton or more per year) are stated in this report. Figures are rounded to one decimal place.
- All data was from FY2017. It was measured between April 1st, 2017 and March 31, 2018.

Notes on Standard Values

- The standard value for air emission is set to the strictest standard value referring to applicable laws, regulations and standards for the equipments. The observed values are the minimum/maximum among recorded values during the period.
- The standard values for air emission and water quality are the strictest values referring to the applicable laws, regulations and customer's agreements at each site.
- Column marked with an Em Dash ("-") indicates that they are not indispensable.

TAIYO YUDEN CO., LTD. Takasaki Global Center

- Total energy consumption (Crude oil equivalent) : 550 kL/year
- Total waste generated : 65 tons/year (recycling rate: 100 %)
- Air emission : Measurement was not performed since no facility was subject to legal regulations.
- Water quality : Measurement was not performed since no facility was subject to legal regulations.
- PRTR restricted substances : Total usage amount is under notification obligation.

TAIYO YUDEN CO., LTD. Yawatabara Plant

- Total energy consumption (Crude oil equivalent) : 124 kL/year
- Total waste generated : 114 tons/year (recycling rate: 100 %)
- Air emission : Measurement was not performed since no facility was subject to legal regulations.
- Water quality: **Pollution Control Agreement**

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Hydrogen ion concentration	5.8~8.6	-	7.6	7.8	8.0
Biochemical oxygen demand	25	mg/L	1.0	3.8	7.0
Suspended solids	50	mg/L	1.0	2.6	7.0
N-hexane extract (animal/plant content)	30	mg/L	1.0		
Coliform bacteria count	3,000	Num/cm ³	30	61	210
Nitrogen content	120	mg/L	1.2	3.7	8.6
Phosphorus content	16	mg/L	0.2	0.5	1.0

- PRTR restricted substances : Total usage amount is under notification obligation.

TAIYO YUDEN CO., LTD. Tamamura Plant

- Total energy consumption (Crude oil equivalent) : 26,290 kL/year
- Total waste generated : 2,076 tons/year (recycling rate: 100 %)
- Air emission : **Air Pollution Control Act**

Equipment	Fuel	Emissions to Air	Emission Limit	Unit	Actual Max.
Firing furnace (Electricity)		Soot and dust	0.25	g/m ³ N	0.1

- Water quality : **Water Quality Pollution Control Act and Agreement**

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Lead and its compounds	0.1	mg/L	<0.01		
Arsenic and its compounds	0.1	mg/L	<0.01		
Fluorine and its compounds	8	mg/L	<0.1		
Hydrogen ion concentration	5.8~8.6	-	7.5	7.6	7.8
Biochemical oxygen demand	25	mg/L	1.0	3.5	7.0
Suspended solids	50	mg/L	1.0	1.3	4.0
N-hexane extract (mineral content)	5	mg/L	1.0		
Copper content	3	mg/L	0.02		
Zinc content	2	mg/L	0.2		
Soluble iron content	10	mg/L	0.03		
Soluble manganese content	10	mg/L	0.02		
Chromium content	2	mg/L	<0.01		
Coliform bacteria count	3,000	Num/cm ³	30		
Nitrogen content	120	mg/L	3.4	5.3	8.4
Phosphorus content	16	mg/L	0.8	1.3	1.7

- PRTR restricted substances

In tons/year

Chemical Substance Name	Total Emissions	Total Transfers	Total Recycles
Toluene	12	0	11
Nickel	0.03	0	19
Nickel compound	0.0009	0	0.6
Methylnaphthalene	0.1	0	0

TAIYO YUDEN CO., LTD. Haruna Plant

- Total energy consumption (Crude oil equivalent) : 8,696 kL/year
- Total waste generated : 292 tons/year (recycling rate: 99.0 %)
- Air emission : **Air Pollution Control Act and Prefectural Ordinances**

Equipment	Fuel	Emissions to Air	Emission Limit	Unit	Actual Max.
Firing furnace (Electricity)		Soot and dust	0.1	g/m ³ N	0.002
Generator (Diesel)	Heavy oil A	NOx	950	ppm	698
		SOx	8.0	K value	0.1
		Soot and dust	0.1	g/m ³ N	0.04

- Water quality : **Water Quality Pollution Control Act**

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Hydrogen ion concentration	5.8~8.6	-	6.6	7.1	7.6
Biochemical oxygen demand	25	mg/L	2.0	5.6	21
Suspended solids	50	mg/L	1.0		
N-hexane extract (mineral content)	5	mg/L	1.0		
Copper content	3	mg/L	0.01		
Zinc content	2	mg/L	0.01	0.01	0.02
Soluble iron content	10	mg/L	0.01		
Soluble manganese content	10	mg/L	0.01	0.02	0.04
Chromium content	2	mg/L	0.01		
Nitrogen content	120	mg/L	3.3	5.8	7.3
Phosphorus content	16	mg/L	0.05		

- PRTR restricted substances In tons/year

Chemical Substance Name	Total Emissions	Total Transfers	Total Recycles
Vanadium compound	0	0	0
Manganese and its compounds	0	0	0

TAIYO YUDEN CO., LTD. Nakanojo Plant

- Total energy consumption (Crude oil equivalent) : 4,994 kL/year
- Total waste generated : 499 tons/year (recycling rate: 99.5 %)
- Air emission : **Air Pollution Control Act and Prefectural Ordinances**

Equipment	Fuel	Emissions to Air	Emission Limit	Unit	Actual Max.
Drying furnace	LP gas	NOx	230	ppm	25
		Soot and dust	0.2	g/m ³ N	<0.002
	Kerosene	NOx	230	ppm	18
		Soot and dust	0.2	g/m ³ N	<0.002
		Sox	8.0	K value	0.02
Firing furnace (Electricity)		Soot and dust	0.25	g/m ³ N	0.004
Firing furnace	LP gas	NOx	180	ppm	30
		Soot and dust	0.25	g/m ³ N	0.002

- Water quality : **Sawage Ordinance (Town of Nakanojo)**

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Boron and its compounds	10	mg/L	0.02	0.04	0.2
Hydrogen ion concentration	5.0~9.0	-	7.0	7.4	8.0
Biochemical oxygen demand	600	mg/L	2.0	29	100
Suspended solids	600	mg/L	1.0	7.8	22
N-hexane extract (mineral content)	5	mg/L	1.0	1.8	2.0
N-hexane extract (animal/plant content)	30	mg/L			
Copper content	3	mg/L	0.01	0.09	1.1
Zinc content	2	mg/L	0.04	0.2	0.7
Soluble iron content	10	mg/L	0.01	0.02	0.03
Soluble manganese content	10	mg/L	0.01		

- PRTR restricted substances

In tons/year

Chemical Substance Name	Total Emissions	Total Transfers	Total Recycles
Silver and its water-soluble compounds	0	0	0.2
Chromium and chromium(III) compounds	0	0.03	0.3
Nickel compound	0	0	26

TAIYO YUDEN CO., LTD. R&D Center

- Total energy consumption (Crude oil equivalent) : 1,504 kL/year
- Total waste generated : 48 tons/year (recycling rate: 100 %)
- Air emission : **Air Pollution Control Act**

Equipment	Fuel	Emissions to Air	Emission Limit	Unit	Actual Max.
Diesel engine	Heavy fuel oil	NOx	950	ppm	640
		SOx	8.0	K value	0.9
		Soot and dust	0.1	g/m ³ N	0.03

- Water quality : **Pollution Control Agreement**

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Boron and its compounds	10	mg/L	0.01		
Fluorine and its compounds	8	mg/L	0.1		
Ammonia and its compounds, Nitrous and Nitric acid compound	100	mg/L	13		
Hydrogen ion concentration	5.8~8.6	-	6.9	7.4	7.6
Biochemical oxygen demand	25	mg/L	1.0	4.3	12
Suspended solids	50	mg/L	1.0	2.1	4.0
N-hexane extract (animal/plant content)	30	mg/L	<1.0		
Phenolic content	1	mg/L	0.1		
Copper content	3	mg/L	0.01		
Zinc content	2	mg/L	0.05		
Soluble iron content	10	mg/L	0.03		
Soluble manganese content	10	mg/L	0.01		
Chromium content	2	mg/L	0.01		
Coliform bacteria count	3,000	Num/cm ³	<30		
Nitrogen content	120	mg/L	12	25	41
Phosphorus content	16	mg/L	1.3	3.1	5.4

- PRTR restricted substances : Total usage amount is under notification obligation.

TAIYO YUDEN TECHNO SOLUTIONS CO., LTD.

- Total energy consumption (Crude oil equivalent) : 2,623 kL/year
- Total waste generated : 82 tons/year (recycling rate: 100 %)
- Air emission : Measurement was not performed since no facility was subject to legal regulations.
- Water quality : Measurement was not performed since no facility was subject to legal regulations.
- PRTR restricted substances : Total usage amount is under notification obligation.

Kankyo Assist Co., Ltd.

- Total energy consumption (Crude oil equivalent) : 42 kL/year
- Total waste generated : 5.3 ton/year (recycling rate: 61 %)
- Air emission : Measurement was not performed since no facility was subject to legal regulations.
- Water quality : Measurement was not performed since no facility was subject to legal regulations.
- PRTR restricted substances : Total usage amount is under notification obligation.

TAIYO YUDEN ENERGY DEVICE CO., LTD.

- Total energy consumption (Crude oil equivalent) : 486 kL/year
- Total waste generated : 25 tons/year (recycling rate: 100 %)
- Air emission : Measurement was not performed since no facility was subject to legal regulations.
- Water quality : Measurement was not performed since no facility was subject to legal regulations.
- PRTR restricted substances : Total usage amount is under notification obligation.

TAIYO YUDEN CHEMICAL TECHNOLOGY CO., LTD.

- Total energy consumption (Crude oil equivalent) : 2,574 kL/year
- Total waste generated : 979 tons/year (recycling rate: 100 %)

<<Head Office / Main Plant>> -> Fujioka Plant in next page

- Air emission : Measurement was not performed since no facility was subject to legal regulations.
- Water quality : **Water Quality Pollution Control Act and Prefectural Ordinances**

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Boron and its compounds	10	mg/L	0.03		
Fluorine and its compounds	8	mg/L	<0.01		
Ammonia (Sum of Ammonia, Nitric & Nitrous acid)	100	mg/L	27		
Hydrogen ion concentration	5.8~8.6	-	6.6	7.1	7.4
Biochemical oxygen demand	25	mg/L	2.0	5.7	12
Suspended solids	50	mg/L	1.0	6.1	15
N-hexane extract (animal/plant content)	5	mg/L	<1.0		
Phenolic content	1	mg/L	<0.1		
Copper content	3	mg/L	<0.01		
Zinc content	2	mg/L	<0.01		
Soluble iron content	10	mg/L	<0.01		
Soluble manganese content	10	mg/L	0.01		
Coliform bacteria count	3,000	Num/cm ³	110	328	570
Nitrogen content	60	mg/L	9.4	28	51
Phosphorus content	8	mg/L	0.2	0.4	0.7
Formaldehyde	10	mg/L	<1.0		

■ PRTR restricted substances

In tons/year

Chemical Substance Name	Total Emissions	Total Transfers	Total Recycles
copper salt(water-soluble, except complex salts)	0.01	0.2	0.1
Nickel	0.2	0	12
Nickel compound	0.7	6.2	0
Boron compound	0.3	0.3	0

<<Fujioka Plant>>

■ Air emission : Measurement was not performed since no facility was subject to legal regulations.

■ Water quality : **Water Quality Pollution Control Act and Agreement**

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Boron and its compounds	10	mg/L	0.1	0.2	0.3
Fluorine and its compounds	8	mg/L	0.4	1.0	1.5
Ammonia (Sum of Ammonia, Nitric & Nitrous acid)	100	mg/L	5.7	2.0	13
Hydrogen ion concentration	5.8~8.6	-	7.0	7.3	7.6
Biochemical oxygen demand	25	mg/L	1.0	3.5	13
Suspended solids	50	mg/L	1.0	4.0	13
N-hexane extract (animal/plant content)	5	mg/L	<1.0		
Copper content	3	mg/L	<0.01		
Zinc content	2	mg/L	<0.01		
Soluble iron content	10	mg/L	0.2	0.3	0.4
Soluble manganese content	10	mg/L	<0.01		
Chromium content	2	mg/L	<0.01		
Coliform bacteria count	1,000	Num/cm ³	37	45	50
Nitrogen content	60	mg/L	3.0	5.4	13
Phosphorus content	8	mg/L	0.06	0.8	4.7
Formaldehyde	10	mg/L	<1.0		
Phenol	1	mg/L	<0.1		

■ PRTR restricted substances

In tons/year

Chemical Substance Name	Total Emissions	Total Transfers	Total Recycles
Ferric Chloride	0.03	25	0

FUKUSHIMA TAIYO YUDEN CO., LTD.

- Total energy consumption (Crude oil equivalent) : 4,142 kL/year
- Total waste generated : 390 tons/year (recycling rate: 100 %)
- Air emission : Measurement was not performed since the facility subjected to legal regulations was out of service.
- Water quality : **Pollution Control Agreement**

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Boron and its compounds	10	mg/L	0.2	0.8	1.3
Fluorine and its compounds	8	mg/L	0.05		
Hydrogen ion concentration	5.8~8.6	-	6.8	7.2	7.7
Biochemical oxygen demand	20	mg/L	0	1.7	8.0
Suspended solids	50	mg/L	0	1.3	9.6
N-hexane extract (animal/plant content)	1	mg/L	0.5		
Zinc content	2	mg/L	0	0.1	1.0
Soluble iron content	10	mg/L	0.08	0.2	0.6
Chromium content	2	mg/L	0.05		
Coliform bacteria count	3,000	Num/cm ³	0	10	120
Nitrogen content	120	mg/L	0.9	6.2	16
Phosphorus content	16	mg/L	0.02	0.3	1.9

- PRTR restricted substances In tons/year

Chemical Substance Name	Total Emissions	Total Transfers	Total Recycles
Silver and its water-soluble compounds	0	0.3	2.6
Chromium and chromium(III) compounds	0	0.3	0
Boron compound	0	0.6	0

WAKAYAMA TAIYO YUDEN CO., LTD.

- Total energy consumption (Crude oil equivalent) : 4,298 kL/year
- Total waste generated : 192 tons/year (recycling rate: 100 %)
- Air emission : Measurement was not performed since no facility was subject to legal regulations.
- Water quality : **Water Quality Pollution Control Act and**

Enforcement Ordinance of the Anti-pollution Regulation (Wakayama Prefecture)

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Boron and its compounds	10	mg/L	0.1	0.6	1.4
Fluorine and its compounds	8	mg/L	0.8		
Ammonia	100	mg/L	1.8	6.6	9.2
Hydrogen ion concentration	5.8~8.6	-	6.8	7.3	8.2
Biochemical oxygen demand	160	mg/L	3.2	5.9	9.9
Chemical oxygen demand	160	mg/L	4.2	8.6	15
Suspended solids	200	mg/L	1.0	5.7	17
N-hexane extract (mineral content)	5	mg/L	0.5		
N-hexane extract (animal/plant content)	30	mg/L	0.6	1.2	1.7
Phenolic content	5	mg/L	0.5		
Copper content	3	mg/L	0.3		
Zinc content	2	mg/L	0.2	0.2	0.4
Soluble iron content	10	mg/L	0.1	0.1	0.2
Soluble manganese content	10	mg/L	0.1	0.1	0.2
Chromium content	2	mg/L	0.2		
Coliform bacteria count	3,000	Num/cm ³	1.0	13	79
Nitrogen content	120	mg/L	6.7	22	37
Phosphorus content	16	mg/L	0.01	0.02	0.04
Nickel	3	mg/L	0.01	0.05	0.1

■ PRTR restricted substances

In tons/year

Chemical Substance Name	Total Emissions	Total Transfers	Total Recycles
Toluene	1.8	4.7	0

NIIGATA TAIYO YUDEN CO., LTD.

- Total energy consumption (Crude oil equivalent) : 21,578 kL/year
- Total waste generated : 2,833 tons/year (recycling rate: 100 %)
- Air emission : **Air Pollution Control Act**

Equipment	Fuel	Emissions to Air	Emission Limit	Unit	Actual Max.
Firing furnace (Electricity)		Soot and dust	0.25	g/m ³ N	0.02

- Water quality : **Water Quality Pollution Control Act is not applicable to this site and measurement was performed voluntarily.**

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Hydrogen ion concentration	-	-	6.9	7.5	8.0
Biochemical oxygen demand	-	mg/L	0.9	2.5	3.8
Suspended solids	-	mg/L	1.0	2.5	5.0
N-hexane extract (mineral content)	-	mg/L	0.5		
Coliform bacteria count	-	Num/cm ³	0		
Nitrogen content	-	mg/L	0.6	1.8	3.5
Phosphorus content	-	mg/L	0.03	0.2	0.4
Lead and its compounds	-	mg/L	0.01		
Arsenic and its compounds	-	mg/L	0.01		
Copper content	-	mg/L	0.01		
Zinc content	-	mg/L	0.02		
Soluble iron content	-	mg/L	0.02		
Soluble manganese content	-	mg/L	0.01		
Chromium content	-	mg/L	0.01		
Fluorine and its compounds	-	mg/L	0.5		

- PRTR restricted substances

In tons/year

Chemical Substance Name	Total Emissions	Total Transfers	Total Recycles
Toluene	7.8	0	20
Nickel	0	1.1	27
Nickel compound	0	0.04	1.1

TAIYO YUDEN Mobile Technology Co., Ltd.

- Total energy consumption (Crude oil equivalent) : 15,983 kL/year
- Total waste generated : 316 tons/year (recycling rate: 100 %)

<<Head Office / Main Plant>>

- Air emission : **Air Pollution Control Act**

Equipment	Fuel	Emissions to Air	Emission Limit	Unit	Actual Max.
Boiler	Town gas	NOx	45	ppm	29
		Soot and dust	0.1	g/m ³ N	<0.001

- Water quality : **Sewerage Act, Sewerage Regulations**

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Fluorine and its compounds	8	mg/L	0.1	0.5	1.8
Hydrogen ion concentration	5.7~8.7	-	6.7	7.1	7.6
Biochemical oxygen demand	300	mg/L	6.9	74	140
Suspended solids	300	mg/L	7.2	34	72
Nitrogen content	120	mg/L	3.8	27	44
Phosphorus content	16	mg/L	0.1	1.3	3.2

- PRTR restricted substances : Total usage amount is under notification obligation.

<<Tokorozawa Plant>>

- Air emission : Measurement was not performed since no facility was subject to legal regulations.
- Water quality : **Water Quality Pollution Control Act and Sewerage Act**

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Hydrogen ion concentration	5.0~9.0	-	6.6	6.9	7.2
Biochemical oxygen demand	600	mg/L	2.4	3.3	5.5
Suspended solids	600	mg/L	3.2	6.5	8.8
N-hexane extract (mineral content)	5	mg/L	<1.0		
Nitrogen content	240	mg/L	1.7	2.3	2.9
Phosphorus content	32	mg/L	<0.1		

- PRTR restricted substances : Total usage amount is under notification obligation.

KOREA KYONG NAM TAIYO YUDEN CO., LTD.

- Total energy consumption (Crude oil equivalent) : 35,803 kL/year
- Total waste generated : 5,126 tons/year (recycling rate: 84.2 %)

<<Head Office / Main Plant>> -> Tongyeong Plant in next page

- Air emission :

Equipment	Emissions to Air	Emission Limit	Unit	Actual Max.
Scrubber	Soot and dust	50	g/m ³ N	2.4
	SOx	400	ppm	<1.0
	Ammonia	50	ppm	<0.3
	Nickel	2	g/m ³ N	<0.06
	Copper	5	g/m ³ N	<0.015
RTO	Toluene	30	ppm	0.6
	Terpineol	-	ppm	0.5
	Nickel	2	g/m ³ N	<0.06
	Total Hydrocarbon (THC)	200	ppm	25
Drying furnace	Soot and dust	50	g/m ³ N	4.5
Bag filter	Soot and dust	50	g/m ³ N	4.3
Firing furnace	Soot and dust	50	g/m ³ N	3.3

- Water quality :

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Hydrogen ion concentration	5.8~8.6	-	6.8	7.2	7.9
Biochemical oxygen demand	300	mg/L	2.7	4.3	7.0
Chemical oxygen demand	300	mg/L	5.7	8.0	9.8
Suspended solids	300	mg/L	1.8	4.9	8.6
N-hexane extract (mineral content)	5	mg/L	0.5	0.7	0.9
N-hexane extract (animal/plant content)	30	mg/L	<0.1		
Copper content	3	mg/L	0.01	0.05	0.2
Fluorine and its compounds	15	mg/L	0.8	0.9	1.0
Nitrogen content	60	mg/L	12	15	20
Phosphorus content	20	mg/L	0.005	0.08	0.2
Anionic surfactant	5	mg/L	0.09		
Nickel	3	mg/L	0.06	0.7	2.2
Chromium content	2	mg/L	0.02		
Zinc content	5	mg/L	0.01		
Phenol	3	mg/L	<0.007		
Soluble manganese content	10	mg/L	0.03		
Soluble iron content	10	mg/L	0.3		
Coliform bacteria count	3,000	Num/cm ³	78		
Trichloroethylene	0.3	mg/L	<0.002		
Tetrachloroethylene	0.1	mg/L	<0.002		

<<Tongyeong Plant>>

- Total energy consumption (Crude oil equivalent) : 282 kL/year
- Total waste generated : 7.7 tons/year (recycling rate: 0.0 %)
- Air emission : Measurement was not performed since no facility was subject to legal regulations.
- Water quality : Measurement was not performed since no facility was subject to legal regulations.

KOREA TAIYO YUDEN CO., LTD.

- Total energy consumption (Crude oil equivalent) : 929 kL/year
- Total waste generated : 29 tons/year (recycling rate: 57.3 %)
- Air emission : Measurement was not performed since no facility was subject to legal regulations.
- Water quality : Measurement was not performed since no facility was subject to legal regulations.

TAIYO YUDEN (GUANGDONG) CO., LTD.

- Total energy consumption (Crude oil equivalent) : 34,063 kL/year
- Total waste generated : 2,261 tons/year (recycling rate: 100 %)
- Air emission :

Equipment	Fuel	Emissions to Air	Emission Limit	Unit	Actual Max.
Boiler	Natural gas	Ringelmann smoke density	1	class	0.5
		Sulfur dioxide	50	mg/m ³ N	38
		Total suspended particulates	30	mg/m ³ N	11
Generator	Kerosene	Ringelmann smoke density	1	class	0.8
Cafeteria	Natural gas	Oily smoke	2	ppm	1.3
Scrubber	-	Hydrogen chloride	30	mg/m ³ N	1.8
RTO	Natural gas	Toluene	40	mg/m ³ N	<0.01
		Methanol	190	mg/m ³ N	0.4

- Water quality :

Industrial wastewater

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Ammonia and similar nitrogen compounds	15	mg/L	0.04	0.5	1.6
Hydrogen ion concentration	6.0~9.0	-	6.5	7.3	8.5
Chemical oxygen demand	80	mg/L	10	21	38
Suspended solids	30	mg/L	3.0	4.3	10
Zinc content	1	mg/L	0.009		
Nitrogen content	20	mg/L	7.7	11	14
Copper content	0.5	mg/L	0.008	0.06	0.1
Nickel	0.5	mg/L	0.01	0.05	0.1

Human sewage

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Hydrogen ion concentration	6.0~9.0	-	7.6	7.6	7.6
Biochemical oxygen demand	300	mg/L	3.5	6.3	9.1
Chemical oxygen demand	500	mg/L	30	38	46
Suspended solids	400	mg/L	14	15	15
Animal/Vegetable oils	100	mg/L	1.6	2.7	3.8
Petroleum	20	mg/L	1.3	1.4	1.6

TAIYO YUDEN (TIANJIN) ELECTRONICS CO., LTD.

- Total energy consumption (Crude oil equivalent) : 799 kL/year
- Total waste generated : 4.0 tons/year (recycling rate: 100 %)
- Air emission :

Equipment	Emissions to Air	Emission Limit	Unit	Actual Max.
Drying furnace	Non-methane hydrocarbon (NMHC)	120	mg/m ³ N	4.7
		1.2	kg/h	2.3×10 ⁻²
	Tin and its compounds	8.5	mg/m ³ N	7.5×10 ⁻⁵
		0.04	kg/h	1.9×10 ⁻⁷

- Water quality :

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Biochemical oxygen demand	300	mg/L	21		
Chemical oxygen demand	500	mg/L	55		
Suspended solids	400	mg/L	21		
N-hexane extract (animal/plant content)	100	mg/L	1.3		
Ammonical nitrogen	35	mg/L	14		
Phosphorus content	3	mg/L	1.2		

TAIYO YUDEN (PHILIPPINES), INC.

- Total energy consumption (Crude oil equivalent) : 18,504 kL/year
- Total waste generated : 1,644 tons/year (recycling rate: 92.3 %)
- Air emission :

Equipment	Fuel	Emissions to Air	Emission Limit	Unit	Actual Max.
Generator	Kerosene	NOx	2,000	mg/m ³ N	106
		Carbon monoxide	500	mg/m ³ N	118
Scrubber	-	Hydrogen sulfide	7	mg/m ³ N	1.4
		Nitrogen dioxide	500	mg/m ³ N	39
		Sulfur dioxide	200	mg/m ³ N	6.0
		Particulate matter	200	mg/m ³ N	7.5
		Nickel	20	mg/m ³ N	ND
		Ammonia	20	mg/m ³ N	<0.0008

- Water quality :

Items	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Hydrogen ion concentration	6.0~9.0	-	6.9	7.9	8.8
Biochemical oxygen demand	100	mg/L	8.0	20	57
Chemical oxygen demand	200	mg/L	16	37	73
Suspended solids	150	mg/L	1.0	11	34
Oil & Grease	10	mg/L	1.0	1.7	3.0
Silver	1	mg/L	<0.01		
Lead and its compounds	0.5	mg/L	<0.01	<0.02	<0.02
Zinc content	10	mg/L	<0.003		
Nickel	1	mg/L	0.1	0.4	0.9

TAIYO YUDEN (SARAWAK) SDN.BHD.

- Total energy consumption (Crude oil equivalent) : 39,062 kL/year
- Total waste generated : 5,617 tons/year (recycling rate: 83.9 %)
- Air emission :

Equipment	Fuel	Emissions to Air	Emission Limit	Unit	Actual Max.
Scrubber		Hydrogen chloride	0.03	g/m ³ N	0.001
		Sulfuric acid	0.005	g/m ³ N	0.001
Boiler	LP gas	Dust Particulate	0.05	g/m ³ N	0.03
		Dark Smoke	20	%	1.1
Sludge Dryer	LP gas	Dust Particulate	0.05	mg/m ³ N	0.05
		Dark Smoke	20	%	2.2
RTO	LP gas	Dust Particulate	0.05	g/m ³ N	0.03
		Dark Smoke	20	%	0

- Water quality :

Industrial wastewater

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Temperature	40	°C	27	28	29
Hydrogen ion concentration	5.5~9.0	-	6.4	7.7	8.4
Biochemical oxygen demand	50	mg/L	2.0	4.1	12
Chemical oxygen demand	200	mg/L	15	33	69
Suspended solids	100	mg/L	5.0	7.3	17
Zinc content	2	mg/L	0.02	0.09	0.4
Copper content	1	mg/L	0.02	0.2	0.8
Nickel	1	mg/L	0.09	0.4	0.95
Tin	1	mg/L	0.1	0.3	0.7
Soluble iron content	5	mg/L	0.5	1.5	3.6

Human sewage

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Hydrogen ion concentration	5.5~9.0	-	6.2	7.2	8.1
Biochemical oxygen demand	50	mg/L	2.0	2.2	3.9
Chemical oxygen demand	200	mg/L	10	23	115
Suspended solids	100	mg/L	5.0		
Ammonia Nitrogen	50	mg/L	1.0	1.1	6.6
Oil & Grease	20	mg/L	1.0	1.2	1.4