Safety & Environmental Report 2017

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 FY2016. It was measured between April 1st, 2016 and March 31, 2017.

Notes on Standard Values

- The standard value for air emission is set to the strictest standard value referrig 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) : 564 kL/year
- Total waste generated : 51 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) : 463 kL/year
- Total waste generated : 93 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	-	7.5	7.7	8.0
Biochemical oxygen demand	25	mg/L	2.0	3.3	6.0
Suspended solids	50	mg/L	1.0	4.8	7.0
N-hexane extract (animal/plant content)	30	mg/L	<1.0		
Coliform bacteria count	3,000	Num/cm^3	30	198	1,000
Nitrogen content	120	mg/L	1.9	4.6	7.7
Phosphorus content	16	mg/L	0.2	0.5	0.8

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

TAIYO YUDEN CO., LTD. Tamamura Plant

■ Total energy consumption (Crude oil equivalent) : 25,367 kL/year

■ Total waste generated : 2,165 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^3N	0.03

■ 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	-	7.4	7.6	7.7
Biochemical oxygen demand	25	mg/L	1.0	2.9	5.0
Suspended solids	50	mg/L	1.0	1.8	5.0
N-hexane extract (mineral content)	5	mg/L	1.0		
Copper content	3	mg/L	0.03		
Zinc content	2	mg/L	0.3		
Soluble iron content	10	mg/L	0.05		
Soluble manganese content	10	mg/L	0.02		
Chromium content	2	mg/L	<0.01		
Coliform bacteria count	3,000	Num/cm^3	30	42	91
Nitrogen content	120	mg/L	1.9	5.2	9.8
Phosphorus content	16	mg/L	0.7	1.3	1.9

■ PRTR restricted substances In tons/year

Chemical Substance Name	Total Emissions	Total Transfers	Total Recycles
Toluene	12	0	11
Nickel	0.03	0	20
Nickel compound	0.0002	0	0.8
Methylnaphthalene	0.1	0	0

TAIYO YUDEN CO., LTD. Haruna Plant

■ Total energy consumption (Crude oil equivalent) : 7,765 kL/year

■ Total waste generated : 256 tons/year (recycling rate: 98.7 %)

■ 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^3N	0.002
Generator (Diesel)	Heavy oil A	NOx	950	ppm	837
		SOx	8.0	K value	0.1
		Soot and dust	0.1	g/m^3N	0.03

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

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Hydrogen ion concentration	5.8～8.6	-	6.7	7.5	7.7
Biochemical oxygen demand	25	mg/L	1.0	1.8	3.0
Suspended solids	50	mg/L		1.0	
N-hexane extract (mineral content)	5	mg/L		1.0	
Copper content	3	mg/L	0.01	0.01	0.03
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	0.01	0.02
Chromium content	2	mg/L		0.01	
Nitrogen content	120	mg/L	4.8	6.2	7.5
Phosphorus content	16	mg/L	0.05	0.05	0.08

■ PRTR restricted substances In tons/year

Chemical Substance Name	Total Emissions	Total Transfers	Total Recycles
Vanadium compound	0	0	0

TAIYO YUDEN CO., LTD. Nakanojo Plant

■ Total energy consumption (Crude oil equivalent) : 5,087 kL/year

■ Total waste generated : 402 tons/year (recycling rate: 99.6 %)

■ 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	23
		Soot and dust	0.2	g/m^3N	<0.002
	Kerosene	NOx	230	ppm	16
		Soot and dust	0.2	g/m^3N	<0.002
		Sox	8.0	K value	<1
Firing furnace (Electricity)		Soot and dust	0.25	g/m^3N	0.02
Firing furnace	LP gas	NOx	180	ppm	27
		Soot and dust	0.25	g/m^3N	0.02

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

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Boron and its compounds	10	mg/L	0.01	0.03	0.04
Hydrogen ion concentration	5.0～9.0	-	7.0	7.5	8.1
Biochemical oxygen demand	600	mg/L	3.0	25	63
Suspended solids	600	mg/L	3.0	7.8	20
N-hexane extract (mineral content)	5	mg/L	1.0	1.7	2.0
N-hexane extract (animal/plant content)	30	mg/L			
Copper content	3	mg/L	0.02	0.08	0.4
Zinc content	2	mg/L	0.03	0.2	0.7
Soluble iron content	10	mg/L	0.01	0.03	0.2
Soluble manganese content	10	mg/L	0.01	0.02	0.02

■ PRTR restricted substances In tons/year

Chemical Substance Name	Total Emissions	Total Transfers	Total Recycles
Silver and its water-soluble compounds	0	0	0.3
Chromium and chromium(III) compounds	0	0.004	0.1
Nickel compound	0	0.1	12

TAIYO YUDEN CO., LTD. R&D Center

■ Total energy consumption (Crude oil equivalent) : 1,452 kL/year

■ Total waste generated : 43 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	614
		SOx	8.0	K value	1.1
		Soot and dust	0.1	g/m^3N	0.02

■ Water quality : **Pollution Control Agreement**

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Boron and its compounds	10	mg/L	0.02		
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	-	6.8	7.3	7.6
Biochemical oxygen demand	25	mg/L	1.0	3.8	8.0
Suspended solids	50	mg/L	1.0	4.6	16
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	0.05		
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	13	20	32
Phosphorus content	16	mg/L	0.6	2.3	5.2

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

TAIYO YUDEN TECHNO SOLUTIONS CO., LTD.

- Total energy consumption (Crude oil equivalent) : 1,323 kL/year
- Total waste generated : 84 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) : 40 kL/year
- Total waste generated : 2.1 ton/year (recycling rate: 46.6 %)
- 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) : 415 kL/year
- Total waste generated : 7.6 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) : 2,465 kL/year

■ Total waste generated : 956 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		0.1	
Fluorine and its compounds	8	mg/L		<0.01	
Ammonia (Sum of Ammonia, Nitric & Nitrous acid)	100	mg/L		1.0	
Hydrogen ion concentration	5.8～8.6	-	6.8	7.2	7.5
Biochemical oxygen demand	25	mg/L	1.0	4.7	15
Suspended solids	50	mg/L	1.0	6.5	17
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	140	192	260
Nitrogen content	60	mg/L	7.0	17	51
Phosphorus content	8	mg/L	0.1	0.2	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	0.3	0.2
Nickel	0.2	0	12
Nickel compound	0.6	4.7	0
Boron compound	0.5	0.6	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	0.2	0.3	0.4
Fluorine and its compounds	8	mg/L	0.3	1.1	1.7
Ammonia (Sum of Ammonia, Nitric & Nitrous acid)	100	mg/L	3.7	5.7	8.8
Hydrogen ion concentration	5.8～8.6	-	7.0	7.3	7.5
Biochemical oxygen demand	25	mg/L	2.0	3.6	7.0
Suspended solids	50	mg/L	1.0		
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	240	315	390
Nitrogen content	60	mg/L	3.2	9.4	25
Phosphorus content	8	mg/L	0.1	0.5	1.0
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) : 4,014 kL/year

■ Total waste generated : 370 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	0.05	0.1	0.2
Fluorine and its compounds	8	mg/L		<0	
Hydrogen ion concentration	5.8～8.6	-	6.8	7.2	8.2
Biochemical oxygen demand	40	mg/L	<0	1.4	5.4
Suspended solids	70	mg/L	<0	0.9	4.2
N-hexane extract (animal/plant content)	1	mg/L		<0	
Zinc content	2	mg/L	0	0.1	0.8
Soluble iron content	10	mg/L	0	0.07	0.2
Chromium content	2	mg/L		0	
Coliform bacteria count	3,000	Num/cm^3	0	140	600
Nitrogen content	120	mg/L	0	6.5	17
Phosphorus content	16	mg/L	0.03	0.4	2.4

■ PRTR restricted substances

In tons/year

Chemical Substance Name	Total Emissions	Total Transfers	Total Recycles
Silver and its water-soluble compounds	0	0	2.9
Chromium and chromium(III) compounds	0	0.3	0
Boron compound	0	0.5	0

WAKAYAMA TAIYO YUDEN CO., LTD.

- Total energy consumption (Crude oil equivalent) : 4,295 kL/year
- Total waste generated : 165 tons/year (recycling rate: 99.8 %)
- 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	0.2	0.7	1.2
Fluorine and its compounds	8	mg/L		0.8	
Ammonia	100	mg/L	1.4	7.2	15
Hydrogen ion concentration	5.8～8.6	-	6.9	7.2	7.6
Biochemical oxygen demand	160	mg/L	2.9	5.2	10
Chemical oxygen demand	160	mg/L	5.1	8.3	14
Suspended solids	200	mg/L	1.0	4.0	24
N-hexane extract (mineral content)	5	mg/L		0.5	
N-hexane extract (animal/plant content)	30	mg/L	0.5	0.8	1.1
Phenolic content	5	mg/L		0.5	
Copper content	3	mg/L		0.3	
Zinc content	2	mg/L	0.2	0.2	0.3
Soluble iron content	10	mg/L	0.1	0.1	0.3
Soluble manganese content	10	mg/L		0.1	
Chromium content	2	mg/L		0.2	
Coliform bacteria count	3,000	Num/cm^3	1.0	23	85
Nitrogen content	120	mg/L	6.1	24	52
Phosphorus content	16	mg/L	0.01	0.01	0.02
Nickel	3	mg/L	0.01	0.1	0.2

- PRTR restricted substances

In tons/year

Chemical Substance Name	Total Emissions	Total Transfers	Total Recycles
Silver and its water-soluble compounds	0	1.2	1.2
Toluene	2.5	7.1	7.1

NIIGATA TAIYO YUDEN CO., LTD.

■ Total energy consumption (Crude oil equivalent) : 18,951 kL/year

■ Total waste generated : 2,011 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^3N	0.06

■ 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	-	-	7.2	7.8	8.3
Biochemical oxygen demand	-	mg/L	0.9	2.4	3.5
Suspended solids	-	mg/L	1.0	2.3	5.0
N-hexane extract (mineral content)	-	mg/L	<0.5		
Coliform bacteria count	-	Num/cm^3	0	0.4	1.0
Nitrogen content	-	mg/L	1.0	1.6	2.6
Phosphorus content	-	mg/L	0.02	0.2	0.3
Lead and its compounds	-	mg/L	<0.01		
Arsenic and its compounds	-	mg/L	<0.01		
Copper content	-	mg/L	0.02		
Zinc content	-	mg/L	0.2		
Soluble iron content	-	mg/L	0.03		
Soluble manganese content	-	mg/L	0.04		
Chromium content	-	mg/L	<0.01		
Fluorine and its compounds	-	mg/L	<0.05		

■ PRTR restricted substances In tons/year

Chemical Substance Name	Total Emissions	Total Transfers	Total Recycles
Toluene	5.1	0	20
Nickel	0	0.8	17
Nickel compound	0	0.03	0.7

TAIYO YUDEN Mobile Technology Co., Ltd.

■ Total energy consumption (Crude oil equivalent) : 15,577 kL/year

■ Total waste generated : 456 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	36

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

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Fluorine and its compounds	8	mg/L	0.1	0.6	2.7
Hydrogen ion concentration	5.7～8.7	−	6.7	7.1	7.7
Biochemical oxygen demand	300	mg/L	38	74	120
Suspended solids	300	mg/L	15	33	70
Nitrogen content	120	mg/L	13	28	39
Phosphorus content	16	mg/L	0.5	1.5	3.3

■ PRTR restricted substances In tons/year

Chemical Substance Name	Total Emissions	Total Transfers	Total Recycles
Nickel compound	0	0.6	0

<<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	-	6.4	7.0	7.4
Biochemical oxygen demand	600	mg/L	2.1	4.6	9.1
Suspended solids	600	mg/L	2.0	6.0	11
Nitrogen content	240	mg/L	1.3	2.5	4.4
Phosphorus content	32	mg/L	0.1	0.1	0.2

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

KOREA KYONG NAM TAIYO YUDEN CO., LTD.

■ Total energy consumption (Crude oil equivalent) : 35,118 kL/year

■ Total waste generated : 5,036 tons/year (recycling rate: 84.8 %)

<<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	3.5
	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	0.2
	Nickel	2	g/m^{3}N	<0.06
	Total Hydrocarbon (THC)	200	ppm	23
Drying furnace	Soot and dust	50	g/m^{3}N	4.4
Bag filter	Soot and dust	50	g/m^{3}N	4.2
Firing furnace	Soot and dust	50	g/m^{3}N	3.0

■ Water quality :

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Hydrogen ion concentration	5.8~8.6	-	6.8	7.3	7.8
Biochemical oxygen demand	300	mg/L	1.5	3.6	4.8
Chemical oxygen demand	300	mg/L	3.0	7.6	10
Suspended solids	300	mg/L	2.1	6.0	12
N-hexane extract (mineral content)	5	mg/L	0.3	0.6	0.9
N-hexane extract (animal/plant content)	30	mg/L	<0.1		
Copper content	3	mg/L	0.02	0.09	0.3
Fluorine and its compounds	15	mg/L	0.2	0.5	0.8
Nitrogen content	60	mg/L	6.8	14	16
Phosphorus content	20	mg/L	0.02	0.1	0.9
Anionic surfactant	5	mg/L	0.1		
Nickel	3	mg/L	0.2	0.9	2.5
Chromium content	2	mg/L	<0.007		
Zinc content	5	mg/L	0.1		
Phenol	3	mg/L	<0.007		
Soluble manganese content	10	mg/L	0.09		
Soluble iron content	10	mg/L	0.3		
Coliform bacteria count	3,000	Num/cm^3	75		
Trichloroethylene	0.3	mg/L	<0.002		
Tetrachloroethylene	0.1	mg/L	<0.002		

<<Tongyeong Plant>>

- Total energy consumption (Crude oil equivalent) : 297 kL/year
- Total waste generated : 7.5 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) : 964 kL/year
- Total waste generated : 27 tons/year (recycling rate: 46.3 %)
- 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) : 32,747 kL/year

■ Total waste generated : 2,237 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	0.8
		Sulfur dioxide	50	mg/m^3N	37
		Total suspended particulates	30	mg/m^3N	10
Generator	Kerosene	Ringelmann smoke density	1	class	0.8
Cafeteria	Natural gas	Oily smoke	2	ppm	1.4
Scrubber	-	Hydrogen chloride	30	mg/m^3N	1.9
RTO	Natural gas	Toluene	40	mg/m^3N	<0.01
		Methanol	190	mg/m^3N	4.5

■ Water quality :

Industrial wastewater

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Ammonia and similar nitrogen compounds	15	mg/L	0.1	1.5	11
Hydrogen ion concentration	6.0～9.0	-	6.7	7.2	8.0
Chemical oxygen demand	80	mg/L	8.0	29	63
Suspended solids	30	mg/L	2.0	3.6	5.0
Zinc content	1	mg/L	<0.009		
Nitrogen content	20	mg/L	5.7	8.4	15
Copper content	0.5	mg/L	0.01	0.03	0.1
Nickel	0.5	mg/L	0.01	0.03	0.04

Human sewage

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Hydrogen ion concentration	6.0～9.0	-	6.5	6.6	6.6
Biochemical oxygen demand	20	mg/L	6.7	7.2	7.7
Chemical oxygen demand	100	mg/L	39	40	40
Suspended solids	70	mg/L	13	15	17
Animal/Vegetable oils	10	mg/L	3.1	3.3	3.5
Phosphates	0.5	mg/L	0.4		
Ammonia and similar nitrogen compounds	10	mg/L	0.2	0.3	0.3

TAIYO YUDEN (TIANJIN) ELECTRONICS CO., LTD.

■ Total energy consumption (Crude oil equivalent) : 788 kL/year

■ Total waste generated : 58 tons/year (recycling rate: 100 %)

■ Air emission :

Equipment	Emissions to Air	Emission Limit	Unit	Actual Max.
Drying furnace	Emisson density of non-methane hydrocarbon (NMHC)	120	mg/m^3N	6.1
		5.3	kg/h	4.4×10^{-2}
	Tin and its compounds	8.5	mg/m^3N	$<5.0\times10^{-5}$
		5.3	kg/h	2.4×10^{-7}

■ Water quality :

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Biochemical oxygen demand	300	mg/L		130	
Chemical oxygen demand	500	mg/L		340	
Suspended solids	400	mg/L		57	
N-hexane extract (animal/plant content)	100	mg/L		4.7	
Ammonical nitrogen	35	mg/L		30	
Phosphorus content	3	mg/L		2.3	

TAIYO YUDEN (PHILIPPINES), INC.

■ Total energy consumption (Crude oil equivalent) : 18,076 kL/year

■ Total waste generated : 1,354 tons/year (recycling rate: 89.6 %)

■ Air emission :

Equipment	Fuel	Emissions to Air	Emission Limit	Unit	Actual Max.
Generator	Kerosene	NOx	2,000	mg/m^3N	1,137
		Carbon monoxide	500	mg/m^3N	127
Scrubber	-	Hydrogen chloride	10	mg/m^3N	<0.03

■ Water quality :

Items	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Hydrogen ion concentration	6.0～9.0	-	7.0	8.1	8.7
Biochemical oxygen demand	100	mg/L	3.0	17	38
Chemical oxygen demand	200	mg/L	20	36	65
Suspended solids	100	mg/L	5.0	16	38
Oil & Grease	10	mg/L	1.0	1.7	3.0
Silver	1	mg/L	<0.01		
Lead and its compounds	0.1	mg/L	<0.01	<0.02	<0.02
Zinc content	1.5	mg/L	<0.003		
Nickel	0.3	mg/L	0.2	0.3	0.5

TAIYO YUDEN (SARAWAK) SDN.BHD.

■ Total energy consumption (Crude oil equivalent) : 38,293 kL/year

■ Total waste generated : 4,897 tons/year (recycling rate: 84.4 %)

■ Air emission :

Equipment	Fuel	Emissions to Air	Emission Limit	Unit	Actual Max.
Scrubber		Hydrogen chloride	0.4	g/m^3N	0.002
		Sulfuric acid	0.2	g/m^3N	0.002
Boiler	LP gas	Dust Particulate	0.4	g/m^3N	0.05
		Dark Smoke	20	%	<20
Sludge Dryer	LP gas	Dust Particulate	50	mg/m^3N	9.7
		Dark Smoke	20	%	<20
RTO	LP gas	Dust Particulate	0.4	g/m^3N	0.05
		Dark Smoke	20	%	<20

■ Water quality :

Industrial wastewater

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Temperature	40	℃	28	29	30
Hydrogen ion concentration	5.5～9.0	-	6.5	7.6	8.5
Biochemical oxygen demand	50	mg/L	2.0	5.4	26
Chemical oxygen demand	200	mg/L	18	46	88
Suspended solids	100	mg/L	5.0	5.9	12
Zinc content	2	mg/L	0.02	0.04	0.2
Copper content	1	mg/L	0.02	0.3	0.9
Nickel	1	mg/L	0.06	0.2	0.4
Tin	1	mg/L	0.08	0.3	0.7
Soluble iron content	5	mg/L	0.6	1.3	3.0

Human sewage

Item	Effluent Std.	Unit	Actual		
			Min.	Ave.	Max.
Hydrogen ion concentration	5.5～9.0	-	5.6	6.9	8.2
Biochemical oxygen demand	50	mg/L	2.0	2.3	4.1
Chemical oxygen demand	200	mg/L	10	18	40
Suspended solids	100	mg/L	5.0	5.0	5.5
Ammonia Nitrogen	50	mg/L	0.1	3.6	16
Oil & Grease	20	mg/L	1.0	1.3	1.7