

●Environmental Data for Individual Plants and Group Companies in FY2024

IBIDEN Engineering Co., Ltd

< Wastewater Measurement>

Item	Unit	National standard	City standard	Voluntary standard	Average	Maximum	Note
pH	-	5.0~9.0	5.0~9.0	5.0~9.0	7.6	7.8	
BOD	mg / L	600	600	600	2	6	
SS	mg / L	600	600	600	4	11	
Copper and copper compounds	mg / L	3	3	3	0.01	0.01	
Lead and lead compounds	mg / L	0.1	0.1	0.1	0.01	0.01	
Chromium	mg / L	2	2	2	0.02	0.02	
Hexavalent chromium	mg / L	0.5	0.5	0.5	0.02	0.02	
Fluorine and fluorine compounds	mg / L	8	8	8	0.1	0.1	
Cyanide compounds	mg / L	1	1	1	0.1	0.1	
1・1・1 Trichloroethane	mg / L	3	3	3	0.0005	0.0005	
1・1・2 Trichloroethane	mg / L	0.06	0.06	0.06	0.0006	0.0006	
1.3 Dichloropropanes	mg / L	0.02	0.02	0.02	0.0002	0.0002	
1・2 Dichloroethane	mg / L	0.04	0.04	0.04	0.0004	0.0004	
1・1 Dichloroethylene	mg / L	1	1	1	0.002	0.002	
Cis- 1・2 Dichloroethylene	mg / L	0.4	0.4	0.4	0.004	0.004	
Trichloroethylene	mg / L	0.3	0.3	0.3	0.002	0.002	
Tetrachloroethylene	mg / L	0.1	0.1	0.1	0.0005	0.0005	
Dichloromethane	mg / L	0.2	0.2	0.2	0.002	0.002	
Carbon tetrachloride	mg / L	0.2	0.2	0.2	0.0002	0.0002	
Cadmium and cadmium compounds	mg / L	0.03	0.03	0.03	0.003	0.003	
Phenol	mg / L	5	5	5	0.1	0.1	
n-H mineral oils	mg / L	5	5	5	1	1	
Arsenic and arsenic compounds	mg / L	0.1	0.1	0.1	0.01	0.01	
Alkyl mercury	mg / L	Not detected	Not detected	Not detected	Not detected	Not detected	
Organic phosphorus	mg / L	1	1	1	0.01	0.01	
Polyhalogenated biphenyl	mg / L	0.003	0.003	0.003	0.0005	0.0005	
Zinc and zinc compounds	mg / L	2	2	2	0.023	0.040	
Manganese and manganese compounds	mg / L	10	10	10	0.012	0.020	
Benzene	mg / L	0.1	0.1	0.1	0.001	0.001	
Boron and boron compounds	mg / L	10	10	10	0.1	0.1	
1,4-dioxane	mg / L	0.5	0.5	0.5	0.05	0.05	

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IBIDEN Bussan Co., Ltd

<Wastewater Measurement >

Item	Unit	National standard	City standard	Voluntary standard	Average	Maximum	Note
pH	-	5.8~8.6	5.8~8.6	6.1~8.3	7.4	7.6	
BOD	mg / L	160	100	80	1.8	6.6	
COD	mg / L	160	160	128	4.4	10.0	
SS	mg / L	200	90	72	1.5	4.0	
n-H mineral oils	mg / L	10	10	8	<1	<1	
Nitrogen	mg / L	120	120	25	3.0	10.0	
Phosphorus	mg / L	16	16	7.5	0.05	0.08	

<Air Measurement>

Item	Equipment	Unit	National standard	City standard	Voluntary standard	Average	Maximum	Note
Soot	Boiler No.1	g/m ³ N	0.3	0.3	0.24	0.005	0.007	
NOx	Boiler No.1	ppm	180	180	144	83	93	
SOx	Boiler No.1	K-value	11.5	11.5	9.2	3.4	4.8	

IBIDEN Jushi Co., Ltd

<Air Measurement>

Item	Equipment	Unit	National standard	City standard	Voluntary standard	Average	Maximum	Note
Soot	Boiler No.1	g/m ³ N	0.3	0.3	0.24	0.003	0.003	
	Boiler No.3	g/m ³ N	0.3	0.3	0.24	0.003	0.003	
NOx	Gas Turbine	ppm	70	70	65	41	43	
	Boiler No.1	ppm	180	180	144	40	40	
	Boiler No.3	ppm	180	180	144	52	63	
SOx	Boiler No.1	m ³ N/h	0.81	0.81	1.65	0.09	0.09	
	Boiler No.3	m ³ N/h	0.81	0.81	0.65	0.02	0.03	

●Environmental Data for Individual Plants and Group Companies in FY2024

IBIDEN Philippines, Inc.

<Wastewater Measurement >

Item	Unit	Industrial park standard	Voluntary standard	Average	Maximum	Note
pH	-	6.0～9.5	6.2～9.3	7.8	8.8	Industrial park standards revised
BOD	mg / L	500	400	37	160	
COD	mg / L	800	700	129	551	
SS	mg / L	350	280	11	38	
Copper	mg / L	1.0	0.8	0.06	0.22	
Lead	mg / L	0.10	0.08	0.06	0.10	Managed within an industrial park and compliant with
Cyanide compounds	mg / L	0.2	0.16	0.02	0.14	
Nickel	mg / L	1.0	0.8	0.03	0.04	Industrial park standards revised
Color	mg / L	150	120	8	20	
Oil & Grease	mg / L	5	4	2	4	
Iron (Dissolved)	mg / L	7.5	6.0	0.23	1.10	Industrial park standards revised
Manganese (Dissolved)	mg / L	2.0	1.6	0.14	0.37	Same as above
クロロイド	mg / L	450	360	149	365	Managed within an industrial park and compliant with
ホウ素	mg / L	4.0	3.2	0.68	0.93	Same as above
硫酸塩	mg / L	550	440	141	219	Same as above
硫酸態窒素(硝酸塩)	mg / L	14	11	3	7	Same as above
NH3-N アンモニア性窒素	mg / L	25	20	1	6	Same as above
リン酸塩	mg / L	15	12	0.27	1.30	Same as above
フッ化物	mg / L	2.0	1.6	0.57	1.10	Same as above
トリクロロエチレン	mg / L	9.0	7.2	0.00	0.00	Same as above

<Air Measurement>

Item	Unit	National standard	Voluntary standard	Average	Maximum	Note
NOx	mg/m ³	500	400	6	6	
SOx	mg/m ³	500	400	9	14	

<Noise Measurement>

Time	Unit	National standard	Voluntary standard	Average	Maximum	Note
Morning (5am - 9am)	mg/m ³	65	58	58	62	Managed within an industrial park and compliant with
Daytime (9am - 6 pm)	mg/m ³	70	63	57	66	Managed within an industrial park and compliant with
Evening (6 pm - 10 pm)	mg/m ³	65	58	56	62	Managed within an industrial park and compliant with
Nighttime (10 pm - 5 am)	mg/m ³	60	54	55	60	Managed within an industrial park and compliant with

●Environmental Data for Individual Plants and Group Companies in FY2024

IBIDEN Electronics Malaysia Sdn. Bhd.

< Wastewater Measurement>

Item	Unit	National standard	Voluntary standard	Average	Maximum	Note
pH	-	5.5～9.0	6.2～8.3	7.1	7.9	
BOD	mg / L	50	50	5	23	
COD	mg / L	200	100	5	38	
Total Suspended Solids, TSS	mg / L	100	100	7	31	
Copper	mg / L	1	0.5	0.04	0.19	
Lead	mg / L	0.5	0.5	0.0	0.0	
Chromium (Hexavalent)	mg / L	0.05	0.05	0.00	0.00	
Cyanide compounds	mg / L	0.1	0.1	0.00	0.00	
Nickel	mg / L	1	1	0.06	0.49	
Color	ADMI	200	200	0.00	0.00	
Oil & Grease	mg / L	10	10	1.60	4.00	
Iron (Dissolved)	mg / L	5	5	0.19	2.49	
Manganese (Dissolved)	mg / L	1	1	0.07	0.38	
Formaldehyde	mg / L	2	2	0.00	0.00	

<Noise Measurement>

Time	Unit	National standard	Voluntary standard	Average	Maximum	Note
Daytime (7am - 10 pm)	mg/m ³	75	75	59	66	
Nighttime (10 pm - 7 am)	mg/m ³	75	75	54	57	

●Environmental Data for Individual Plants and Group Companies in FY2024

IBIDEN Fine Ceramics (Suzhou) Co.,Ltd.

< Wastewater Measurement>

測定項目	Unit	Industrial park standard	Voluntary standard	Average	Maximum	Note
PH	-	6～9	6～9	7.8	8.3	
COD	mg / L	500	500	58.1	98.0	
SS	mg / L	400	400	21.3	56.0	
NH3-N	mg / L	45	45	14.1	18.9	
TP	mg / L	8	8	0.8	1.2	
TN	mg / L	70	70	17.2	19.9	
petroleum	mg / L	20	20	0.8	2.0	

●Environmental Data for Individual Plants and Group Companies in FY2024

IBIDEN Graphite Korea Co., Ltd.

<Air Measurement>

Item	Unit	National regulations	Voluntary standard	Average	Maximum	Note
NOx	ppm	150	150	1.8	19.5	
SOx	ppm	200	200	1.6	43.8	
PM	mg/m ³	30	30	0.9	2.8	

●Environmental Data for Individual Plants and Group Companies in FY2024

IBIDEN Hungary Kft.

< Wastewater Measurement>

Item	Unit	National standard	Industrial park standard	Voluntary standard	Average	Maximum	Note
pH	-	6.5～10.0	6.5～10.0	6.5～10.0	8.4	8.7	
Electrical conductivity	μS/ cm	2,500	2,500	2,500	572	632	
Available chlorine	mg / L	30	30	30	0.1	0.1	
COD	mg / L	1,000	1,000	1,000	61	75	
BOD	mg / L	500	500	500	22	35	
Total inorganic nitrogen	mg / L	120	120	120	8	11	
Total nitrogen	mg / L	150	150	150	11	12	
Ammonium	mg / L	100	100	100	8	11	
Total phosphorus	mg / L	20	20	20	2	3	
Sulphate	mg / L	400	400	400	29	43	
Organic solvent extract (grav.)	mg / L	50	50	50	2	2	
Phenols	mg / L	10	10	10	0.01	0.01	
Iron	mg / L	20	20	20	0.10	0.11	
Manganese	mg / L	5	5	5	0.02	0.03	
Sulphide	mg / L	1	1	1	0.02	0.03	
Total dissolved solid	mg / L	2,500	2,500	2,500	422	456	
Total solids	mg / L	2,500	2,500	2,500	225	276	
Fluoride	mg / L	50	50	50	0	0	
Tars	mg / L	5	5	5	2	2	

IBIDEN Mexico, S.A. de C.V.

< Wastewater Measurement>

Item	Unit	Industrial park standard	Voluntary standard	Average	Maximum	Note
pH	-	5.0~10	6.5~8.5	7.9	8.6	Managed within an industrial park and compliant with
Temperature	°C	40	20 - 35	28	38	Managed within an industrial park and compliant with
COD	mg/L		630	94	226	
BOD	mg/L	350	350	33	50	
Total Suspended Solids, TSS	mg/L	150	100	14	32	
Total Nitrogen, Kjeldahl	mg/L		30	10	10	
Total Nitrogen	mg/L	40	30	0.3	0.7	
Total phosphorous	mg/L	20	20	1.0	1.1	
Oils and greases (Organic solvent extract)	mg/L	15	15	6	8	
Settleable solids (10 min)	mg/L	1	1	0	0	
Total arsenic	mg/L	0.2	0.2	0.01	0.01	
Total cadmium	mg/L	0.2	0.2	0.01	0.02	
Total cyanide	mg/L	2	2	0.03	0.03	
Total copper	mg/L	4	4	2.0	2.2	
Hexavalent chromium	mg/L	1	1	0.1	0.1	
Total Mercury	mg/L	0.01	0.01	0.0028	0.0030	
Total Niquel	mg/L	2	2	1	1	
Total Lead	mg/L	0.5	0.5	0.1	0.1	
Total Zinc	mg/L	10	10	6	6	
Fecal coliforms	NMP/L	10,000,000	10,000,000	7	20	
Electrical conductivity	mS/cm	2,500	1,500	580	1070	
Total dissolved solids (total salt 600°C)	mg/L		1,000	395	505	
Sulfates	-		35	12	23	
Active substances to methylene blue	mg/L		2	0.1	0.3	
Phenols	mg/L		0.03	0.01	0.02	
Total phosphate	mg/L	5	5	3	3	
Free chlorine	mg/L		1000	77	185	
Free chlorine	mg/L		1000	77	185	The reference value was incorrect and has been corrected. standards
Natural pigment	m-1	3	3	0.4	0.4	New
Water Toxicity	TU	2	2	1	1	New

<Air Measurement>

Item	Unit	Industrial park standard	Voluntary standard	Average	Maximum	Note
Carbon monoxide	ppm	500	500	106	274	
NOx	ppm	375	375	2.5	11.1	
Mercury	ppm	0.025	0.025	0.00002	0.00002	
Soot	mg/m ³	1500	1500	11.9	30.3	
CO2 from electric consumption	ton	25,000		14,815	28,146	This is electricity consumption without renewable energy. We are

<Noise Measurement>

Place	Unit	Industrial park standard	Voluntary standard	Average	Maximum	Note
North (Morning)	dB	68	68	57	57	
North (Night)	dB	68	65	58	58	
South (Morning)	dB	68	68	65	65	
South (Night)	dB	68	65	67	67	The retest was below the reference value
East (Morning)	dB	68	68	60	60	
East (Night)	dB	68	65	61	61	
West (Morning)	dB	68	68	56	56	
West (Night)	dB	68	68	59	59	

Micro-Mech, Inc.

<Air Measurement>

Item	Unit	Industrial park standard	Voluntary standard	Average	Maximum	Note
Trichlorethylene	lbs	9000	9000	6853	6853	

<Noise Measurement>

Time	Unit	Industrial park standard	Voluntary standard	Average	Maximum	Note
Daytime	dB	90	90	78	83	