

参考資料 B-4 公共用水域への汚水排出基準ならびに水質環境基準 (案)

表 B4-1 公共用水域への(下水)排水基準

No.	Determinant	Tolerance limit
1.	Total Suspended Solids, mg/l, max	50
2.	Particle size of total suspended solids	shall pass sieve of aperture size 850 micro m.
3.	pH value at ambient temperature	6.0 to 8.5
4.	Biochemical Oxygen Demand-BOD <sub>5</sub> in 5 days at 20° C, mg/l, max	30
5.	Temperature of discharge	shall not exceed 40° C in any Section of the Stream within 15 m down stream from the effluent outlet.
6.	Oils and greases, mg/l max	10.0
7.	Phenolic Compounds (as phenolic OH)mg/l, max	1.0
8.	Cyanides as (CN) mg/l, max	0.2
9.	Sulfides, mg/l, max	2.0
10.	Flourides, mg/l, max	2.0
11.	Total residual chlorine mg/l, max	1.0
12.	Arsenic, mg/l, max	0.2
13.	Cadmium total, mg/l, max	0.1
14.	Chromium total, mg/l, max	0.1
15.	Copper total, mg/l, max	3.0
16.	Lead, total, mg/l, max	0.1
17.	Mercury total, mg/l, max	0.0005
18.	Nickel total, mg/l, max	3.0
19.	Selenium total, mg/l max	0.05
20.	Zinc total, mg/l, max	5.0
21.	Ammoniacal nitrogen, mg/l, max	50.0
22.	Pesticides	undetectable
23.	Radio active material	
	(a) Alpha emitters micro curie/ml	10 <sup>-7</sup>
	(b) Beta emitters micro curie/ml	10 <sup>-8</sup>
24.	Chemical Oxygen Demand (COD), mg/l, max	250

Note 1 : All efforts should be made to remove colour and unpleasant odour as far as practicable.

Note 2 : These values are based on dilution of effluents by at least 8 volumes of clean receiving water. If the dilution is below 8 times, the permissible limits are multiplied by 1/8 of the actual dilution.

Note 3 : The above mentioned General Standards shall cease to apply with regard to a particular industry when industry specific standards are notified for that industry.

出典 : The Gazette of the Democratic Socialist Republic of Sri Lanka, 1990

表 B4-2 灌漑利用水域における許容工業排水基準

No.	Determinant	Tolerance Limit
1	Total dissolved solid, mg/l, max	2100
2	pH value at ambient temperature	5.5 to 9.0
3	Biochemical Oxygen Demand (BOD <sub>5</sub> ) in 5 days at 20 °C, mg/l, max	250
4	Oils and grease, mg/l, max.	10.0
5	Chloride (as Cl), mg/l, max.	600
6	Sulfate (as SO <sub>4</sub> ), mg/l, max.	1000
7	Boron (as B), mg/l, max.	2.0
8	Arsenic (as As), mg/l, max.	0.2
9	Cadmium (as Cd), mg/l, max.	2.0
10	Chromium (as Cr), mg/l, max.	1.0
11	Lead (as Pb), mg/l, max.	1.0
12	Mercury (as Hg), mg/l, max.	0.01
13	Sodium adsorption ratio : (SAR)	10 to 15
14	Residual Sodium Carbonate, mol/l, max.	2.5
15	Radio active material :	
	(a) Alpha emitters, micro curie/ml	10 <sup>-9</sup>
	(b) Beta emitters, micro curie/ml	10 <sup>-1</sup>

出典 : The Gazette of the Democratic Socialist Republic of Sri Lanka, 1990

表 B4-3 沿岸地域における工業および生活排水基準

No.	Determinant	Tolerance Limit
1.	Total Suspended Solids, mg/l, max.	
	(a) For process waste waters	150
	(b) For cooling water effluents	Total suspended matter content of influent cooling water plus 10 per cent.
2.	Particle size of -	
	(a) Floatable Solids, max	3 mm
	(b) Setttable solids, max	850 micro m.
3.	pH range at ambient temperature	6.0 - 8.5
4.	Biochemical Oxygen Demand (BOD <sub>5</sub> ) in 5 days at 20°C, mg/l, max.	100
5.	Temperature, max	45°C at the point of discharge
6.	Oils and grease, mg/l, max.	20
7.	Residual Chlorine, mg/l, max.	1.0
8.	Ammonical Nitrogen mg/l, max.	50.0
9.	Chemical Oxygen Demand (COD) mg/l, max.	250
10.	Phenolic compounds (as phenolic Oil) mg/l, max.	5.0
11.	Cyanides (as CN) mg/l, max.	0.2
12.	Sulfides (as S), mg/l, max.	5.0
13.	Fluorides (as F), mg/l, max.	15
14.	Arsenic (as As) mg/l, max.	0.2
15.	Cadmium (as Cd) Total, mg/l, max.	2.0
16.	Chromium (as Cr) Total, mg/l, max.	1.0
17.	Copper (as Cu) total, mg/l, max.	3.0
18.	Lead (as Pb) total, mg/l, max.	1.0
19.	Mercury (as Hg) total, mg/l, max.	0.01
20.	Nickel (as Ni) total, mg/l, max.	5.0

出典 : The Gazette of the Democratic Socialist Republic of Sri Lanka, 1990

表 B4-4 公共用水域へのゴム工場からの許容排水基準

No.	Determinant	Tolerance Limit	
		Type I Factories*	Type II Factories**
1.	pH value at ambient temperature	6.5 to 8.5	6.5 to 8.5
2.	Total suspended solids, mg/l, max	100	100
3.	Total solids, mg/l, max	1500	1000
4.	Biochemical Oxygen Demand (BOD <sub>5</sub> ) in 5 days at 20°C, mg/l, max	60	50
5.	Chemical Oxygen Demand (COD) mg/l, max	400	400
6.	Total Nitrogen, mg/l, max	300	60
7.	Ammoniacal Nitrogen, mg/l, max	300	40
8.	Sulfides, mg/l, max	2.0	2.0

\* Type I Factories - Latex Concentrate

\*\* Type II Factories - Standard Lanka Rubber; Crepe Rubber and Ribbed Smoked Sheets

Note I: All efforts should be made to remove colour and unpleasant odour as far as practicable.

Note II: These values are based on dilution of effluents by at least 8 volumes of clean receiving water. If the dilution is below 8 times, the permissible limits are multiplied by 1/8 of the actual dilution.

出典: The Gazette of the Democratic Socialist Republic of Sri Lanka, 1990

表 B4-5 公共用水域への繊維産業からの許容排水基準

No.	Determinant	Tolerance Limit
1.	pH value at ambient temperature	6.5 to 8.5
2.	Temperature, °C, max	40 measured at site of sampling
3.	Total suspended solids, mg/l, max	50
4.	Biochemical Oxygen Demand (BOD <sub>5</sub> ) in 5 days at 20°C mg/l, max.	60
5.	Chemical Oxygen Demand (COD) mg/l, max.	250
6.	Oils and grease, mg/l, max.	10.0
7.	Phenolic compounds (as phenolic OH), mg/l, max.	1.0
8.	Sulfides, mg/l, max.	2.0
9.	Chromium total, mg/l, max.	2.0
10.	Hexavalent chromium, mg/l, max.	0.5
11.	Copper, total, mg/l, max.	3.0
12.	Zinc total, mg/l, max.	5.0
13.	Ammoniacal nitrogen, mg/l, max.	60
14.	Chloride (as Cl) mg/l, max.	70

Note I: All efforts should be made to remove colour and unpleasant odour as far as practicable.

Note II: These values are based on dilution of effluents by at least 8 volumes of clean receiving water. If the dilution is below 8 times, the permissible limits are multiplied by 1/8 of the actual dilution.

出典: The Gazette of the Democratic Socialist Republic of Sri Lanka, 1990

表 B4-6 皮なめし産業に対する許容排水基準

No.	Determinant	Tolerance Limits for Effluent	
		Discharged into Inland Surface Waters	Discharged into Marine Coastal Areas
1.	pH value at ambient temperature	5.5 to 9.0	5.5 to 9.0
2.	Total suspended solids, mg/l max.	100	150
3.	Biochemical Oxygen Demand (BOD <sub>5</sub> ) in 5 days at 20°C, mg/l, max.	60	100
4.	Chemical Oxygen Demand (COD) mg/l, max.	250	300
5.	Alkalinity (as CaCO <sub>3</sub> ) mg/l, max.	750	not applicable
6.	Chloride (as Cl <sup>-</sup> ), mg/l, max.	1000	not applicable
7.	Hexavalent chromium, mg/l, max.	0.5	0.5
8.	Chromium total, mg/l, max.	2.0	2.0
9.	Oils and greases, mg/l, max.	10.0	20.0
10.	Phenolic compounds (as Phenolic OH) mg/l, max.	1.0	5.0
11.	Sulfides, mg/l, max.	2.0	5.0

Note I : All efforts should be made to remove colour and unpleasant odour as far as practicable.

Note II : The value are based on dilution of effluents by at least 8 volumes of clean receiving water. If the dilution is below 8 times, the permissible limits are multiplied by 1/8 of the actual dilution.

出典 : The Gazette of the Democratic Socialist Republic of Sri Lanka, 1990

表 B4-7 (1) 表流水水質基準 (案)

Parameter	Unit, Type of limit	Nature conser-vation	Drinking water, only disinfection	Bathing	Fish and aquatic life	Drinking water, convent. treatment	Irrigation and agriculture	Other
Colour	lt.u. max.	n	10 av 30 max	-	-	300	-	-
Odour	-	n	unobj.	unobj.	-	-	-	-
Dissolved oxygen	mg/l. min	n	6	5	6 mean	-	-	-
BOD (5 days, 20°C)	mg/l. max	n	2	4 min daily	4	3	3	4
pH	-	n	6.5-8.5	6-8.5	6-8.5	5.0-8.5	-	5.0-8.5
Nitrates (NO <sub>3</sub> -N)	mg/l. max.	n	-	-	-	-	-	5
Total ammonia (NH <sub>3</sub> -N)	mg/l. max.	n	-	-	-	-	-	-
- pH < 7.5	-	n	-	-	10.3	-	-	10.3
- pH = 8.0	-	n	-	4.9	-	-	4.9	-
- pH = 8.5	-	n	-	1.8	-	-	1.8	-
Chlorides (Cl)	mg/l. max	n	200 des. 1200 max.	-	-	200 des. 1200 max.	-	-
Cyanides (CN)	mg/l. max.	n	-	-	0.005	-	-	0.005
Fluorides (F)	mg/l. max.	n	1.5	-	-	1.5	-	-
Sulphates (SO <sub>4</sub> )	mg/l. max.	n	400	-	-	400	-	-
Total coliform (P=80%)	M(FN)/100 ml.	n	50	5000	20,000	5000	-	-
Total arsenic (As)	µg/l. max	n	50	-	50	50	-	50
Total cadmium (Cd)	µg/l. max	n	5	-	5	5	-	5

Continued on next page

出處：Workshop on Environmentally Sustainable Industrial Development (Standards, Guidelines and Implementation), CENTRAL ENVIRONMENTAL AUTHORITY 1992

表 B4-7 (2) 表流水水質基準 (緊)

Parameter	Unit, Type of limit	Nature conservation	Drinking water, only disinfection	Bathing	Fish and aquatic life	Drinking water, convent. treatment	Irrigation and agriculture	Other	
Total chromium (Cr)	µg/l, max.	n	50	-	2	50	-	50	
Total copper (Cu)	µg/l, max.	n	-	-	II	-	-	100	
					< 60				Cu
					60-120				2
					120-180				3
Iron (Fe)	µg/l, max.	n	-	-	300	2	-	-	
									Lead (Pb)
Lead (Pb)	µg/l, max.	n	50	-	II	50	-	50	
					< 60				Pb
					60-120				2
					120-180				4
Manganese (Mn)	µg/l, max.	n	-	-	-	-	-	1000	
									Mercury (Hg)
Mercury (Hg)	µg/l, max.	n	1	-	0.1	1	-	2	
					Nickel (Ni)				
Nickel (Ni)	µg/l, max.	n	-	-	II	-	-	100	
					< 60				Ni
					60-120				25
					120-180				65
Selenium (Se)	µg/l, max.	n	10	-	120-180	10	-	-	
					> 180				110
Zinc (Zn)	µg/l, max.	n	-	-	1	-	-	1000	
					> 180				150
					30				

Continued on next page

出處：Workshop on Environmentally Sustainable Industrial Development (Standards, Guidelines and Implementation), CENTRAL ENVIRONMENTAL AUTHORITY 1992

表 B4-7 (3) 表流水水質基準 (案)

Parameter	Unit, Type of limit	Nature concentration	Drinking water, only disinfection	Bathing	Fish and aquatic life	Drinking water, overall treatment	Irrigation and agriculture	Other
Gross alpha radionucl.	PC/l, max.	n	3	3	-	3	-	3
Gross beta radionucl.	µC/l, max.	n	30	30	-	30	-	30
Thermic comp (C <sub>15</sub> O <sub>11</sub> )	µg/l, max.	n	2	5	1	5	-	5
Anionic deterg. as MBAS	µg/l, max.	n	200 des. 1000 max.	1000	-	200 des. 1000 max.	-	-
Total pesticides	µg/l, max.	n	-	-	-	-	-	50
Aldrin	µg/l, max.	n	-	-	-	-	-	0.1
DDT	µg/l, max.	n	-	-	0.001	-	-	1
Dieldrin	µg/l, max.	n	-	-	0.004	-	-	0.1
Lindrin	µg/l, max.	n	-	-	0.0023	-	-	-
Heptachlor & heptachlor epoxide	µg/l, max.	n	-	-	0.01	-	-	0.2
α-lisachlorocyclohexane	µg/l, max.	n	-	-	-	-	0.02	-
Other organic micro-pollutants	-	n	-	-	acc table S.2	-	-	-
Conductivity	ds/m, max.	n	-	-	-	-	-	-
TDS	mg/l, max.	n	-	-	-	-	0.7	-
							0.5	

Abbreviations:

ll = Hardness (CaCO<sub>3</sub>), mg/l

des. = desirable

max. = maximum

P=80% = 80% of the samples give a value that is equal to or less than the indicated limit

出所: Workshop on Environmentally Sustainable Industrial Development(Standards, Guidelines and Implementation), CENTRAL ENVIRONMENTAL AUTHORITY 1992

表 B4-8 漁業資源保全のための表流水の最大許容有機汚染物質基準 (案)

Parameter	Unit	Limit <sup>1</sup>
Benzene <sup>2</sup>	mg/l	0.3
Chlordane	ng/l	6
<i>Chlorinated benzenes<sup>2</sup></i>		
Monochlorobenzene	µg/l	15
Dichlorobenzene 1,2- and 1,3-	µg/l	2.5
Dichlorobenzene 1,4-	µg/l	4.0
Trichlorobenzene 1,2,3-	µg/l	0.9
Trichlorobenzene 1,2,4-	µg/l	0.5
Trichlorobenzene 1,3,5-	µg/l	0.65
Tetrachlorobenzene 1,2,3,4-	µg/l	0.10
Tetrachlorobenzene 1,2,3,5-	µg/l	0.10
Tetrachlorobenzene 1,2,4,5-	µg/l	0.15
Pentachlorobenzene	µg/l	0.030
Hexachlorobenzene	µg/l	0.0065
<i>Chlorinated ethylenes<sup>2</sup></i>		
Tetrachloroethylene	µg/l	260
<i>Chlorinated phenols</i>		
Monochlorophenols	µg/l	7
Dichlorophenols	µg/l	0.2
Trichlorophenols	µg/l	18
Tetrachlorophenols	µg/l	1
Pentachlorophenol	µg/l	0.5
DDT	ng/l	1
Endosulfan	µg/l	0.02
Endrin	ng/l	2.3
Ethylbenzene <sup>2</sup>	mg/l	0.7
Heptachlor + Heptachlorepoide	µg/l	0.01
Hexachlorobutadiene	µg/l	0.1
Hexachlorocyclohexane isomers	µg/l	0.01
Phenols (total)	µg/l	1
Phenoxy herbicides (2,4-D)	µg/l	4.0
<i>Phthalate esters:</i>		
DBP	µg/l	4
DEHP	µg/l	0.6
Other phthalate esters	µg/l	0.2
Polychlorinated biphenyls (total)	ng/l	1
Toluene	mg/l	0.3
Toxaphene	ng/l	8

<sup>1</sup> Total concentration in unfiltered sample

<sup>2</sup> Tentative standard

出典: Workshop on Environmentally Sustainable Industrial Development(Standards, Guidelines and Implementation), CENTRAL ENVIRONMENTAL AUTHORITY 1992



表 B4-9 スリランカにおける沿岸海域の利用目的別水質基準 (案)

Parameter	Unit	Value for different use classes			
		1 Nature conser- vation	2 Fishery of shell fish	3 Fishery of fin fish	4 Non consump- tion use
Floatable solids		N	N	N	NO
Floatable oil/grease		N	N	N	NO
Suspended solids		N	N	N	NO
Transparency <sup>1</sup>		N	<10%	<10%	<50%
Color		N	NV	NV	NO
Odor		N	N	N	NO
Temperature	°C	<32	<32	<32	<32
Coliform (total)	MPN/ml	N	N	<10	<20
Coliform (fecal)	MPN/ml	N	N	<3	<6
pH		N	7.0-8.5	7.0-8.5	6.5-9.0
Salinity <sup>1</sup>	g/l	N	29-35	<10%	<20%
Dissolved oxygen	satur.	N	>80%	>70%	>60%
BOD	mg O <sub>2</sub> /ml	N	<5	<5	<10
Phosphate (total)	mg P/ml	N	NA	NA	NA
Nitrogen (total)	mg N/ml	N	NA	NA	NA
Ammonia (free)	mg N/ml	N	<0.4	<0.4	<1.2
Cyanide	µg/l	N	<10	<10	<20
Sulfide	µg/l	N	<5	<5	<10
Mercury	µg/l	N	<0.1	<0.1	<0.2
Cadmium	µg/l	N	<5	<5	<10
Chrome (hex.)	µg/l	N	<25	<25	<50
Lead	µg/l	N	<25	<25	<50
Copper	µg/l	N	<25	<25	<50
Manganese	µg/l	N	<100	<100	<200
Zinc	µg/l	N	<50	<50	<100
Iron	µg/l	N	<300	<300	<600
Arsenic	µg/l	N	<50	<50	<100
Fluoride	mg/l	N	<1.5	<1.5	<3
Phenols	µg/l	N	<30	<30	<60
PCB (total)	µg/l	N	<0.03	<0.03	<0.06
Chlor. pestic. (total)	µg/l	N	<0.05	<0.05	<0.1

<sup>1</sup> % = change from natural condition

N Natural condition

NO Not objectionable

NV Not visible

NA Below level causing algae bloom (to be established)

< smaller than

> higher than

[The page contains extremely faint and illegible text, likely bleed-through from the reverse side of the document. The text is too light to transcribe accurately.]







JICA