Chemical Industry Effluent Standards

Eleven articles promulgated by Environmental Protection Administration Order Huan-Shu-Shui-Tzu No. 1030005888 on January 22, 2013.

Article 1

These Standards are determined pursuant to Article 7, Paragraph 2 of the Water Pollution Control Act.

Article 2

Terms used in these Standards are defined as follows:

I. "High-nitrogen processes" mean the following nitrogen-including ~~bearing~~ processes, where the volume of process wastewater exceeds 40% of the permit-approved effluent volume at the discharge point:
   A. Ammonia chemical manufacturing process.
   B. Nitrogenous fertilizer manufacturing process.
   C. Ammonia fertilizer manufacturing process.
   D. Ammonium phosphate fertilizer manufacturing process.
   E. Compound fertilizer with nitrogen manufacturing process.
   F. Nitrogen trifluoride manufacturing process.
   G. Ammonium sulfate chemical manufacturing process.
   H. Ethylenediaminetetraacetates (EDTA) chemical manufacturing process.
   I. Other Ammonia-bearing compounds manufacturing process.
   J. Acrylonitrile manufacturing process.
   K. Urea manufacturing process.
   L. Aniline manufacturing process.
   M. Caprolactam manufacturing process.
   N. Ethanolamine chemical manufacturing process.
   O. Acid amide chemical manufacturing process.
   P. Other synthetic amine and nitrile compounds manufacturing process.
   Q. Methyl methacrylate (MMA) chemical manufacturing process.
   R. Urethane manufacturing process.
   S. Urea formaldehyde resin manufacturing process.
   T. Melamine resin manufacturing process.
   U. Polyacrylonitrile (PAN) fiber manufacturing process.
   V. Polyamide plastic (nylon) manufacturing process.
   W. Acrylonitrile-butadiene copolymer (AB) chemical manufacturing process.
   X. Acrylonitrile-butadiene-styrene copolymer (ABS) chemical manufacturing process.
   Y. Acrylonitrile styrene copolymer (AS) chemical manufacturing process.
   Z. Dye manufacturing process (azo dyes).
   AA. Coke manufacturing process, including coke and its by-product, beehive coke, fluidized coke and petroleum coke manufacturing process.

II. "Newly-established enterprises" means those enterprises for which planning had not been completed as of January 22, ~~2013~~2014, or for which planning had been completed, but project bid request procedures had not yet been completed as of that time.

III. "Existing enterprises" means those enterprises that had been completed, were in construction, or for which project bid request procedures had been completed as of January 22, ~~2013~~2014.

Article 3

These Standards are applicable to chemical enterprises announced as regulated in the enterprise classification and definitions of the Water Pollution Control Act.

Article 4

See the Attached Table for the water quality items and limits prescribed in these Standards.

Article 5

The industries, their associations, or relevant environmental groups may submit detailed scientific data and information to the Responsible Agency at the central government level to support argument for revision of these Standards.

Article 6

The COD limits determined in these Standards shall be tested using the potassium dichromate oxidation method; the true color shall be tested using true color colorimetry.

Article 7

The dioxin concentration is calculated as the sum of the measured concentrations of 17 compounds, including 2,3,7,8-tetrachlorinated dibenzo-p-dioxin-2,3,7,8-TeCDD, 2,3,7,8-tetrachlorinated dibenzofuran,2,3,7,8-TeCDF and 2,3,7,8- penta-, hexa-, hepta-, and octa-chlorinated dioxins and furans, multiplied by the international dioxin toxic equivalency factors (I-TEF), and is expressed as a toxicity equivalency quantity of 2,3,7,8-tetrachlorinated dibenzo-p-dioxin quantity (TEQ).

Article 8

Concerning the limits in the foregoing paragraph, apart from the pH, which is defined as a range, the rest are defined as the maximum allowed value using the following units of measure:

I. Water temperature: Celsius (°C)
II. pH: Unitless
III. True color: Unitless
IV. Dioxin: pg I-TEQ/L
V. Other items: Milligrams per liter (mg/L)

Article 9

With regard to the limits for the items in these Standards, apart from water temperature and pH, these standards shall not apply when an enterprise obtains water from a water body for non-contact cooling or circulating cooling and such water is discharged to the surface water body from which it was originally obtained.

Article 10

When an enterprise belongs to two or more industry types ~~or belongs to one industry type but operates different production processes~~, the mixing, treatment and discharge of wastewater shall comply with the effluent standards for each industry type. When identical control items have different control limits, effluent shall comply with the stricter of the two limits. When the quantity of wastewater from one industry type is 75% or more of the total wastewater quantity from all industry types and independent cumulative measuring equipment has been installed, the enterprise may apply with the competent authority to make the effluent standards of the said industry type the basis for all control items.

The percentage of wastewater as stated in the foregoing paragraph shall be calculated according to records starting from six months prior to the date of application.

Article 11

Unless an enforcement date is separately designated, these standards shall take effect on the date of promulgation.

Attached Table

Item	Limit	Remarks
Water temperature	38 ºC (applicable to the period from May to September)	Applicable to the discharging of effluents into surface water bodies other than the ocean.
	35 ºC (applicable to the period from October to April of the following year)	Applicable to the discharging of effluents into surface water bodies other than the ocean.
	42 ºC, and the temperature difference may not exceed 4 ºC for surface water at 500 meters from the discharge point.	Applicable to effluents directly discharged into the sea.
pH	6.0 - 9.0	
Nitrate nitrogen	50	
Ammonia nitrogen	10	Applicable to enterprises discharging wastewater or sewage into water source water quality protection zones.
	20	Applicable to newly-established enterprises not discharging wastewater or sewage into water source water quality protection zones.
	20	1.Applicable to existing enterprises with no high-nitrogen processes not discharging wastewater or sewage into a water source water quality protection zones; enforced from July 1, 2014. 2.When a project or other improvement measure is involved, the enterprise shall submit an effluent pollutant reduction management plan by March 31, 2014, and shall implement the content of said plan after approval by the special municipality, county, or city competent authority; enforced from December 31, 2017.
	150	Applicable to existing enterprises with high-nitrogen processes not discharging wastewater or sewage into a water source water quality protection zones;

Item	Limit	Remarks
		enforced from December 31, 2016.
	60	Applicable to existing enterprises with high-nitrogen processes not discharging wastewater or sewage into a water source water quality protection zones; enforced from December 31, 2018.
Orthophosphates (calculated as trivalent phosphate radicals)	4.0	Applicable to enterprises discharging wastewater or sewage into water source water quality protection zones.
Phenols	1.0	
Anionic surfactants	10	
Cyanide	1.0	
Oil and grease (n-hexane extract)	10	
Soluble iron	10	
Soluble manganese	10	
Cadmium	0.03	
Lead	1.0	
Total chromium	2.0	
Hexavalent chromium	0.5	
Methyl mercury	0.0000002	
Total mercury	0.005	
Copper	3.0	
Zinc	5.0	
Silver	0.5	
Nickel	1.0	
Selenium	0.5	
Arsenic	0.5	
Boron	1.0	
Sulfides	1.0	
Formaldehyde	3.0	
PCBs	0.00005	
Dioxin	10	Applicable to existing enterprises with chemical industry (manufacture of vinyl chloride) that had been completed, were

Item	Limit	Remarks
		in construction, or for which project bid request procedures had been completed as of October 12, 2012.
	5	Applicable to newly-established enterprises with chemical industry (manufacture of vinyl chloride) for which planning had not been completed as of October 12, 2012, or for which planning had been completed, but project bid request procedures had not yet been completed as of that time.
Biological oxygen demand (BOD)	30	
Chemical oxygen demand (COD)	100	
Suspended solids	30	
True color	550	
Cobalt	1.0	Applicable to basic chemical raw material manufacturing industry, other chemical material manufacturing industry, paint, dye and pigment manufacturing industry, other chemical product manufacturing industries and battery manufacturing industry; enforced from July 1, 2014.
Barium	2.0	Applicable to basic chemical raw material manufacturing industry, artificial fiber manufacturing industry, synthetic resin, plastic, and rubber manufacturing industry, other chemical material manufacturing industry, paint, dye and pigment manufacturing industry, cleaning product manufacturing industry, cosmetics manufacturing industry, other chemical product manufacturing industries and battery manufacturing industry; enforced from July 1, 2014.
Dichloromethane	0.2	
Chloroform	0.6	
Benzene	0.05	1. Applicable to basic chemical raw material manufacturing industry, synthetic resin, plastic, and rubber
Ethylbenzene	0.4	
1,2-Dichloroethane	0.10	

Item	Limit	Remarks
Chloroethene	0.10	manufacturing industry, other chemical material manufacturing industry, paint, dye and pigment manufacturing industry, cosmetics manufacturing industry and other chemical product manufacturing industries; enforced from July 1, 2014. 2. When a 1,2-dichloroethane or chloroethene project or other improvement measure is involved***, the enterprise shall submit an effluent pollutant reduction management plan by March 31, 2014, and shall implement the content of said plan after approval by the special municipality, county, or city competent authority; enforced from July 1, 2016.
Dimethyl phthalate (DMP)	0.2	
Diethyl phthalate (DEP)	0.4	
Dibutyl phthalate (DBP)	0.4	
Benzyl butyl phthalate (BBP)	0.4	
Di-n-octyl phthalate (DNOP)	0.6	
Di(2-ethylhexyl) phthalate (DEHP)	0.2	
Nitrobenzene	0.4	
Trichloroethene	0.3	