Chapter NR 264

ELECTRICAL AND ELECTRONIC COMPONENTS

NR 264.01 Purpose.
NR 264.02 Applicability.
NR 264.03 General definitions.
NR 264.04 Alternative to monitoring for total toxic organics.
NR 264.05 Compliance dates.

Subchapter I — Semiconductor Subcategory
NR 264.10 Applicability; description of the semiconductor subcategory.
NR 264.11 Specialized definitions.
NR 264.12 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
NR 264.13 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
NR 264.14 New source performance standards.
NR 264.15 Pretreatment standards for existing sources.
NR 264.17 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology.

Subchapter II — Electronic Crystals Subcategory
NR 264.20 Applicability; description of the electronic crystals subcategory.
NR 264.21 Specialized definitions.
NR 264.22 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
NR 264.23 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
NR 264.24 New source performance standards.
NR 264.25 Pretreatment standards for existing sources.
NR 264.26 Pretreatment standards for new sources.
NR 264.27 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology.

Subchapter III — Cathode Ray Tube Subcategory
NR 264.30 Applicability; description of the cathode ray tube subcategory.
NR 264.31 Specialized definitions.
NR 264.32 New source performance standards.
NR 264.33 Pretreatment standards for existing sources.
NR 264.34 Pretreatment standards for new sources.

Subchapter IV — Luminescent Materials Subcategory
NR 264.40 Applicability; description of the luminescent materials subcategory.
NR 264.41 New source performance standards.
NR 264.42 Pretreatment standards for new sources.

NR 264.01 Purpose. The purpose of this chapter is to establish effluent limitations, performance standards, and pretreatment standards for discharges of process wastes from the electrical and electronic components category of point sources and its subcategories.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.02 Applicability. This chapter applies to any manufacturing operation which produces semiconductors, electronic crystals, cathode ray tubes, or luminescent materials and which discharges or may discharge process wastewater pollutants to waters of the state or into a publicly owned treatment works.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.03 General definitions. The following definitions are applicable to the terms used in this chapter. Definitions of other terms and abbreviations are set forth in ss. NR 205.03, 205.04 and 211.03.

(1) "Existing source" means any point source, except a new source as defined in sub. (2), from which pollutants may be discharged either into waters of the state or into a publicly owned treatment works.

(2) "New source" means any point source from which pollutants are or may be discharged directly to waters of the state or into a publicly owned treatment works and for which construction commenced after August 24, 1982, for point sources subject to the semiconductor and electronic crystals subcategory or March 9, 1983, for point sources subject to the cathode ray tube and luminescent materials subcategories.

(3) "TTO" means total toxic organics.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.04 Alternative to monitoring for total toxic organics. (1) Instead of monitoring for TTO, the certification set forth in sub. (3) may be used as a comment within the discharge monitoring report required by s. NR 205.07 (3) (d) or 211.15 (4), if the following 4 conditions are met:

(a) A direct discharger has submitted a solvent management plan to the department; a source which discharges to a POTW has submitted a solvent management plan to the control authority;

(b) The department or control authority has approved the solvent management plan;

(c) The solvent management plan has been incorporated into the discharger's permit; and

(d) The solvent management plan is being implemented to the satisfaction of the department or control authority.

(2) The solvent management plan shall specify the following:

(a) The toxic organic compounds used;

(b) A toxic organic compound disposal method other than dumping, such as reclamation, contract hauling, or incineration.

(c) The procedures used to assure that toxic organic compounds do not routinely spill or leak into the wastewater.

(3) The following certification shall be used:

"Based on my inquiry of the person or persons directly responsible for managing compliance with the permit limitation for total toxic organics (TTO), I certify that, to the best of my knowledge and belief, no dumping of concentrated toxic organics into the wastewaters has occurred since the filing of the last discharge monitoring report. I further certify that this facility is implementing the solvent management plan submitted to the department or POTW."

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.05 Compliance dates. (1) The following compliance dates apply to any source subject to this chapter which discharges to waters of the state:

(a) Any existing source shall achieve the effluent limitations representing BPT by July 1, 1977.

(b) Except as provided in par. (c), any existing source shall achieve the effluent limitations representing BAT and BCT by July 1, 1984.

(c) Existing sources subject to the semiconductor subcategory

or the electronic crystals subcategory shall achieve the BAT effluent limitation for fluoride by November 11, 1985.

(d) Any new source subject to this chapter shall achieve NSPS at the commencement of discharge.

(2) The following compliance dates apply to sources subject to this chapter which introduce process wastewater pollutants into a POTW:

(a) Any existing source subject to the semiconductor subcategory shall achieve PSES by July 1, 1984.

(b) Any existing source subject to the electronic crystals subcategory shall achieve the PSES for TTO by July 1, 1984 and for arsenic by November 8, 1985.

(c) Any existing source subject to the cathode ray tube subcategory shall achieve the PSES by July 14, 1986.

(d) Any new source shall achieve PSNS at the commencement of discharge.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

Subchapter I — Semiconductor Subcategory

NR 264.10 Applicability; description of the semiconductor subcategory. This subchapter applies to the discharge of pollutants to waters of the state and the introduction of pollutants into POTWs from all process operations, beginning with the use of crystal wafers, which lead to or are associated with the manufacture of semiconductors, except sputtering, vapor deposition, and electroplating.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.11 Specialized definitions. The following definitions apply to the terms used in this subchapter:

(1) "Semiconductor" means a solid state electrical device which performs functions such as information processing and display, power handling, and interconversion between light energy and electrical energy.

(2) "TTO" means the sum of the concentrations of each of the following toxic organic compounds which is found in the discharge at a concentration greater than 10 micrograms per liter:

1, 2, 4 trichlorobenzene	naphthalene
chloroform	2 nitrophenol
1, 2 dichlorobenzene	bis (2-ethylhexyl) phthalate
1, 3 dichlorobenzene	tetrachloroethylene
1, 4 dichlorobenzene	toluene
ethylbenzene	trichloroethylene
1, 1, 1 trichloroethane	2 chlorophenol
methylene chloride	2, 4 dichlorophenol
4 nitrophenol	1, 1 dichloroethylene
pentachlorophenol	2, 4, 6 trichlorophenol
di-n-butyl phthalate	carbon tetrachloride
anthracene	1, 2 dichloroethane
1, 2 diphenylhydrazine	1, 1, 2 trichloroethane
isophorone	dichlorobromomethane
butyl benzyl phthalate	

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.12 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available. Except as provided in 40 CFR 125.30 to 125.32, any existing point source subject to this subchapter shall achieve the following effluent limitations representing the degree of effluent reduction attainable by application of BPT:

Table 1
Semiconductor

BPT Effluent Limitations		
	Maximum for any 1 day	Average of daily values for 30 consecutive days
Pollutant or pollutant property	milligrams per liter	
TTO	1.37	
pH	(1)	(1)

(1) Within the range of 6.0 to 9.0 at all times.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.13 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable. Except as provided in 40 CFR 125.30 to 125.32, any existing point source subject to this subchapter shall achieve the following effluent limitations representing the degree of effluent reduction attainable by application of BAT:

Table 2
Semiconductor

BAT Effluent Limitations		
	Maximum for any 1 day	Average of daily values for 30 consecutive days
Pollutant or pollutant property	milligrams per liter	
TTO	1.37	
Fluoride	32.0	17.4

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.14 New source performance standards. Any new source subject to this subchapter shall achieve the following NSPS:

Table 3
Semiconductor

NSPS		
	Maximum for any 1 day	Average of daily values for 30 consecutive days
Pollutant or pollutant property	milligrams per liter	
TTO	1.37	
Fluoride	32.0	17.4
pH	(1)	(1)

(1) Within the range of 6.0 to 9.0 at all times.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.15 Pretreatment standards for existing sources. Except as provided in ss. NR 211.13 and 211.14, any existing source subject to this subchapter which introduces pollutants into a POTW shall comply with ch. NR 211 and the TTO concentration in the discharge may not exceed 1.37 milligrams per liter for any one day.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.17 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology. Except as provided in 40 CFR 125.30 to 125.32, any existing point source subject to this subchapter shall achieve a pH within the range of 6.0 to 9.0 at all times.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

Subchapter II — Electronic Crystals Subcategory

NR 264.20 Applicability; description of the electronic crystals subcategory. This subchapter applies to the discharge of pollutants to waters of the state and the introduction of pollutants into POTWs resulting from the growing of crystals or the production of crystal wafers for use in the manufacture of electronic devices.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.21 Specialized definitions. The following definitions apply to the terms used in this subchapter:

(1) "Electronic crystals" means crystals or crystalline materials, such as crystals comprised of quartz, ceramic silicon, gallium arsenide, and indium arsenide, which, because of their unique structural and electrical properties, are used in electronic devices.

(2) "TTO" means the sum of the concentrations of each of the following toxic organic compounds which is found in the discharge at a concentration greater than 10 micrograms per liter:

1, 2, 4 trichlorobenzene	2, 4 dichlorophenol
chloroform	4 nitrophenol
1, 2 dichlorobenzene	pentachlorophenol
1, 3 dichlorobenzene	di-n-butyl phthalate
1, 4 dichlorobenzene	anthracene
ethylbenzene	1, 2 diphenylhydrazine
1, 1, 1 trichloroethane	isophorone
methylene chloride	butyl benzyl phthalate
naphthalene	1, 1 dichloroethylene
2 nitrophenol	2, 4, 6 trichlorophenol
bis (2-ethylhexyl) phthalate	carbon tetrachloride
tetrachloroethylene	1, 2 dichloroethane
toluene	1,1,2 trichloroethane
trichloroethylene	dichlorobromomethane
2 chlorophenol	

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.22 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available. Except as provided in 40 CFR 125.30 to 125.32, any existing point source subject to this subchapter shall achieve the following effluent limitations representing the degree of effluent reduction attainable by application of BPT:

Table 4
Electronic Crystals

BPT Effluent Limitations		
	Maximum for any 1 day	Average of daily values for 30 consecutive days
Pollutant or pollutant property	milligrams per liter	
TTO	1.37	
Arsenic(1)	2.09	0.83
Fluoride	32.0	17.4
TSS	61.0	23.0
pH	(2)	(2)

(1) The arsenic limitation only applies to manufacturers of gallium or indium arsenide crystals.

(2) Within the range of 6.0 to 9.0 at all times.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.23 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable. Except as provided in 40 CFR 125.30 to 125.32, any existing point source subject to this subchapter shall achieve the following effluent limitations representing the degree of effluent reduction attainable by application of BAT:

Table 5
Electronic Crystals

BAT Effluent Limitations		
	Maximum for any 1 day	Average of daily values for 30 consecutive days
Pollutant or pollutant property	milligrams per liter	
TTO	1.37	
Arsenic(1)	2.09	0.83
Fluoride	32.0	17.4

(1) The arsenic limitation only applies to manufacturers of gallium or indium arsenide crystals.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.24 New source performance standards. Any new source subject to this subchapter shall achieve the standards set forth in s. NR 264.23.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.25 Pretreatment standards for existing sources. Except as provided in ss. NR 211.13 and 211.14, any existing source subject to this subchapter which introduces pollutants into a POTW shall comply with ch. NR 211 and achieve the following PSES:

Table 6
Electronic Crystals

PSES		
	Maximum for any 1 day	Average of daily values for 30 consecutive days
Pollutant or pollutant property	milligrams per liter	
TTO	1.37	
Arsenic(1)	2.09	0.83

(1) The arsenic limitation only applies to manufacturers of gallium or indium arsenide crystals.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.26 Pretreatment standards for new sources. Except as provided in s. NR 211.13, any new source subject to this subchapter which introduces pollutants into a POTW shall comply with ch. NR 211 and comply with the standards set forth in s. NR 264.25.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.27 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology. Except as provided in 40 CFR 125.30 to 125.32, any existing point source subject to this subchapter shall achieve the following effluent limitations representing the degree of effluent reduction attainable by application of BCT:

Table 7
Electronic Crystals

BCT Effluent Limitations		
	Maximum for any 1 day	Average of daily values for 30 consecutive days
Pollutant or pollutant property	milligrams per liter	
TSS	61.0	23.0
pH	(1)	(1)

(1) Within the range of 6.0 to 9.0 at all times.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

Subchapter III — Cathode Ray Tube Subcategory

NR 264.30 Applicability; description of the cathode ray tube subcategory. This subchapter applies to the discharge of pollutants to waters of the state and the introduction of pollutants into POTWs from the manufacture of cathode ray tubes. This subchapter does not apply to the manufacture of receiving or transmitting tubes.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.31 Specialized definitions. The following definitions apply to the terms used in this subchapter:

(1) "Cathode ray tube" means an electronic device in which electrons focus through a vacuum to generate a controlled image on a luminescent surface.

(2) "TTO" means the sum of the concentrations of each of the following toxic organic compounds which is found in the discharge at a concentration greater than 10 micrograms per liter.

1, 1, 1 chloroform
trichloroethane
methylene chloride
bis (2-ethylhexyl) phthalate
toluene
trichloroethylene

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.32 New source performance standards. Any new source subject to this subchapter shall achieve the following NSPS:

Table 8
Cathode Ray Tube

NSPS		
	Maximum for any 1 day	Average of daily values for 30 consecutive days
Pollutant or pollutant property	milligrams per liter	
pH	(1)	(1)
TTO	1.58	
Cadmium	0.06	0.03
Chromium	0.56	0.26
Lead	0.72	0.27
Zinc	0.80	0.33
Fluoride	35.0	18.0
TSS	46.0	24.0

(1) Within the range of 6.0 to 9.0 at all times.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.33 Pretreatment standards for existing sources. Except as provided in ss. NR 211.13 and 211.14, any existing source subject to this subchapter which introduces pollutants into a POTW shall comply with ch. NR 211 and achieve the following PSES:

Table 9
Cathode Ray Tube

PSES		
	Maximum for any 1 day	Average of daily values for 30 consecutive days
Pollutant or pollutant property	milligrams per liter	
TTO	1.58	
Cadmium	0.06	0.03
Chromium	0.65	0.30
Lead	1.12	0.41
Zinc	1.38	0.56
Fluoride	35.0	18.0

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.34 Pretreatment standards for new sources. Except as provided in s. NR 211.13, any new source subject to this subchapter which introduces pollutants into a POTW shall comply with ch. NR 211 and achieve the following PSNS:

Table 10
Cathode Ray Tube

	PSNS	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
Pollutant or pollutant property	milligrams per liter	
TTO	1.58	
Cadmium	0.06	0.03
Chromium	0.56	0.26
Lead	0.72	0.27
Zinc	0.80	0.33
Fluoride	35.0	18.0

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

Subchapter IV — Luminescent Materials Subcategory

NR 264.40 Applicability; description of the luminescent materials subcategory. This subchapter applies to the discharge of pollutants to waters of the state and the introduction of pollutants into POTWs resulting from the manufacture of materials, such as calcium halophosphate, yttrium oxide, zinc sulfide, and zinc-cadmium sulfide, which emit light upon excitation by energy sources such as photons, electrons, applied voltage, chemical reactions, or mechanical energy, and which are specifically used as coatings in fluorescent lamps and cathode ray tubes.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.41 New source performance standards. Any new source subject to this subchapter shall achieve the following NSPS:

Table 11
Luminescent Materials

	NSPS	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
Pollutant or pollutant property	milligrams per liter	
pH	(1)	(1)
Cadmium	0.55	0.26
Antimony	0.10	0.04
Zinc	1.64	0.67
Fluoride	35.0	18.0
TSS	60.0	31.0

(1) Within the range of 6.0 to 9.0 at all times.

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

NR 264.42 Pretreatment standards for new sources. Except as provided in s. NR 211.13, any new source subject to this subchapter which introduces pollutants into a POTW shall comply with ch. NR 211 and achieve the following PSNS:

Table 12
Luminescent Materials

	PSNS	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
Pollutant or pollutant property	milligrams per liter	
Cadmium	0.55	0.26
Antimony	0.10	0.04
Zinc	1.64	0.67
Fluoride	35.0	18.0

History: Cr. Register, May, 1990, No. 413, eff. 6-1-90.

Note: The Wisconsin administrative code corresponds to the code of federal regulations as cross referenced in the following table:

State Code	Corresponding Federal Regulation
s. NR 205.03	40 CFR 401.11
s. NR 205.04	40 CFR 401.11
s. NR 205.07 (3) (d)	40 CFR 122.44 (i)
ch. NR 211	40 CFR Part 403
s. NR 211.03	40 CFR 403.3
s. NR 211.13	40 CFR 403.7
s. NR 211.14	40 CFR 403.13
s. NR 211.15 (4)	40 CFR 403.12 (e)
ch. NR 264	40 CFR Part 469