

## Chapter NR 276

### PHOSPHATE MANUFACTURING

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**NR 276.01 Purpose.** The purpose of this chapter is to establish effluent limitations, standards of performance, and pretreatment standards for discharges of process wastes from the phosphate manufacturing category of point sources and subcategories thereof.

**Note:** The authority for promulgation of this chapter is set forth in ch. NR 205.  
**History:** Cr. Register, June 1976, No. 246, eff. 7-1-76.

**NR 276.02 Applicability.** The effluent limitations, standards of performance, pretreatment standards, and other provisions in this chapter are applicable to pollutants or pollutant properties in discharges of process waste resulting from manufacturing in any of the following subcategories.

- c1d** Phosphorus production,
- c2d** Phosphorus consuming,
- c3d** Phosphate,
- c4d** Defluorinated phosphate rock,
- c5d** Defluorinated phosphoric acid, and
- c6d** Sodium phosphates.

**History:** Cr. Register, June, 1976, No. 246, eff. 7-1-76.

**NR 276.03 Definitions.** The following definitions are applicable to terms used in this chapter. Definitions of other terms and meanings of abbreviations are set forth in ch. NR 205.

**c1d** XPhosphorus productionY means the manufacture of phosphorus and ferrophosphorus by smelting phosphate ore.

**c2d** XPhosphorus consumingY means the manufacture from elemental phosphorus of phosphoric acid and phosphorus pentoxide, pentasulfide, trichloride, and oxychloride.

**c3d** XPhosphateY means the manufacture from phosphoric acid of sodium tripolyphosphate, animal feed grade calcium phosphate, and human food grade calcium phosphate.

**c4d** XDefluorinated phosphate rockY means the production of phosphate rock defluorinated by the use of high temperature, wet process phosphoric acid, silica, and other reagents.

**c5d** XDefluorinated phosphoric acidY means wet process phosphoric acid defluorinated by application of heat and other processing aids such as vacuum and air stripping and concentrated to 70-73% P<sub>2</sub>O<sub>5</sub>.

**c6d** XSodium phosphatesY means the manufacture of sodium phosphates from wet process phosphoric acid.

**c7d** XWithin the impoundmentY means;

cad For impoundments constructed prior to January 27, 1975, within the water surface area at maximum capacity plus that portion, not to exceed 30% of such water surface area, of the surface area of the inside and outside slopes of the impoundment dam and extending to any immediately adjacent seepage ditch from which rain water is returned to the impoundment, and

cbd For new impoundments the water surface area at maximum capacity.

**c8d** XPond water surface areaY means the water area at the average operating level for the month but not less than one third of the water area at maximum capacity.

**History:** Cr. Register, June, 1976, No. 246, eff. 7-1-76.

**NR 276.04 Compliance with effluent limitations and standards.** Discharge of pollutants from facilities subject to the provisions of this chapter may not exceed, as appropriate:

**c1d** By July 1, 1977 effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available;

**c2d** By July 1, 1983 effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable;

**c3d** Pretreatment standards for discharges to publicly owned treatment works;

**c4d** Standards of performance for new sources.

**History:** Cr. Register, June, 1976, No. 246, eff. 7-1-76; r. and recr. Register, August, 1983, No. 332, eff. 9-1-83.

**NR 276.06 Application of effluent limitations and standards.** **c1d** The effluent limitations and standards set forth in this chapter shall be used in accordance with this section to establish the quantity or quality of pollutants or pollutant properties which may be discharged by a point source subject to the provisions of this chapter, except as:

cad They may be modified in accordance with subch. IV of ch. NR 220,

cbd They may be superseded by more stringent limitations and standards necessary to achieve water quality standards or meet other legal requirements, or

ccd They may be supplemented or superseded by standards or prohibitions for toxic pollutants or by additional limitations for other pollutants required to achieve water quality.

**c2d** The production basis for application of the limitations and standards set forth in this chapter shall be the daily average of a maximum month in each subcategory subject to the provisions of this chapter.

**History:** Cr. Register, June, 1976, No. 246, eff. 7-1-76; correction in c1d cad made under s. 13.92 c4d cbd 7, Stats., Register April 2018 No. 748.

**NR 276.07 Discharges from impoundments.** **c1d** A process wastewater impoundment which is designed, constructed and operated so as to contain the precipitation from the 10 year, 24 hour rainfall event for the area in which such impoundment is located may discharge that volume of process wastewater which is equivalent to the volume of precipitation that falls within the impoundment in excess of that attributable to such rainfall event when it occurs.

**c2d** A process wastewater impoundment which is designed, constructed and operated so as to contain the precipitation from

the 25 year, 24 hour rainfall event for the area in which such impoundment is located may discharge that volume of process wastewater which is equivalent to the volume of precipitation that falls within the impoundment in excess of that attributable to such rainfall event when it occurs.

**c3d** During any calendar month, there may be discharged from a process wastewater impoundment a volume of process wastewater equal to the difference between the precipitation for that month which falls within the impoundment and the evaporation from the pond water surface area for that month. Such discharges shall have a pH within the range of 6.0-9.0, daily average concentrations not to exceed 35, 10, and 25 mg/l respectively of total phosphorus, fluoride, and suspended solids, and daily maximum concentrations not to exceed 70, 30, and 50 mg/l respectively.

**c4d** The 10 year and 25 year, 24 hour rainfall events for the impoundment location shall be as set forth in s. NR 205.05.

**History:** Cr. Register, June, 1976, No. 246, eff. 7-1-76.

**NR 276.10 Effluent limitations, best practicable treatment.** The following effluent limitations for all or specific

subcategories establish, except as provided in s. NR 276.06 and subch. IV of ch. NR 220, the quantity or quality of pollutants or pollutant properties which may be discharged to surface waters by a facility subject to the provisions of this chapter after application to process wastes of the best practicable control technology currently available.

**c1d** There shall be no discharge resulting from the manufacture of sodium tripolyphosphate or animal feed grade calcium phosphate in the phosphate subcategory.

**c2d** There shall be no discharge resulting from manufacture in subcategories c4d and c5d except in accordance with s. NR 276.07 c1d and c3d.

**c3d** The pH of all discharges shall be within the range of 6.0 to 9.0.

**c4d** For discharges from subcategories c1d, c2d and c6d and human food grade calcium phosphate in subcategory c3d, the 30-day average limitations for suspended solids and other parameters are set forth in table 1 in lbs{ 1000 lbs. or kg{ 1000 kg, of product. Daily maximum limitations are twice the 30-day average limitations, except for elemental phosphorus.

TABLE 1  
BPT EFFLUENT LIMITATIONS

Subcategory*	Susp. Solids	Total Phosphorus	Fluoride	Arsenic	Elemental Phosphorus
c1d	0.5	0.15	0.05		No detectable quantity
c2d	0.7	0.8		.00005	No detectable quantity
c3d**	0.06	0.03			
c6d	0.25	0.40	0.15		

\*As identified in s. NR 276.02

\*\*Human food grade calcium phosphate only.

**History:** Cr. Register, June, 1976, No. 246, eff. 7-1-76; correction in cintro.d made under s. 13.92 c4d cbd 7, Stats., Register April 2018 No. 748.

**NR 276.11 Effluent limitations, best available treatment.** The following effluent limitations for all or specific subcategories establish except as provided in s. NR 276.06 the quantity or quality of pollutants or pollutant properties which may be discharged to surface waters by a facility subject to the provisions of this chapter after application to process wastes of the best available technology economically achievable.

**c1d** There shall be no discharge of wastes from facilities in subcategories c1d, c2d, and c3d.

**c2d** There shall be no discharge of waste from facilities in subcategories c4d and c5d except in accordance with s. NR 276.07 c2d and c3d.

**c3d** For discharges from facilities in subcategory c6d the pH shall be within the range of 6.0-9.0 and the quantities of suspended solids, total phosphorus, and fluoride shall not exceed daily averages of respectively 0.18, 0.28, and 0.11 lbs{ 1000 lbs or

kg{ 1000 kg of product nor corresponding daily maxima of 0.35, 0.56, and 0.21.

**History:** Cr. Register, June, 1976, No. 246, eff. 7-1-76.

**NR 276.12 Standards of performance.** The following effluent limitations for specific subcategories establish except as provided in s. NR 276.06 the quantity or quality of pollutants or pollutant properties which may be discharged to surface waters by a facility which is a new source subject to the provisions of this chapter.

**c1d** There shall be no discharge of wastes from facilities in subcategories c1d, c2d, and c3d.

**History:** Cr. Register, June, 1976, No. 246, eff. 7-1-76.

**NR 276.13 Pretreatment standards.** The pretreatment standards for discharges to publicly owned treatment works from sources subject to the provisions of this chapter shall be as set forth in ch. NR 211.

**History:** Cr. Register, June, 1976, No. 246, eff. 7-1-76; r. and recr. July, 1977, No. 259, eff. 8-1-77; r. and recr. Register, August, 1983, No. 332, eff. 9-1-83.