

Chapter NR 260

**INTERIM EFFLUENT LIMITATIONS FOR THE
METAL FINISHING, ELECTROPLATING
WISCONSIN POLLUTANT DISCHARGE
ELIMINATION SYSTEM**

NR 260.01	Purpose	NR 260.05	Description of abate- ment models
NR 260.02	Applicability	NR 260.06	Table of interim effluent limitations
NR 260.03	Other limitations		
NR 260.04	Application of interim limitations		

Note: Pursuant to Chapter 74, Laws of 1973, in sections 147.04 (3) and (5) and under the procedure of section 227.027, Wis. Stats. the department of natural resources has promulgated interim effluent limitations which become effective February 1, 1974 and will remain in effect for a period of one year. These interim effluent limitations will be periodically replaced by permanent effluent limitations.

NR 260.01 Purpose. The purpose of this chapter is to establish interim effluent limitations for discharges from industrial point sources identified herein as authorized by section 147.04 (5), Wis. Stats.

History: Emerg. cr. eff. 2-1-74.

NR 260.02 Applicability. The interim limitations apply to Standard Industrial Classification Codes 3471 and 3479.

History: Emerg. cr. eff. 2-1-74.

NR 260.03 Other limitations. Other interim effluent limitations in accordance with chapter NR 217, Wis. Adm. Code, are applicable to discharges from facilities which belong in the classifications of this section but are excluded from or not specifically included in, its provisions.

History: Emerg. cr. eff. 2-1-74.

NR 260.04 Application of interim limitations. (1) The interim limitations are for facilities having discharges greater than 20,000 gallons per day for the categories covered.

(2) The metals involved in the effluents discharged by this industry are in ionic form in solution, or as part of a compound in suspension. Limits for each parameter are given on the basis of concentration. It may not be economically practicable for small companies (9 employees or fewer), because of their size, to meet interim limitation levels.

History: Emerg. cr. eff. 2-1-74.

NR 260.05 Description of abatement models. (1) The following paragraphs describe in general terms the type of treatment facilities considered to be best practicable treatment technology for the purpose of establishing the interim effluent limitations of this chapter. This description is included to illustrate the type of treatment required. Other treatment technology may be acceptable.

Register, March, 1974, No. 219
Environmental Protection

(2) The basic treatment model is that of unit process stream precipitation. For essentially all of the parameters, best practicable control technology currently available involves precipitation which includes coagulation, sedimentation, flotation, and filtration. Evaporative recovery and ion exchange should be considered. Chemical oxidation for cyanides and chemical reduction for chromium are, where necessary, part of the treatment process. Such heavy metals as copper, zinc, iron, manganese, nickel, chromium +3, and conceivably cobalt, can be readily and inexpensively precipitated as the hydroxides by lime treatment. Cadmium is most effectively precipitated as the sulfide; lead as the carbonate.

(3) Most of the hydroxides are precipitated at pH 9. Zinc hydroxide, being amphoteric, manifests its minimum solubility in the pH range of 8-9. Aluminum hydroxide, being amphoteric, manifests its minimum solubility over the pH range of 5-6. Depending on the kinds of heavy metal ions present in the effluent, it is possible to remove them either concurrently or in stages by precipitation techniques. The necessity for pH control and desirability of segregation of streams is determined by the particular combination of heavy metal ions involved.

(4) The discharge limits should apply equally as well to effluents containing one or more metals; however, in treating effluents containing a mixture of metals, compliance with the effluent limitation must be evaluated on a case-by-case basis.

History: Emerg. cr. eff. 2-1-74.

NR 260.06 Table of interim effluent limitations.

Effluent Parameter	Concentration mg/l ^{1 2}	lbs/1000 gal
TSS.....	10	0.0834
Cyanide Dest. by Cl ₂	0.03	0.00025
Fluoride.....	18	0.150
Aluminum.....	0.2	0.00167
Barium.....	1.0	0.00834
Cadmium.....	0.1	0.000834
Chromium CR ⁺ ⁶	0.05	0.000417
CR ⁺	0.25	0.00209
Copper.....	0.2	0.00167
Iron.....	0.5	0.00417
Lead.....	0.05	0.000417
Manganese.....	1.0	0.00834
Nickel.....	1.0	0.00834
Silver.....	0.05	0.000417
Zinc.....	0.5	0.00417
pH (Ave. Daily Discharge).....	6-9	

NOTES:

¹Metal concentrations are based on analysis of filtered clear solutions.

²The maximum permissible concentration for a particular metal in the total suspended solids shall be equivalent to 1 mg/l, (0.00834 lbs/1000 gal).

History: Emerg. cr. eff. 2-1-74.