

Woodhill Plating Company Calculation of Projected Airborne Emissions Page 1 of 1
 9114 Reno Avenue Automatic Nickel/Chrome Rack Plating Line
 Cleveland, OH 44105
 Facility ID# 13-18-00-1881 February 19, 2009
 as of February 20, 2009

1.0 NICKEL EMISSIONS:

1.1 Basis of Calculations:

	Volume	Surface Dimensions	Maximum Operating Amps	Rectifier Operating Hours
1.1.1 Tanks:				
NiD-1	1300 g	3' x 16' (48 ft ²)	1500	1528
NiD-2	3400 g	3' x 24' (72 ft ²)	3000	792

1.1.2 Emission Factor: 6.5×10^{-6} lbs Ni/hr-ft² (See Table 1, Attachment 1)

1.2 Calculations: Nickel Emissions in Pounds/Day:
 (Reference 1 - "NAMF - Emission Factors for Toxic Air Contaminants of Concern to the Metal Finishing Industry, April, 1999 - TABLE 1") (See Attachment 1)

1.2.1 NiD-1 Nickel w/Air Agitation:
 • 6.5×10^{-6} lbs Ni/hr-ft² x 8760 hrs/yr x 48 ft² = 2,733,120 x 10⁻⁶ lbs/yr = 2.78 lbs Ni/Year
 • 2.78 lbs Ni/Year/365 days/year = 7.5×10^{-3} lbs Ni/Day

1.2.2 NiD-2 Nickel w/Air Agitation:
 • 6.5×10^{-6} lbs Ni/hr-ft² x 8760 hrs/yr x 72 ft² = 4,099,680 x 10⁻⁶ lbs/yr = 4.10 lbs Ni/Year
 • 4.10 lbs Ni/Year/365 days/year = 11.0×10^{-3} lbs Ni/Day

TOTAL Ni Emissions = 18.5×10^{-3} lbs/day

2.0 CHROMIUM EMISSIONS:

2.1 Basis of Calculation:

- 2.1.1 Cr-1 Chromium Plating
 • Use maximum Operating Amps @ 3000 amps
 • Use maximum operating time @ 8760 hours
- 2.1.2 5.20 mg Cr/A-H

1.3 Calculations: Chromium Emissions in Pounds/Day:
 (Reference 1 - "NAMF - Emission Factors for Toxic Air Contaminants of Concern to the Metal Finishing Industry, April, 1999 - TABLE 1") (See Attachment 1)

1.3.1 Cr-1 Chromium Plating
 • 5.2 mg Cr/A-H x 3000 amps x 8760 hrs/year = 136,656,000 mg Cr/year
 • 136,656,000 mg Cr/year x 1 lb/454,000 mg = 301 lbs Cr/year
 • 301 lbs Cr/year x 1 year/365 days = **0.82 lbs Cr/day**

TOTAL Cr Emissions = 0.82 lbs Cr/day

3.0 CONCLUSIONS:

3.1 TOTAL Nickel and Chromium Emissions from this Emission Unit
 0.0185 lbs/day Ni + 0.82 lbs Cr/day = **0.84 lbs air contaminants/day**

3.2 REGULATORY EVALUATION;
 [Reference; OAC 3745-15-05 (B), (C)(4) and (C)(5)](See Attachment 2)

For the reasons enumerated above and pursuant to Sections (B), (C)(4) and (C)(5) of OAC 3745-15-05, it is the opinion of this writer that this subject emission unit is exempt from obtaining an OEPA PTIO.

TABLE 1