M02-M06 - METAL DEPOSITION, PLASMA SPRAY, WATER CURTAIN, DEFAULT FACTORS

CALCULATION METHODS

Annual Emissions: Ea = Ua x EF (lbs/lb sprayed) x Ci
Hourly Emissions: Eh = Uh x EF (lbs/lb sprayed) x Ci

Ea = Annual emissions of each listed toxic air contaminant per material, (lbs/year)
Eh = Maximum hourly emissions of each listed toxic air contaminant per material, (lbs/hour)
Ua = Annual usage of each material sprayed, (lbs/year)
Uh = Maximum hourly usage of each maerial sprayed, (lbs/hour)
EF = Emission Factor (lbs/lb sprayed)
Ci = Toxic air contaminant specific concentration (weight percent)

NOTES:

- PM10 Emission Factors developed from averaged sum of Ni & Cr Source Test Results:
  - •Flame Spray Inc: 1997 Source Test Material Praxair AI-1015 (PWA 1315F) compostion: Cr 20% and Ni 80% = 100%.
  - •Chemtronics: 1994 Source Test Material Metco 43FNS compostion: Cr 20% and Ni 80% = 100%.
- All emissions for this calculation procedure are assumed to be Ducted.
- Annual (Ua) and maximum hourly (Uh) throughputs must be individually reported for each material sprayed.
- Site and material specific emission factors should be used where available.
- Combustion related emissions of NOx, CO, SOx, PIC's, etc. are assumed to be negligible as no emissions information currently exists.
- For Emissions Inventory:
  - •Trace metal composition is assumed to be equivalent to the PM10 fraction.
  - •Base factors on actual Source Test (ST) data if available.
  - •Method for estimating annual and max hourly emissions will use Emission Factor PM10 EF (Lb / Lb overall sprayed).
  - •Calculation will prioritize Lb/Lb over weight percent EF reported, if both values are reported.
  - •If Total Chromium EF is reported (Lb/Lb or weight percent), then Cr6+ and non Hex Cr EF will be calcualted using ratios described below.

POLLUTANT	DISTRICT EMISSION FACTORS (lbs emitted / lb Overall sprayed)	EMISSION FACTORS (lbs individual metal released / lb individual metal sprayed)	REFERENCE DOCUMENT	TEST LOCATION	(UNITS)	COMMENTS
NOX						
CO						
SOX						
TOG						
VOC						
TSP	1.71E-02	3.05E-02		Ave. of Flame Spray Inc. & Chemtronics	lbs/lb material sprayed	Assume PM10 = TSP. Base this estimate on overall usage (lbs of material).
PM10	1.71E-02	3.05E-02		Ave. of Flame Spray Inc. & Chemtronics	lbs/lb material sprayed	Base this estimate on overall usage (lbs of material).
Total Chromium	Use Material Specific SDS					
Chromium Hexavalent	Use Material Specific SDS					Hexavalent chromium conversion rates (HCR) based on Flame Spray Inc 1997 Source Test = Cr6+/Total Cr = 5.34E-05/1.34E-04 ≈ 40%. EF lbs emitted / lb metal in = lb Hex. Cr emitted/lb Total Cr sprayed. Ci = Total Cr Ci x HCR.

Chromium NonHexavalent	Use Material Specific SDS					NonHexavalent chromium conversion rates based on Flame Spray Inc 1997 Source Test = 1-HCR = 1-(5.34E-05/1.34E-04) ≈ 60%. Ci = Total Cr Ci x (100% - HCR).
Nickel	Use Material Specific SDS					
*** Other Listed Metals**	Use Material Specific SDS					Assume other metals released at a rate equal TSP/PM10 EF.

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