X71 - COPPER SULFATE ELECTROPLATING, WET SCRUBBER CONTROLLED

CALCULATION METHODS

Ea = Ua x EF

Eh = Uh x EF

NOTES:

- Ua = Annual electrical usage, ampere-hour/year

- Uh = Maximum hourly electrical usage, ampere-hour/ hour

- Assume 75% control efficency for wet scrubber. See ARB Tech. Support Doc. to Proposed ATCM for Emissions of Cr+6 from Chrome Plating & Chromic Acid Anodizing Operations (Jan. 1988), Table III-2 and

ARB Tech. Guidance Doc. to the Criteria & Guidelines Reg. for AB2588 (Aug. 1989), page 44.

- Assume TSP = PM-10.

- Ci = Weight percent of other listed substance in solution, %.

- C Cu = Weight percent of copper in solution, %.

- "OTHER" pollutants and their corresponding emission factors are to be manually entered.

- Assume 100% capture efficiency.

POLLUTANT	Emission Factor	REFERENCE	ARB	(UNITS)	COMMENTS
	(lbs/amp-hr)	DOCUMENT	FACTOR		
NOX					
CO					
SOX					
TOG					
ROG					
TSP	3.64E-07	Default TSP/PM-10 EF = Cu + SO4 * 5H2O EF's = 3.64E-7 lbs/amp-hr.			
PM10	3.64E-07	Assume that TSP and PM-10 are based on average weight percent of copper in solution.			
COPPER	2.90E-07	AP-42 (July 1996), Table 12.20-4 = 8.1E-5 grains Cu/dscf -> 8.1E-3 grains Cu/amp-hr.			
OTHER	2.90E-7 x Ci/C Cu				

MW of CuSO4 * 5H2O = 249.5

MW of Cu = 63.5

EF for SO4 * 5H2O = (2.90E-7)(63.5/249.5) = 7.38E-8

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