

**X72 - COPPER SULFATE ELECTROPLATING, CHEMICAL FUME SUPPRESSANT CONTROLLED**

**CALCULATION METHODS**

$E_a = U_a \times EF$

$E_h = U_h \times EF$

**NOTES:**

-  $U_a$  = Annual electrical usage, ampere-hour/year

-  $U_h$  = Maximum hourly electrical usage, ampere-hour/ hour

- Assume 95% control efficiency for anti-mist additives (i.e. foam, fume suppressant). 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.

-  $C_i$  = 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	7.28E-08	Default TSP/PM-10 EF = Cu + SO4 * 5H2O EF's = 7.28E-8 lbs/amp-hr.			
PM10	7.28E-08	Assume that TSP and PM-10 are based on average weight percent of copper in solution.			
COPPER	5.80E-08	AP-42 (July 1996), Table 12.20-4 = 8.1E-5 grains Cu/dscf -> 8.1E-3 grains Cu/amp-hr.			
OTHER	5.80E-8 x Ci/C Cu				

MW of CuSO4 \* 5H2O = 249.5

MW of Cu = 63.5

EF for SO4 \* 5H2O = (5.80E-8)(63.5/249.5) = 1.48E-8