

X70 - COPPER SULFATE ELECTROPLATING, UNCONTROLLED

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 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.

POLLUTANT	Emission Factor	REFERENCE	ARB	(UNITS)	COMMENTS
	(lbs/amp-hr)	DOCUMENT	FACTOR		
NOX					
CO					
SOX					
TOG					
ROG					
TSP	1.46E-06	Default TSP/PM-10 EF = Cu + SO4 * 5H2O EF's = 1.46E-6 lbs/amp-hr.			
PM10	1.46E-06	Assume that TSP and PM-10 are based on average weight percent of copper in solution.			
ALUMINUM					
ARSENIC					
BARIUM					
BERYLLIUM					
CADMIUM					
CHLORINE					
COPPER	1.16E-06	AP-42 (July 1996), Table 12.20-4 = 8.1E-5 grains Cu/dscf -> 8.1E-3 grains Cu/amp-hr.			
OTHER	1.16E-6 x Ci/Cu				
MW of CuSO4 * 5H2O = 249.5					
MW of Cu = 63.5					
EF for SO4 * 5H2O = (1.16E-6)(63.5/249.5) = 2.95E-7					