

Jessup Plater #05081

VOC Calculation
No VOC Content

HAP Calculations
The new plating process contains no HAP materials.

AP-42 CALCULATIONS FOR PM

CONTROLLED EMISSIONS (AP-42 CHAPTER 12.20)

$E_{fm} = (\text{Emission Factor for metal m in gr/dscf}) \times 0.028 \times E_{for} \times C_m$

Where:

E_{for} = Emission factor for controlled hard chromium electroplating emissions

= 2.10E-05

$E_{for} \text{ (PM)} = \text{Emission factor for controlled hard chromium electroplating emissions}$

= 4.40E-06

C_m = Bath concentration of Metal M

= 2 oz/gal

E_{fm} (Emission factor for Zinc) = $0.028 \times E_{for} \times C_m = 1.18E-06$

E_{fm} (Emission factor for Particulate Matter) = $0.028 \times E_{for} \text{ (PM)} \times C_m = 2.46E-06$

Emissions are calculated using these emission factors and formula:

$\text{Emissions} = E_{fm} \text{ (gr/dscf)} \times \text{flow rate (cfm)} \times \text{operating time (min/yr)} / 7000 \text{ gr/lb}$

Where:

Scrubber #1 Flow rate 76255 cfm

Operating Time 8760 hours/year $\times 60 \text{ minutes/hour} = 525,600 \text{ min/year}$

PM Emissions (Controlled) = $2.46E-06 \text{ (gr/dscf)} \times 51460 \text{ (cfm)} \times 525,600 \text{ (min/yr)} / 7,000 \text{ (gr/lb)} =$

Zinc Emissions (Controlled) = $1.18E-06 \times 51,460 \text{ (cfm)} \times 525,600 \text{ (min/yr)} / 7000 \text{ (gr/lb)}$

Where:

Scrubber #2 Flow rate 37900 cfm

Operating Time 525,600 min/year

PM Emissions (Controlled) = $2.46E-06 \text{ (gr/dscf)} \times 37,900 \text{ (cfm)} \times 525,600 \text{ (min/yr)} / 7,000 \text{ (gr/lb)} =$

Zinc Emission. (Controlled) Zinc = $1.18E-06 \text{ (gr/dscf)} \times 37900 \text{ (cfm)} \times 525,600 \text{ (min/yr)} / 7,000 \text{ (gr/lb)} =$

*** Assume Zinc Emissions are PM emissions and are less than 10 microns in size

Zinc Emissions + PM Emissions = Total PM Emissions (assuming particle size is less than 10 microns for Zinc)

Total PM Emissions = 0.00746 lbs/hr = 6.54E+01 lbs/year 3.27E-02 tons/year

Total PM plater Emissions = 3.27E-02 tons/year

Scrubber #1	14.09 lbs/year	1.61E-03 lbs/hr.
	6.76 lbs/year	3.38E-03 lbs/hr.
	20.84 lbs/year	4.99E-03 lbs/hr.
Scrubber #2	7.00 lbs/year	7.99E-04 lbs/hr.
	3.36 lbs/year	1.68E-03
	10.36 lbs/year	2.48E-03 lbs/hr.