

Calculating Weighted Average %VOC and Density

The MAERS A-101 form requires that you enter a weighted VOC % and density if you use several different coatings covered under the same source classification code (SCC). Use this worksheet to determine the weighted average VOC % and density of two or more coatings used at an emission unit covered under the same SCC on the A-101 form.

Complete the following fields for all components of the coating mixture.

Name of Coating	Coating Throughput (gal/yr)	VOC (% by wt)	Density (lbs/gal)
Coating 1:			
Coating 2:			
Coating 3:			
Coating 4:			
Coating 5:			
Total Throughput (lbs/gal):			

Weighted Average VOC % by wt =

$$\left| \frac{\text{Coating 1 throughput}}{\text{Total throughput}} \times \%VOC \right| + \left| \frac{\text{Coating 2 throughput}}{\text{Total throughput}} \times \%VOC \right| + \left| \frac{\text{Coating 3 throughput}}{\text{Total throughput}} \times \%VOC \right| \dots$$

Weighted Average Density =

$$\left| \frac{\text{Coating 1 throughput}}{\text{Total throughput}} \times \text{Density} \right| + \left| \frac{\text{Coating 2 throughput}}{\text{Total throughput}} \times \text{Density} \right| + \left| \frac{\text{Coating 3 throughput}}{\text{Total throughput}} \times \text{Density} \right| \dots$$

EXAMPLE

Calculating Weighted Average %VOC

The MAERS A-101 form requires that you enter a weighted VOC % and density if you use several different coatings covered under the same source classification code (SCC). Use this worksheet to determine the weighted average VOC % and density of two or more coatings used at an emission unit covered under the same SCC on the A-101 form.

Complete the following fields for all components of the coating mixture.

Name of Coating	Coating Throughput (gal/yr)	VOC (% by wt)	Density (lbs/gal)
Coating 1: Gray Z-235-Z	500	60	8.1
Coating 2: Green B-1234-AB	230	53	7.8
Coating 3: Red A-1256-KP	90	99	7.5
Coating 4:			
Coating 5:			
Total Throughput (lbs/gal):	820		

Weighted Average VOC % by wt =

$$\left| \frac{\text{Coating 1 throughput}}{\text{Total throughput}} \times \%VOC \right| + \left| \frac{\text{Coating 2 throughput}}{\text{Total throughput}} \times \%VOC \right| + \left| \frac{\text{Coating 3 throughput}}{\text{Total throughput}} \times \%VOC \right| \dots$$

$$[(500/820) \times (60)] + [(230/820) \times (53)] + [(90/820) \times (99)]$$

$$36.59 + 14.87 + 10.87 = 62.33$$

62.33% VOC is the weighted average. Enter "62.33" in the VOC content field on the A-101 form

Weighted Average Density =

$$\left| \frac{\text{Coating 1 throughput}}{\text{Total throughput}} \times \text{Density} \right| + \left| \frac{\text{Coating 2 throughput}}{\text{Total throughput}} \times \text{Density} \right| + \left| \frac{\text{Coating 3 throughput}}{\text{Total throughput}} \times \text{Density} \right| \dots$$

$$[(500/820) \times (8.1)] + [(230/820) \times (7.8)] + [(90/820) \times (7.5)]$$

$$4.93 + 2.19 + 0.82 = 7.94$$

7.94 lbs/gal is the weighted average density. Enter "7.94" in the density field on the A-101 form