How to Calculate the Percent VOC and Density of a Multi-Part Coating

The MAERS A-101 form requires that you enter a VOC% and density for the coating used “as applied.” Use this worksheet to determine the VOC% and density of a coating “as applied” when the component is made up of two or more components (e.g. reducer and/or a catalyst are being added to a paint to create the coating to be applied).

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

<table>
<thead>
<tr>
<th>Name of Component in Coating</th>
<th>VOC (% by wt)</th>
<th>Density (lbs/gal)</th>
<th>Mix Ratio*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Paint:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name of Reducer:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name of Catalyst (if applicable):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (if applicable):</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Mix ratio = the percentage of the paint, reducer, and/or catalyst in one gallon of coating. The sum of all components should equal 100.

VOC % by wt of Multi-Part Coating=

\[
\frac{\text{VOC\% by wt} \times \text{(Mix Ratio)}}{100} + \frac{\text{VOC\% by wt} \times \text{(Mix Ratio)}}{100} + \frac{\text{VOC\% by wt} \times \text{(Mix Ratio)}}{100}
\]

Density of Multi-Part Coating=

\[
\frac{(\text{Density}) \times \text{(Mix Ratio/100)}}{100} + \frac{(\text{Density}) \times \text{(Mix Ratio/100)}}{100} + \frac{(\text{Density}) \times \text{(Mix Ratio/100)}}{100}
\]
EXAMPLE
How to Calculate the VOC% by Weight and Density of a Multi-Part Coating

Use this fact sheet to help you determine the VOC content of a coating “as applied” when a reducer and/or a catalyst are being added to a paint to create the coating to be applied.

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

<table>
<thead>
<tr>
<th>Name of Component in Coating (Paint/Catalyst/Reducer)</th>
<th>VOC (% by wt)</th>
<th>Density (lbs/gal)</th>
<th>Mix Ratio*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Paint:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SuperCoat 2000</td>
<td>62</td>
<td>10.5</td>
<td>60</td>
</tr>
<tr>
<td>Name of Reducer:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R1234Q</td>
<td>100</td>
<td>7.5</td>
<td>30</td>
</tr>
<tr>
<td>Name of Catalyst (if applicable):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G-1234Z5</td>
<td>49</td>
<td>6.75</td>
<td>10</td>
</tr>
<tr>
<td>Other (if applicable):</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Mix ratio = the percentage of the paint, reducer, and/or catalyst in one gallon of coating. The sum of all components should equal 100.

VOC % by wt of Multi-Part Coating=

\[
\left(\frac{\text{VOC} \times \text{Mix Ratio}}{100}\right) + \left(\frac{\text{VOC} \times \text{Mix Ratio}}{100}\right) + \left(\frac{\text{VOC} \times \text{Mix Ratio}}{100}\right)
\]

\[
\left(\frac{62 \times 60}{100}\right) + \left(\frac{100 \times 30}{100}\right) + \left(\frac{49 \times 10}{100}\right)
\]

\[
37.2 + 30.0 + 4.9 = 72.1\% \text{ VOC by weight}
\]

Density of Multi-Part Coating=

\[
\left(\frac{\text{Density} \times \text{Mix Ratio/100}}{100}\right) + \left(\frac{\text{Density} \times \text{Mix Ratio/100}}{100}\right) + \left(\frac{\text{Density} \times \text{Mix Ratio/100}}{100}\right)
\]

\[
\left(\frac{10.5 \times 60}{100}\right) + \left(\frac{7.5 \times 30}{100}\right) + \left(\frac{6.75 \times 10}{100}\right)
\]

\[
6.3 + 2.3 + 0.68 = 9.28 \text{ lbs/gal}
\]