

## COMMON CONVERSION FACTORS AND METHODS

1 therm = 0.0000952 mmscf  
 1 pound/gallon = 120 grams/liter

Unit weight of material in lbs per gallon (i.e. density) = (Specific Gravity) X 8.34 lbs/gal

<u>Material</u>	<u>Density (lbs/gal)</u>	<u>Material</u>	<u>Density (lbs/gal)</u>
1,1,1-Trichloroethane	11.05 lbs/gal	Polyester resins:	
Methylene chloride	11.13 lbs/gal	General resin	9.2 lbs/gal
Freon 11	12.5 lbs/gal	Isophthalic	8.9 lbs/gal
Freon 12	12.4 lbs/gal	Vinyl ester	8.7 lbs/gal
Freon 113	13.0 lbs/gal	Colored gel coat	10.5 lbs/gal
Perchloroethylene	13.53 lbs/gal	Clear gel coat	9.0 lbs/gal

### EXAMPLES:

a) **To Calculate VOC content:** If the MSDS does not include the VOC content, you can calculate the VOC content based on the weight percent of VOC compound reported on the MSDS. Using the weight percentage (W%) of VOC compounds and density or specific gravity (from the MSDS), the emission factor can be calculated as:

$$\text{VOC (lbs/gal)} = \text{W\%/100} \times \text{Density (lbs/ gal)}$$

where: Density = Specific gravity x 8.34 lbs/gal and W% = Total weight percent of VOC compounds

b) **To change VOC emission factor from lbs/gal to lbs/lb, use the following formula:**

$$\frac{\text{lbs}}{\text{lb}} = \frac{\text{lbs}}{\text{gal}} \times \frac{1}{(\text{Specific Gravity} \times 8.34)}$$

If, for instance, you have a coating with a listed VOC content of 2.5 lbs/gallon, and a specific gravity of 1.05, you will need to set up the following equation to come up with an emission factor to match your usage measured in pounds.

$$\text{Emission Factor in lbs/lb} = \frac{2.5 \text{ lbs VOC}}{\text{gal Coating}} \times \frac{1 \text{ gal Coating}}{(1.05 \times 8.34) \text{ lbs Coating}} = 0.285 \frac{\text{lbs VOC}}{\text{lb Coating}}$$

c) **To change VOC emission factor from grams per liter of material (g/l) to pounds per gallon (lbs/gal) of material, use the following formula:**

1 pound/gallon = 120 grams/liter

If, for instance, you have paint with a listed VOC content of 250 grams per liter, you will need to set up the following equation to come up with an emission factor to match your usage measured in gallons.

$$\frac{250 \text{ grams/liter of Paint}}{120} = 2.083 \text{ pounds per gallon VOC}$$

**Note:** The number  $\frac{1}{120} = \frac{3.785 \text{ liters}}{1 \text{ gallon}} \times \frac{1 \text{ lb of VOC}}{454 \text{ g VOC}}$

**d) To change from lbs/MMBTU to lbs/mmscf for natural gas, use the following formula:**

$$\frac{\text{lbs}}{\text{MMBTU}} \times \frac{1050 \text{ MMBTU}^*}{\text{mmscf}} = \frac{\text{lbs}}{\text{mmscf}}$$

\* If specific heat content data is not available.