



# Volatile Organic Compounds (VOC) Content as Per ASTM D 5403-93

Volatile content is determined as two separate components – processing volatiles and potential volatiles. Processing volatiles is a measure of volatile loss during the actual cure process. Potential volatiles is a measure of volatile loss that might occur during aging or extreme storage conditions.

$$\text{VOC} = \% \text{ Processing Volatiles} + \% \text{ Potential Volatiles}$$

## PROCEDURE

1. Weigh a preconditioned aluminum dish. Record weight as **A**. Precondition the dishes for 30 minutes in an oven at 110+/- 5°C and store in a desiccator prior to use.
2. Apply a minimum of 0.2 g of test specimen to the aluminum dish and reweigh. Prepare a total of three test specimens. Record weight as **B**.
3. Cure the test specimens under a Dymax 5000-EC for 45 seconds. The intensity should be equal to 200 mW/cm<sup>2</sup>.
4. Allow the test specimens to cool 15 minutes at room temperature and reweigh. Record weight as **C**.
5. Heat the test specimen in a forced-draft oven for 60 min at 110+/-5°C.
6. Allow the test specimen to cool to room temperature in a desiccator for a few minutes and reweigh. Record weight as **D**.
7. Calculate the weight percent volatiles as follows:

$$\% \text{ Processing volatiles} = [(B - C) / (B - A)] \times 100$$

$$\% \text{ Potential volatiles} = [(C - D) / (B - A)] \times 100$$

$$\text{VOC} = \% \text{ Processing Volatiles} + \% \text{ Potential Volatiles}$$

Where:

A = weight of aluminum dish, g

B = weight of aluminum dish plus test specimen, g

C = weight of aluminum dish plus test specimen after cure, g

D = weight of aluminum dish plus cured test specimen after heating, g

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