

DETERMINATION OF WEIGHT OF NON-VOLATILE CONTENT IN PAINT**Application**

This method is used to determine the weight of non-volatile content of all types of paint, except water emulsion type paint.

Apparatus and Chemicals Required**Mechanical Convection Oven**

Capable of maintaining a temperature of 105 +/- 2 °C.

Analytical Balance

Having an accuracy of +/- 0.1 mg.

Glass Dropping Bottle

Having a 30 ml capacity with pipette dropper.

Aluminum Weighing Dishes

Having a 45 mm diameter.

Desiccator with Drying Agent

Drying agent to be calcium chloride.

Paint Shaker**Conditioning and Test Conditions**

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Preparation of Sample

1. Agitate the paint sample thoroughly to ensure complete dispersion.
2. The sample should be thinned to the viscosity required by the relevant Engineering Materials Specification with the solvent specified. The viscosity to be determined in accordance with FLTM BI 111-01.

Date	Action	Revisions
2001 03 13	Revised	Editorial – no technical change A. Cockman
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Procedure

1. Stir the prepared sample of paint thoroughly and carefully fill the dropping bottle to three-quarters full.
2. Take three clean aluminum dishes, dry to constant weight and note the weight of each.
3. Weigh the dropping bottle plus the paint and then transfer 0.5 - 1.0 g of the sample to each aluminum dish, reweighing the dropping bottle after each transfer. Record the weights.
4. Place the aluminum dishes in the laboratory oven for 60 minutes at 105 +/- 5 °C followed by 30 minutes at the material storing temperature.
5. Cool the dishes to 23 +/- 2 °C in the desiccator and reweigh.

Evaluation

Calculate the weight of non-volatile content according to the following formula and report the results as the average value of the three samples:

$$W_n = \frac{W_r}{W_i} \times 100$$

Where: W_n = Weight of non-volatile content, %

W_r = Weight of Non-volatile Residue, g

W_i = Initial Weight of Sample, g

Note: 1. If the individual results of the three samples differ from each other by more than 1%, repeat the procedure.

2. Record the viscosity at which the test was performed.

Chemicals, materials, parts, and equipment referenced in this document must be used and handled properly. Each party is responsible for determining proper use and handling in its facilities.