

**DETERMINATION OF NON-VOLATILE CONTENT OF ELECTROCOATING MATERIAL**

**Application**

This method is used to determine the non-volatile content of paints, essentially that which is suspended or dissolved in water.

**Apparatus Required**

**Mechanical Convection Oven**

Capable of maintaining a constant temperature of 175 +/- 2 °C.

**Mechanical Convection Oven**

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

**Analytical Balance**

Precision +/- 0.0001 g

**Pipette or Spoonspatula**

**Aluminum Weighing Dishes** (45 mm diameter)

**Desiccator**

With drying agent (e.g. Drierite)

**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.

| Date       | Action  | Revisions                                  |
|------------|---------|--------------------------------------------|
|            |         |                                            |
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**Procedure**

1. Stir the sample of paint thoroughly.
2. Dry three clean aluminum dishes to constant weight and record the weights.
3. Transfer approximately 1 g of the sample to each weighing dish. Spread the paint evenly over the bottom surface and reweigh immediately. Record weights.
4. Preheat the dishes and contents for 60 minutes at 105 +/- 2 °C, then transfer to another oven for 30 minutes at 175 +/- 2 °C.
5. Cool the dishes to 23 +/- 2 °C in the desiccator and reweigh.

**Evaluation**

Calculate the non-volatile content according to the following formula and report the results as the average value of the 3 specimens:

$$\text{Non-volatile content \%} = \frac{\text{weight of residue}}{\text{initial weight of sample}} \times 100$$

Note: If the individual results of the three specimens differ from each other by more than 2 %, repeat the procedure. With specimens which contain up to 20 % non-volatiles, the individual results must not differ more than 1 %.

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.