
**Binders for paints and varnishes —
Determination of the non-volatile-
matter content of aqueous rosin-resin
dispersions —**

Part 2:

Microwave method

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*Liants pour peintures et vernis — Détermination de la teneur en
matières non volatiles des dispersions aqueuses de résine colophane —*

Partie 2: Méthode aux micro-ondes

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 16482-2 was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 10, *Test methods for binders for paints and varnishes*.

ISO 16482 consists of the following parts, under the general title *Binders for paints and varnishes — Determination of the non-volatile-matter content of aqueous rosin-resin dispersions*:

- Part 1: Oven method
- Part 2: Microwave method

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Binders for paints and varnishes — Determination of the non-volatile-matter content of aqueous rosin-resin dispersions —

Part 2: Microwave method

1 Scope

This part of ISO 16482 specifies a method for determining the non-volatile content, by mass, of aqueous rosin-resin dispersions, using a microwave oven.

This method is applicable to resin dispersions having a softening point from 60 °C to 100 °C, measured in accordance with ISO 4625-1 (ring-and-ball method).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4625-1, *Binders for paints and varnishes — Determination of softening point — Part 1: Ring-and-ball method* [ISO 16482-2:2013](https://www.iso.org/standard/51151.html)

ISO 15528, *Paints, varnishes and raw materials for paints and varnishes — Sampling* [6a40292bf408/iso-16482-2-2013](https://www.iso.org/standard/51151.html)

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

non-volatile matter

NV

residue by mass obtained by evaporation under specified conditions

[SOURCE: ISO 4618:2006]

4 Principle

The volatile substances in the test portion will absorb microwave energy and volatilize. The solid material will not absorb microwave energy and will remain relatively cool. Thus, the mass loss is due only to water and/or other volatile organics present in the test portion.

5 Apparatus

5.1 Microwave moisture analyser.

5.2 Glass-fibre sample pads.

6 Sampling

Take a representative sample of the resin dispersion as described in ISO 15528.

7 Procedure

Carry out a single determination.

Programme the microwave moisture analyser (5.1) with the appropriate test parameters in accordance with the manufacturer’s instructions. Place two glass-fibre sample pads (5.2) on the balance pan and tare the balance to allow for the mass of the sample pads. Spread 1 g to 2 g of the sample thinly and evenly across the surface of one sample pad. Cover this test portion with the other sample pad to make a “sandwich”. Place this “sandwich” on the balance pan and press “START”.

The microwave moisture analyser automatically weighs the test portion, controls the drying process, and calculates the result.

8 Expression of results

The microwave moisture analyser gives the result of the analysis to two decimal places, expressed as a percentage by mass.

The non-volatile-matter content NV, expressed as a percentage by mass, is calculated by the instrument using Formula (1):

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$$NV = \frac{m_{sd} - m_s}{m_{ss} - m_s} \tag{1}$$

where

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m_s is the mass, in grams, of the sample pads;

m_{ss} is the mass, in grams, of the sample pads plus test portion;

m_{sd} is the mass, in grams, of the sample pads plus residue after heating.

Report the result to two decimal places.

9 Test report

The test report shall contain at least the following information:

- a) all details necessary for complete identification of the product tested (manufacturer, trade name, batch number, etc.);
- b) a reference to this part of ISO 16482 (i.e. ISO 16482-2);
- c) the result of the test, as indicated in [Clause 8](#);
- d) any deviation from the test method specified;
- e) the date of the test.

Bibliography

- [1] ISO 4618:2006, *Paints and varnishes — Terms and definitions*

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