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

**Part 1:
Oven method**

*Liants pour peintures et vernis — Détermination de la teneur en
matières non volatiles des dispersions aqueuses de résine colophane —
Partie 1: Méthode à l'étuve*



STANDARDSISO.COM : Click to view the full PDF of ISO 16482-1:2013



COPYRIGHT PROTECTED DOCUMENT

© ISO 2013

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 16482-1 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*

STANDARDSISO.COM : Click to view the full PDF of ISO 16482-1:2013

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

Part 1: Oven 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 an 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 15528, *Paints, varnishes and raw materials for paints and varnishes — Sampling*

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 water in a resin dispersion is evaporated at 135 °C. The mass of the residue is determined.

5 Apparatus

5.1 Analytical balance, accurate to 0,000 1 g.

5.2 Aluminium dishes, having a diameter of (45 ± 5) mm at the bottom. The height of the rim shall be not more than 40 mm.

5.3 Non-convection oven, capable of being maintained at (135 ± 3) °C.

5.4 **Convection oven**, capable of being maintained at about 160 °C.

6 Reagents

6.1 **Toluene**, chemically pure grade.

6.2 **Acetone**, chemically pure grade.

7 Sampling

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

8 Procedure

Carry out the determination in triplicate.

Use clean aluminium dishes (5.2). If the dishes need to be cleaned, wash them first with toluene (6.1) and then with acetone (6.2). Let the dishes dry in a fume cupboard until they are solvent free. Then keep them in the convection oven (5.4) maintained at 160 °C for at least 24 h. For each sample tested, take three dried dishes from the oven and let them cool to room temperature.

Weigh 2,000 g of the dispersion, to the nearest 0,000 1 g, into a pre-weighed aluminium dish.

Place the dishes for at least 45 min in the non-convection oven (5.3) until a constant or stabilized weight has been reached at 135 °C.

After 45 min, remove the dishes and allow them to cool to room temperature.

Weigh the cooled dishes to the nearest 0,000 1 g.

9 Expression of results

Calculate the non-volatile-matter content, NV, expressed as a percentage by mass, from the loss in mass, using Formula (1):

$$NV = \frac{(m_2 - m_0)}{(m_1 - m_0)} \times 100 \quad (1)$$

where

m_0 is the mass, in grams, of the empty dish;

m_1 is the mass, in grams, of the dish plus test portion;

m_2 is the mass, in grams, of the dish plus residue.

Calculate the mean of three valid results (triplicates) and report the result to one decimal place.

10 Test report

The test report shall contain at least the following information:

- all details necessary for complete identification of the product tested (manufacturer, trade name, batch number, etc.);
- a reference to this part of ISO 16482 (i.e. ISO 16482-1);

- c) the result of the test, as indicated in [Clause 9](#);
- d) any deviation from the test method specified;
- e) the date of the test.

STANDARDSISO.COM : Click to view the full PDF of ISO 16482-1:2013

Bibliography

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

STANDARDSISO.COM : Click to view the full PDF of ISO 16482-1:2013