

---

---

**Paints and varnishes — Determination of  
density —**

**Part 3:**  
**Oscillation method**

*Peintures et vernis — Détermination de la masse volumique —*

*Partie 3: Méthode par oscillation*



## 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.

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.

International Standard ISO 2811-3 was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*.

Together with the other parts, this part of ISO 2811 cancels and replaces ISO 2811:1974, which has been technically revised.

ISO 2811 consists of the following parts, under the general title *Paints and varnishes — Determination of density*:

- *Part 1: Pyknometer method*
- *Part 2: Immersed body (plummet) method*
- *Part 3: Oscillation method*
- *Part 4: Pressure cup method*

Annex A forms an integral part of this part of ISO 2811. Annexes B and C are for information only.

© ISO 1997

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Organization for Standardization  
Case postale 56 • CH-1211 Genève 20 • Switzerland  
Internet central@iso.ch  
X.400 c=ch; a=400net; p=iso; o=isocs; s=central

Printed in Switzerland

# Paints and varnishes — Determination of density —

## Part 3: Oscillation method

### 1 Scope

This part of ISO 2811 is one of a series of standards dealing with the sampling and testing of paints, varnishes and related products.

It specifies a method for determining the density of paints, varnishes and related products using an oscillator.

The method is suitable for all materials, including paste-like coatings. If a pressure-resistant type of apparatus is used, the method is also applicable to aerosols.

### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 2811. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 2811 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1512:1991, *Paints and varnishes — Sampling of products in liquid or paste form.*

ISO 1513:1992, *Paints and varnishes — Examination and preparation of samples for testing.*

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods.*

### 3 Definition

For the purposes of this part of ISO 2811, the following definition applies.

**3.1 density,  $\rho$ :** The mass divided by the volume of a portion of a material, expressed in grams per millilitre (g/ml).

### 4 Principle

A glass or stainless-steel U-tube is filled with the product under test. The tube is clamped at both ends and then subjected to oscillation. The resonance frequency of the filled tube will vary with the mass contained in the tube, i.e. the density of the product under test.