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Plastics — Liquid resins — Determination of density by the pycnometer method

Plastiques — Résines liquides — Détermination de la masse volumique par la méthode du pycnomètre

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 5, *Physical-chemical properties,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 249, *Plastics,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 1675:1985), which has been technically revised.

The main changes are as follows:

— the specification of the apparatus has been revised;

— a bibliography with references for the density of air and water has been added.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Plastics — Liquid resins — Determination of density by the pycnometer method

1 Scope

This document specifies a method for the determination of the density of liquid resins using a pycnometer.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
density
ρ
ratio of the mass, *m*, of a sample to its volume, *V*, at temperature, *T*

Note 1 to entry: It is expressed in kg/m^3, kg/dm^3 (g/cm^3) or kg/l (g/ml).

4 Principle

Determination of the mass of a resin contained in a pycnometer of known volume at 23 °C.

NOTE This method is easily applicable to low and medium viscosity resins. Difficulties in the procedure can arise for high viscosity resins.

5 Apparatus

5.1 Pycnometer, consisting of a graduated glass flask with a close-fitting ground glass stopper. Alternatively, the pycnometer may be closed with a ground glass stopper with a capillary tube which allows to set a given volume and escape of air bubbles at the same time.

The pycnometer may be equipped with a suitable funnel for easier filling.

The graduated or total volume of the pycnometer at (23,0 ± 0,1) °C, measured by determining the mass of distilled water filled in the pycnometer until the graduation mark or total volume at this temperature, shall have an accuracy of 0,01 % or better (see Clause 7).

5.2 Balance, accurate to 0,2 mg.

5.3 Thermostatic device, capable of being maintained at (23,0 ± 0,1) °C.