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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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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.

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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.

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