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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Plastics — Polymer dispersions — Determination of density

Plastiques — Dispersions de polymères — Détermination de la masse volumique

Reference number
ISO 8962:1987 (E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8962 was prepared by Technical Committee ISO/TC 61, *Plastics*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Plastics — Polymer dispersions — Determination of density

1 Scope and field of application

This International Standard specifies two methods of test for determining the density of polymer dispersions (aqueous and non-aqueous) :

- Method I : Pyknometer method for high-precision measurements at all viscosity ranges of polymer dispersions
- Method II : Hydrometer method for polymer dispersions of low to moderately high viscosity ranges (approximately $< 0,5$ Pa·s)

NOTES

1 The presence of foam in the dispersion exerts a pronounced influence on results. The only dispersions that can be expected to be free, for the most part, from microfoam have a very low viscosity. Many dispersions of medium to high viscosity contain finely divided foam bubbles that are extremely difficult to remove. In such cases, a wide margin of error can be expected.

2 A dilution of polymer dispersions of very high viscosity does give approximately linear density changes within the precision of the method (to three decimal places)

2 References

ISO 291, *Plastics — Standard atmospheres for conditioning and testing.*

ISO 2811, *Paints and varnishes — Determination of density.*

3 Definition

density : Mass divided by volume.

4 Method I : Pyknometer method for high-precision measurements at all viscosity ranges of polymer dispersions

NOTE — This method is based on ISO 2811.

4.1 Materials

4.1.1 **Chromic acid**, cleaning solution.

4.1.2 **Distilled water** or **water of equivalent purity**.

4.1.3 **Solvent**, leaving no residue on evaporation.

4.2 Apparatus

4.2.1 **Pyknometers**, of capacity 20 to 100 ml. Glass pyknometers are shown in figures 1 and 2; a metal pyknometer is shown in figure 3.

4.2.2 **Thermometer**, graduated in divisions of $0,1$ °C and accurate to $0,2$ °C.

4.2.3 **Water-bath** or **constant-temperature room**, capable of being maintained within $\pm 0,5$ °C of the test temperature (usually $23 \pm 0,5$ °C) when high accuracy is required, or within ± 2 °C for production control purposes.

4.2.4 **Analytical balance**, accurate to within 0,1 mg.