

International Standard



1148

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Plastics — Aqueous dispersions of polymers and copolymers — Determination of pH

Plastiques — Dispersions aqueuses de polymères et de copolymères — Détermination du pH

Second edition — 1980-11-01

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UDC 678.5/.8-13 : 543.257.1

Ref. No. ISO 1148-1980 (E)

Descriptors : plastics, polymers, copolymers, suspension tests, determination, pH, pH meters, electrometric analysis.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

International Standard ISO 1148 was developed by Technical Committee ISO/TC 61, *Plastics*.

This second edition was submitted directly to the ISO Council, in accordance with clause 5.10.1 of part 1 of the Directives for the technical work of ISO. It cancels and replaces the first edition (i.e. ISO 1148-1975), which had been approved by the member bodies of the following countries :

Austria	Iran	South Africa, Rep. of
Belgium	Israel	Spain
Brazil	Italy	Sweden
Czechoslovakia	Japan	Switzerland
Egypt, Arab Rep. of	Korea, Rep. of	Turkey
France	Netherlands	United Kingdom
Germany, F. R.	Poland	USA
Hungary	Portugal	USSR
India	Romania	

No member body had expressed disapproval of the document.

Plastics — Aqueous dispersions of polymers and copolymers — Determination of pH

1 Scope and field of application

This International Standard specifies a method for the determination of pH of aqueous polymer and copolymer dispersions by means of a pH meter equipped with a glass electrode.

2 Principle

Measurement of the potential difference existing between a glass electrode and a reference calomel electrode immersed in the aqueous dispersion maintained at 23 ± 1 °C, and reading of this difference, expressed in pH units, directly on the pH meter scale.

For dispersions having a viscosity higher than about 20 Pa·s (200 P), the pH value may be measured after dilution with an equal volume of distilled water.

3 Reagent

Distilled water, freshly boiled and cooled in an atmosphere free of carbon dioxide.

4 Apparatus

4.1 pH meter, equipped with a glass electrode, allowing pH measurements to the nearest 0,1 pH unit.

As temperature has a great influence on measurement results, the pH meter used shall be equipped with a device allowing compensation for temperature.

The pH meter shall be regularly checked by pH measurement of standard buffer solutions.

4.2 Thermoregulated bath, capable of being controlled at 23 ± 1 °C.

4.3 Beaker, of capacity 100 ml.

4.4 Graduated measuring cylinder, of capacity 50 ml.

5 Procedure

5.1 Pour about 50 ml of the aqueous dispersion to be tested into the beaker (4.3), this volume being measured with the graduated cylinder (4.4). If this aqueous dispersion has a viscosity higher than about 20 Pa·s, it is preferable to pour into the beaker 25 ml of dispersion and 25 ml of distilled water (clause 3). Then homogenize this diluted dispersion thoroughly by stirring with a glass rod.

5.2 Put the beaker containing the test dispersion into the thermoregulated bath (4.2) at 23 ± 1 °C and allow the temperature to become stable.

Carefully wash the electrodes of the pH meter (4.1) with distilled water (clause 3) and wipe them dry with soft absorbent paper.

Rinse the glass electrode once or twice with the test dispersion.

Plunge the electrodes into the beaker containing the test dispersion previously brought to 23 ± 1 °C and measure the pH value.

Carry out three determinations. Express the values in pH units to one decimal place. If the difference in the determinations is greater than 0,3 pH units, carry out a further series of determinations until agreement within this limit is obtained.

Immediately after the test the electrodes must be carefully washed.

6 Expression of results

Calculate the arithmetic mean of the three values finally retained, rounding to the first decimal place, according to the usual rules.

7 Test report

The test report shall include the following particulars :

- a) reference to this International Standard;
- b) complete identification of the product tested;
- c) the result expressed according to clause 6;
- d) any circumstances which may have affected the result.