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

Matières plastiques — Dispersions aqueuses de polymères et copolymères — Détermination du pH

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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.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 61 has reviewed ISO Recommendation R 1148 and found it technically suitable for transformation. International Standard ISO 1148 therefore replaces ISO Recommendation R 1148-1969 to which it is technically identical.

ISO Recommendation R 1148 was 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	Poland	U.S.A.
Hungary	Portugal	U.S.S.R.
India	Romania	

No Member Body expressed disapproval of the Recommendation.

The Member Body of the following country disapproved the transformation of ISO/R 1148 into an International Standard :

Canada

Printed in Switzerland

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

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a procedure for the determination of pH by a pH meter equipped with a glass electrode.

The procedure is suitable for aqueous polymer and copolymer dispersions.

2 PRINCIPLE

Measurement of the difference of potential existing between a glass electrode and a reference calomel electrode immersed in the aqueous dispersion, and reading of this difference, expressed in pH units, directly on the apparatus 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 APPARATUS

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

It is essentially composed of the following items :

a) Glass electrode. This electrode is to be kept in distilled water, unless otherwise specified by the manufacturer.

b) Reference calomel electrode, saturated with KCl. Connection between the electrode and test solution is provided by a capillary type device without flow, or by a sintered glass plate.

c) Amplifying potentiometer, especially made for pH measurement.

As temperature has a great influence on measurement results, the electrometer used shall be equipped with a device allowing compensation of temperature and conversion of electromotive force into pH units, at the temperature of the sample.

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

3.2 Thermoregulated bath at 20 ± 1 °C.

3.3 Beaker, 100 ml.

3.4 Graduated test tube, 50 ml.

4 REAGENT

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

5 PROCEDURE

5.1 Pour about 50 ml of the aqueous dispersion to be tested into a 100 ml beaker. If this aqueous dispersion has a viscosity higher than about 20 Pa·s, pour into the beaker 25 ml of dispersion and 25 ml of distilled water (4). 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 at 20 °C and allow the temperature to become stable.

Carefully wash the electrodes with distilled water (4) 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 20 °C and measure the pH value.

Carry out the test three times, beginning from 5.1.

Triple determinations shall agree within 0,3 pH unit. Immediately after the test the electrodes must be carefully washed.

6 EXPRESSION OF RESULTS

Indicate as the pH value of the test dispersion the average of the three results obtained, to one decimal place only.

7 TEST REPORT

The test report shall include the following particulars :

a) identification characteristics of the product tested;

b) pH value.