

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 118

PLASTICS

DETERMINATION OF METHANOL-SOLUBLE MATTER IN POLYSTYRENE

1st EDITION

August 1959

COPYRIGHT RESERVED

The copyright of ISO Recommendations and ISO Standards belongs to ISO Member Bodies. Reproduction of these documents, in any country, may be authorized therefore only by the national standards organization of that country, being a member of ISO.

For each individual country the only valid standard is the national standard of that country.

Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 118, *Determination of Methanol-Soluble Matter in Polystyrene*, was drawn up by Technical Committee ISO/TC 61, *Plastics*, the Secretariat of which is held by the American Standards Association, Incorporated (ASA).

At its third meeting, held in Stockholm, in August 1953, the Technical Committee assigned the development of this question to its Working Group No. 5, *Physical Chemical Properties*, under the leadership of the United Kingdom.

The draft formulated by the Working Group was presented to the Technical Committee at its fourth plenary meeting, held at Brighton, in October 1954, and then distributed to the members of the Technical Committee, as a draft proposal for an ISO Recommendation.

After its reconsideration at the fifth meeting of ISO/TC 61, held in Paris, in July 1955, the draft proposal was adopted, subject to some amendments, as a Draft ISO Recommendation.

On 25 January 1957, the Draft ISO Recommendation (No. 122) was distributed to all the ISO Member Bodies and was approved, subject to some amendments, by the following 25 (out of a total of 38) Member Bodies:

Australia	*Greece	Poland
Austria	*Hungary	Romania
Belgium	India	Spain
*Canada	*Ireland	Sweden
Czechoslovakia	Japan	Switzerland
Finland	Mexico	United Kingdom
France	Netherlands	U.S.A.
Germany	*New Zealand	U.S.S.R.
		*Yugoslavia

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in August 1959, to accept it as an ISO RECOMMENDATION.

* These Member Bodies stated that they had no objection to the Draft being approved.

PLASTICS

DETERMINATION OF METHANOL-SOLUBLE MATTER IN POLYSTYRENE

1. SCOPE

- 1.1 This method of test describes the procedure for determining the amount of matter in unmodified polystyrene that is soluble in methanol by measuring the loss in weight of a sample of polystyrene on precipitation from solution with methanol.
- 1.2 The methanol-soluble matter may consist of monomer or a mixture of monomer with any soluble lubricant or coloring matter which may be present. The presence of mineral pigments, emulsifying agents or lubricants may interfere with the test by making filtration difficult.

2. APPARATUS

The apparatus consists of the following:

- (a) Means of reducing the material to a powder;
- (b) Sieve with apertures of 1.25 to 2.0 mm; *
- (c) Sintered glass filtering crucible of low porosity;
- (d) Drying oven to give a temperature of 65 to 70 °C;
- (e) Desiccator containing phosphorus pentoxide or any other desiccant giving the same results;
- (f) Balance to weigh to 0.0001 g;
- (g) 50 ml beaker with watch-glass cover;
- (h) 400 ml beaker;
- (j) Wash-bottle.

3. REAGENTS

The following reagents are required:

- (1) Dioxane, or
- (2) Propylene oxide, or
- (3) Methyl ethyl ketone;
- (4) Redistilled methanol.

4. PREPARATION OF SAMPLE

A fully representative sample is used. If it is necessary to facilitate solution, the sample may be ground by any convenient means so that it will pass through a sieve with apertures of 1.25 to 2.0 mm.

5. PROCEDURE

- 5.1 Two portions of the material are tested.
- 5.2 All glassware is thoroughly washed with benzene or toluene, rinsed with acetone and dried before use. The sintered glass crucible is heated for at least one hour in an oven at the temperature of 65 to 70 °C and stored in a desiccator until required.

* Standardization of sieve openings is now under study by Technical Committee ISO/TC 24, *Sieves*. If the values specified for sieve openings in the present ISO Recommendation are not included in the ISO Recommendation which will have been drawn up for sieve openings, Technical Committee ISO/TC 61, *Plastics*, will reconsider the present specification.