

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 175

PLASTICS

DETERMINATION OF THE RESISTANCE OF PLASTICS TO CHEMICAL SUBSTANCES

1st EDITION
February 1961

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Printed in Switzerland

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

BRIEF HISTORY

The ISO Recommendation R 175, *Determination of the Resistance of Plastics to Chemical Substances*, was drawn up by Technical Committee ISO/TC 61, *Plastics*, the Secretariat of which is held by the American Standards Association, Incorporated (ASA).

Work on this matter which the Technical Committee had begun since 1954, came to an end in 1956, with the adoption of a proposal as a Draft ISO Recommendation.

On 28 November 1958, the Draft ISO Recommendation (No. 190) was distributed to all the ISO Member Bodies and was approved, subject to some editorial amendments, by the following Member Bodies:

Australia	Israel	Sweden
Bulgaria	Italy	Switzerland
Burma	Japan	Turkey
Czechoslovakia	Netherlands	United Kingdom
France	Poland	U.S.A.
Germany	Portugal	U.S.S.R.
Hungary	Romania	
India	Spain	

Two Member Bodies opposed the approval of the Draft:
Austria, Belgium.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in February 1961, to accept it as an ISO RECOMMENDATION.

PLASTICS**DETERMINATION OF THE RESISTANCE OF PLASTICS
TO CHEMICAL SUBSTANCES****1. SCOPE**

- 1.1** This ISO Recommendation describes the procedure for measuring the change of weight and dimensions of plastics after immersion in chemical substances.

This method of test is intended for the testing of all organic plastics materials, such as cast, extruded, calendered, moulded, laminated products, both flexible and rigid, sheet, rod and tube materials with thickness not less than 0.1 mm.

- 1.2** This method is suitable, in particular, for the determination of the loss of plasticizers and other extractable components from plastics, after immersion in volatile chemicals.

2. SIGNIFICANCE OF TEST

- 2.1** This is an empirical test method, only suitable for the comparison of different plastics after immersion in chemical substances, in liquid form or in solution.
- 2.2** The choice of the reagents, of the temperature and of the duration of tests is necessarily arbitrary; the list of reagents reported below should serve primarily as a guide to investigators wishing to compare the relative resistance to chemicals of various plastics and to have a first assessment of their behaviour in respect of certain groups of chemical substances.
- 2.3** In order to have a more accurate knowledge about the behaviour of a particular plastic material in a practical application, it will be necessary to fit to this special need the particular reagents and concentrations employed, the duration and the temperature of the test and any other experimental factor.

3. APPARATUS

The apparatus consists of the following:

- 3.1** *Balance*, to weigh to 1 mg. A balance to weigh to 0.1 mg, for weighing specimens of less than 1 g.
- 3.2** *Micrometers*, for measuring to 0.01 mm.
- 3.3** *Containers*. Jars or beakers; the dimensions should be proportionate to the specimens; one container should be provided for each specimen.