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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 584

PLASTICS

DETERMINATION OF THE MAXIMUM TEMPERATURE AND THE RATE OF INCREASE OF TEMPERATURE DURING THE SETTING OF UNSATURATED POLYESTER RESINS

1st EDITION
July 1967

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 584, *Determination of the Maximum Temperature and the Rate of Increase of Temperature during the Setting of Unsaturated Polyester Resins*, was drawn up by Technical Committee ISO/TC 61, *Plastics*, the Secretariat of which is held by the United States of America Standards Institute (USASI).

Work on this question by the Technical Committee began in 1959 and led, in 1961, to the adoption of a Draft ISO Recommendation.

This first Draft ISO Recommendation (No.467) was circulated to all the ISO Member Bodies for enquiry, in April 1962. As the results of this consultation were not considered satisfactory, the Technical Committee presented a second Draft ISO Recommendation, which was circulated to all the Member Bodies in September 1964, and which was approved, subject to a few modifications of an editorial nature, by the following Member Bodies:

Argentina	Germany	Romania
Australia	Hungary	Spain
Austria	India	Sweden
Belgium	Israel	Switzerland
Bulgaria	Italy	Turkey
Canada	Japan	U.A.R.
Czechoslovakia	Korea, Rep. of	United Kingdom
Denmark	Netherlands	U.S.A.
Finland	New-Zealand	U.S.S.R.
France	Poland	

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 July 1967, to accept it as an ISO RECOMMENDATION.

ISO Recommendation R 584 July 1967

PLASTICS

DETERMINATION OF THE MAXIMUM TEMPERATURE AND THE RATE OF INCREASE OF TEMPERATURE DURING THE SETTING OF UNSATURATED POLYESTER RESINS

1. SCOPE

1.1 This ISO Recommendation describes a method of test for measuring firstly, the maximum temperature reached by a solution of an unsaturated polyester resin and catalyst, when heated on a water bath at 80 °C, and secondly, the time taken for the temperature of the solution to rise from 65 °C to this maximum temperature. If the maximum temperature exceeds 90 °C, the time taken for the temperature to rise from 65 °C to 90 °C is also measured.

1.2 The maximum temperature reached and the rate of increase of temperature during the setting of unsaturated polyester resins give an indication of their behaviour in use and can be used to compare resins of similar type. As the test results depend very much on the conditions under which the test is carried out, these conditions are described in detail.

1.3 The method can also be used to test catalysts.

2. REAGENTS

2.1 Chemically pure benzoyl peroxide, or other peroxide by agreement between the parties concerned.

2.2 Dibutyl phthalate.

3. APPARATUS

3.1 **Water bath,** maintained at 80 ± 0.5 °C and provided with a thermostat and a circulation pump or stirrer.

3.2 Glass **test tube** of internal diameter 18 ± 1 mm, length 180 mm and wall thickness 1 ± 0.2 mm.

3.3 Iron-constantan **thermocouple** consisting of wires of 1 ± 0.05 mm thickness, their welded junction being 3 to 4 mm diameter, and a meter for measuring temperatures up to 250 °C and graduated in divisions of 2 degrees Celsius. If a different type of thermocouple is used, this should be mentioned in the test report.

3.4 If a **recorder** is used it should be possible to read temperature on the graph paper with an accuracy of 1 degree Celsius, and time with an accuracy of 15 seconds.