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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 1147

PLASTICS

AQUEOUS DISPERSIONS OF POLYMERS AND COPOLYMERS

FREEZE-THAW CYCLE STABILITY TEST

1st EDITION

November 1969

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

BRIEF HISTORY

The ISO Recommendation R 1147, *Plastics – Aqueous dispersions of polymers and copolymers – Freeze-thaw cycle stability test,* was drawn up by Technical Committee ISO/TC 61, *Plastics,* the Secretariat of which is held by the American National Standards Institute (ANSI).

Work on this question led to the adoption of a Draft ISO Recommendation.

In May 1968, this Draft ISO Recommendation (No. 1623) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Austria	Israel	Spain
Belgium	Italy	Sweden
Brazil	Japan	Switzerland
Czechoslovakia	Korea, Rep. of	Turkey
France	Netherlands	U.A.R.
Germany	Poland	United Kingdom
Hungary	Portugal	U.S.A.
India	Romania	U.S.S.R.
Iran	South Africa, Rep. of	

No Member Body opposed the approval of the Draft.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in November 1969, to accept it as an ISO RECOMMENDATION.

ISO Recommendation | R 1147 | November 1969

PLASTICS

AQUEOUS DISPERSIONS OF POLYMERS AND COPOLYMERS

FREEZE-THAW CYCLE STABILITY TEST

1. SCOPE AND FIELD OF APPLICATION

1.1 This ISO Recommendation describes a procedure for the evaluation of the freeze-thaw cycle stability of aqueous dispersions.

The freezing temperature is normally – 10 °C, but in special cases, a lower temperature can be used.

1.2 The test has no significance if the sample is not frozen under the test conditions.

1.3 The procedure is suitable for all aqueous polymer and copolymer dispersions.

2. PRINCIPLE

Placing of a sample of the dispersion being tested in a refrigerator at – 10 °C for 16 hours, then at room temperature (about 20 °C) for 8 hours.

Checking of the condition of the dispersion; if there is no coagulum, repetition of the freeze-thaw cycle until it appears, up to a maximum of 5 cycles.

Freeze-thaw cycle stability is indicated by the number of cycles endured.

3. APPARATUS

3.1 *Cylindrical container,* of constant diameter and fitted with a stopper, having the following dimensions :

- height : 100 mm
- inside diameter : 40 mm
- thickness : 2 mm

It may be made of "high density" polyethylene.

3.2 *Refrigerator* with temperature control for – 10 ± 0.5 °C.

3.3 *Laboratory balance,* accurate to the nearest 0.5 g.