INTERNATIONAL STANDARD 2028

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Butadiene homopolymer and copolymer latices — Preparation of dry polymer

Latex d'homopolymères et de copolymères de butadiène — Préparation de polymère sec

First edition — 1974-07-01

STANDARDSISO.COM : Click to view the full PDF of ISO 2028:1974

UDC 678.7.061

Ref. No. ISO 2028-1974 (E)

Descriptors : elastomers, synthetic elastomers, latex, polybutadiene, polymers, preparation, test specimens.

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 45 has reviewed ISO Recommendation R 2028 and found it technically suitable for transformation. International Standard ISO 2028 therefore replaces ISO Recommendation R 2028-1971 to which it is technically identical.

ISO Recommendation R 2028 was approved by the Member Bodies of the following countries :

Australia	Hungary	Sweden
Austria	India	Switzerland
Canada	Israel	Turkey
Ceylon	Italy	United Kingdom
Egypt, Arab Rep. of	Netherlands	U.S.A.
France	New Zealand	U.S.S.R.
Germany	South Africa, Rep. of	
Greece	Spain	

No Member Body expressed disapproval of the Recommendation.

No Member Body disapproved the transformation of ISO/R 2028 into an International Standard.

STANDARDSISO.COM : Click to view the full PDF of ISO 2028:1974

© International Organization for Standardization, 1974 •

Printed in Switzerland

Butadiene homopolymer and copolymer latices — Preparation of dry polymer

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for the preparation, for subsequent testing (for example, the determination of shearing disk viscosity) of dry polymer from butadiene homopolymer and copolymer anionic stabilized SBR and NBR latices having a volatile unsaturates content of less than 0,5 %.

The method is not applicable to latices which contain surfactants of the sulphonate or sulphate types, such as carboxylated rubber latices.

It should be noted that the dry polymer contains residual organic acids or soaps which may affect the properties of the polymer.

2 PRINCIPLE

Coagulation of the latex by the addition of sodium chloride and sulphuric acid solutions, with fast agitation, in the presence of phenyl β-naphthylamine dissolved in methanol. Filtration and drying of the resultant crumb.

3 REAGENTS

All reagents shall be of recognized analytical reagent quality, and distilled water or water of equivalent purity shall be used wherever water is specified.

3.1 Sodium chloride solution, 20 % (*m/m*).

3.2 PBN solution, 0,75 % (*m/m*) solution of phenyl β-naphthylamine in methanol.

3.3 Sulphuric acid solution : 1 volume of concentrated sulphuric acid (ρ 1,84 g/ml) added to 9 volumes of water.

3.4 Congo red indicator paper.

4 APPARATUS

4.1 Combined high-speed mechanical stirrer and comminutor with a totally enclosed motor, and with a stirrer vessel of capacity at least 1 000 ml.

4.2 Cheesecloth.

4.3 Drying tray, preferably of stainless steel wire gauze.

4.4 Forced-draught oven, maintained at a temperature between 100 and 125 °C.

5 PROCEDURE

If the total solids content of the latex is greater than 30 %, dilute the latex with water to a total solids content of 30 %.

To 250 ml of the latex contained in the stirrer vessel (4.1), add 50 ml of the sodium chloride solution (3.1) and mix thoroughly. With continued stirring, add 250 ml of the PBN solution (3.2) and slowly add, during 2 to 3 min, 10 ml of the sulphuric acid solution (3.3). Test with the indicator paper (3.4), and if its colour does not change from red to blue, add additional sulphuric acid, while stirring, until the colour does change.

Pour the contents of the stirrer vessel onto cheesecloth and press as much liquid as possible from the crumb. Separate the mass of crumb by hand and transfer the pieces to the drying tray.

Dry the crumb in the oven (4.4), avoiding under-drying and avoiding heating for more than 5 min after reaching minimum mass. The drying time depends upon the consistency of the crumb, the properties of the polymer and the oven conditions, and shall be determined by experiment.

STANDARDSISO.COM : Click to view the full PDF of ISO 2028:1974