International Standard 2028

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Rubber — Synthetic latices — Preparation of dry polymer

Caoutchouc — Latex synthétiques — Préparation de polymère sec

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Foreword

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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.

International Standard ISO 2028 was developed by Technical Committee ISO/TC 45, *Rubber and rubber products*, and was circulated to the member bodies in May 1980.

It has been approved by the member bodies of the following countries :

Austria	India	South Africa, Rep. of
Belgium	Ireland	Spain
Canada	Italy	Sweden
China	Korea, Rep. of	Thailand
Denmark	Netherlands	Turkey
Egypt, Arab Rep. of	Poland	United Kingdom
Germany, F. R.	Portugal	USA
Hungary	Romania	USSR

The member body of the following country expressed disapproval of the document on technical grounds :

France

This second edition cancels and replaces the first edition (i.e. ISO 2028-1974).

Printed in Switzerland

Rubber — Synthetic 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, for the determination of shearing disk viscosity), of dry polymer from anionic stabilized synthetic rubber latices having a volatile unsaturates content of less than 0,5 %.

The method is suitable for a variety of latices, but its applicability should be confirmed for individual types.

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

2 Reference

ISO 124, *Rubber latices — Determination of total solids content.*

3 Principle

Coagulation of the latex by the addition of sodium chloride and sulphuric acid solutions, with fast agitation, in the presence of an antioxidant. Filtration and drying of the resultant crumb.

4 Reagents

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

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

4.2 Antioxidant solution.

Prepare a 0,75 % (*m*/*m*) methanolic solution of a bis- or polyphenol antioxidant which will prevent oxidation of the polymer during its preparation.

4.3 Sulphuric acid solution.

Add 1 volume of concentrated sulphuric acid (ϱ = 1,84 Mg/m^3) to 9 volumes of water.

4.4 Congo red indicator paper.

5 Apparatus and material

5.1 Combined high-speed mechanical stirrer and comminutor, with a totally enclosed motor, and with a stirrer vessel of capacity at least 1 000 cm^3.

5.2 Cheesecloth.

5.3 Drying tray, preferably of stainless steel wire gauze.

5.4 Forced-draught oven, capable of being controlled at a temperature between 100 and 125 °C.

6 Procedure

If the total solids content is not known, determine it in accordance with ISO 124.

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 cm^3 of the latex contained in the stirrer vessel (see 5.1), add 50 cm^3 of the sodium chloride solution (4.1) and mix thoroughly. With continuous stirring, add 250 cm^3 of the antioxidant solution (4.2) and slowly add, during 2 to 3 min, 10 cm^3 of the sulphuric acid solution (4.3). Test with the indicator paper (4.4), and if its colour does not change from red to blue, add additional sulphuric acid, with stirring, until the colour does change.

Pour the contents of the stirrer vessel onto the cheesecloth (5.2) and press as much liquid as possible from the crumb. Separate the mass of crumb by hand, wash it with water and transfer the pieces to the drying tray (5.3).

Dry the crumb in the oven (5.4), controlled between 100 and 125 °C, 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.