
INTERNATIONAL STANDARD



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Raw rubber — Sample preparation

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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.

International Standard ISO 1796 was drawn up Technical Committee ISO/TC 45, *Rubber and rubber products*.

It was approved in July 1969 by the Member Bodies of the following countries :

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

No Member Body expressed disapproval of the document.

Raw rubber – Sample preparation

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method of preparing samples of raw rubber for purposes of subsequent tests.

2 DEFINITIONS

piece : The rubber taken from a bale of the sample to represent the bale.

test portion : The rubber taken from a piece for subjection to a test.

3 APPARATUS

See ISO 2393, *Equipment and procedures for the preparation, mixing and vulcanization of rubber test mixes*. (At present at the stage of draft.)

4 NATURAL RUBBER

4.1 Method of preparation of test portions

Weigh the piece to the nearest 0.1 g and then homogenize it by ten passes through the nip of a roll mill set at 1.3 ± 0.15 mm and with the rolls maintained at 70 ± 5 °C. Roll the rubber after passing through the nip and present the roll to the nip for the next pass. Return any solid matter parting from the rubber to it. After the tenth pass, do not roll the rubber and weigh again to the nearest 0.1 g.

NOTE – The initial and final masses are required for the calculation of volatile matter.

Place the blended piece in an airtight container of not more than twice the volume of the piece, or wrap in two layers of aluminium foil until required.

4.2 Allocation of portions for test

Cut test portions from the homogenized piece and allocate between such of the specific tests as may be required from those listed below; the tests shall be performed in accordance with the following ISO publications :

ISO/R 247, *Determination of ash in raw natural rubber*;

ISO/R 248, *Determination of volatile matter in raw natural rubber*;

ISO/R 249, *Raw natural rubber – Determination of dirt*;

ISO/R 289, *Determination of viscosity of natural and synthetic rubbers by the shearing disk viscometer*;

ISO/R 667, *Determination of rate of cure of rubber compounds by the shearing disk viscometer*;

ISO/R 1396, *Determination of copper in compounded rubber (vulcanized and unvulcanized)*;

ISO/R 1397, *Determination of manganese in compounded rubber*;

ISO 1658, *Mixing and vulcanizing natural rubber in standard test compounds*. (At present at the stage of draft.)

5 STYRENE BUTADIENE RUBBER

5.1 Method of preparation of test portions

For the determination of Mooney viscosity only, pass a portion of about, but not exceeding, 250 g ten times through the mill rolls with the nip set at 1.3 ± 0.15 mm and with the rolls maintained at 50 ± 5 °C. In passes 2 to 9 inclusive, double the rubber upon itself. On the tenth pass, sheet the rubber without doubling.

5.2 Allocation of portions for test

Cut test portions from the piece and allocate them between such of the specific tests as may be required from those listed below; the tests shall be performed in accordance with the following ISO publications :

ISO 2001, *Raw styrene butadiene rubber (SBR) – Determination of total ash*;

ISO 2002, *Raw styrene butadiene rubber (SBR) – Determination of organic acid*;

ISO 2003, *Raw styrene butadiene rubber (SBR) – Determination of soap*;

ISO 2058, *Raw styrene butadiene rubber (SBR) – Determination of volatile matter*;

ISO 2453, *Styrene butadiene copolymers – Determination of bound styrene*.

(These documents are at present at the stage of draft.)

5.3 Tests on the residue from the volatile matter determination

Such of the tests as may be required from those listed below shall be carried out on the dried material remaining after the volatile matter determination (see 5.2) on a portion of about 450 g; the tests shall be performed in accordance with the following ISO publications :

ISO/R 289, *Determination of viscosity of natural and synthetic rubbers by the shearing disk viscometer*;

ISO/R 667, *Determination of rate of cure of rubber compounds by the shearing disk viscometer*;

ISO 2322, *Non-pigmented styrene butadiene rubber (SBR) – Test recipe and method of mixing*. (At present at the stage of draft.)