

INTERNATIONAL
STANDARD

ISO
6235

Second edition
1995-04-01

**Rubber, raw — Determination of block
polystyrene content — Ozonolysis method**

*Caoutchouc brut — Dosage du polystyrène séquencé — Méthode de
l'ozonolyse*



Reference number
ISO 6235:1995(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 6235 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*.

This second edition cancels and replaces the first edition (ISO 6235:1982), of which it constitutes a minor revision.

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Rubber, raw — Determination of block polystyrene content — Ozonolysis method

WARNING — Persons using this International Standard shall be familiar with normal laboratory practice. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

1 Scope

This International Standard specifies a method for the determination of the long polystyrene block content of raw uncompounded styrene-butadiene rubber (SBR) and raw uncompounded blends of block SBR. It is not applicable to blends of block SBR with EPDM, IIR, CSM and other halogenated rubbers.

The method is applicable to raw, uncompounded latices of the above compositions and is suitable for rubbers having block polystyrene contents in the range from 5 % (m/m) to 100 % (m/m). Rubbers having block polystyrene contents of less than 5 % (m/m) may yield incorrect results unless a correction factor, based on information gained by working with such rubbers, is applied.

The method is intended for use on gel-free rubbers, but it may be used on rubbers containing gel if it has been proved that the gel does not interfere.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1407:1992, *Rubber — Determination of solvent extract.*

ISO 4655:1985, *Rubber — Reinforced styrene-butadiene latex — Determination of total bound styrene content.*

ISO 4793:1980, *Laboratory sintered (fritted) filters — Porosity grading, classification and designation.*

3 Principle

A test portion is dissolved in dichloromethane and the ethylenic bonds in the rubber ruptured by reaction with ozone. The ozonides thus formed are subsequently decomposed by methanolic sulfuric acid solution.

4 Reactions

The reactions upon which the method is based are as follows:

- Long, saturated, polystyrene blocks are not attacked by ozone, but small fragments (aldehydes and carboxylic acids) produced by the ozonolysis and the relatively low molecular mass polystyrene fragments from scission within the random copolymer blocks are soluble in methanolic sulfuric acid solution.
- Relatively high molecular mass polystyrene blocks are insoluble in methanolic sulfuric acid solution.