
INTERNATIONAL STANDARD



2303

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

**Rubber, isoprene (IR) – Non oil-extended,
solution-polymerized types – Test recipe and evaluation of
vulcanization characteristics**

*Caoutchouc polyisoprène (IR) – Types polymérisés en solution et non étendus à l'huile – Formule
d'essai et évaluation des caractéristiques de vulcanisation*

First edition – 1975-07-15

UDC 678.7 : 547.315.2

Ref. No. ISO 2303-1975 (E)

Descriptors : elastomers, synthetic elastomers, polyisoprene, test specimens, tests, vulcanizing.

Price based on 2 pages

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 2303 was drawn up by Technical Committee ISO/TC 45, *Rubber and rubber products*, and circulated to the Member Bodies in March 1974.

It has been approved by the Member Bodies of the following countries :

Australia	France	Sweden
Belgium	Germany	Thailand
Brazil	Hungary	Turkey
Bulgaria	Italy	United Kingdom
Canada	New Zealand	U.S.A.
Chile	Poland	U.S.S.R.
Czechoslovakia	Romania	Yugoslavia
Egypt, Arab Rep. of	Spain	

No Member Body expressed disapproval of the document.



INTERNATIONAL STANDARD ISO 2303-1975 (E)

AMENDMENT SLIP
Published 1976-04-15

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

Rubber, isoprene (IR) — Non oil-extended, solution-polymerized types — Test recipe and evaluation of vulcanization characteristics

MODIFICATION TO FOREWORD (*Inside front cover*)

The ISO Member Body for the Netherlands has now approved this International Standard. The Netherlands should therefore be included in the list of countries whose Member Bodies have approved the document.



Published 1976-08-15

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

Rubber, isoprene (IR) — Non oil-extended, solution-polymerized types — Test recipe and evaluation of vulcanization characteristics

AMENDMENT 1

Amendment 1 to International Standard ISO 2303 was drawn up by Technical Committee ISO/TC 45, *Rubber and rubber products*. It was submitted directly to the ISO Council, in accordance with clause 6.12.1 of the Directives for the technical work of ISO.

Page 1

Sub-clause 3.1 : Replace the second note below the table by the following :

*** *N-Tert*-butyl sulphenamide. This shall be supplied in powder form having an initial ether- or ethanol-insoluble matter content of less than 0,3 % . The material shall be stored at room temperature in a closed container and the ether- or ethanol-insoluble matter shall be checked every 6 months. If this is found to exceed 0,75 %, the material shall be discarded or recrystallized."

UDC 678.7 : 547.315.2

Ref. No. ISO 2303-1975/A1-1976 (E)

Descriptors : elastomers, synthetic elastomers, polyisoprene, test specimens, tests, vulcanizing.

© International Organization for Standardization, 1976 •

Printed in Switzerland

Rubber, isoprene (IR) – Non oil-extended, solution-polymerized types – Test recipe and evaluation of vulcanization characteristics

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies standard materials, equipment and processing methods for evaluating vulcanization characteristics of non oil-extended, solution-polymerized isoprene rubbers (IR).

2 REFERENCES

ISO/R 37, *Determination of tensile stress-strain properties of vulcanized rubbers.*

ISO 1795, *Raw rubber in bales – Sampling.*

ISO 1796, *Raw rubber – Sample preparation.*

ISO 2393, *Rubber test mixes – Preparation, mixing and vulcanization – Equipment and procedures.*

ISO 3417, *Raw rubber – Measurement of curing characteristics with the oscillating disk curemeter.*¹⁾

3 TEST RECIPE FOR EVALUATION OF VULCANIZATION CHARACTERISTICS

3.1 Standard test formula

The standard test formula is given in the following table.

The materials shall be NBS²⁾ Standard reference materials as indicated in the table, or shall be in accordance with equivalent national standards.

Material	NBS Standard reference material number	Parts by mass
Isoprene rubber (IR)	—	100,00
Stearic acid	372	2,00
Zinc oxide	370	5,00
Sulphur	371	2,25
Oil furnace black (HAF)*	378	35,00
TBBS**	384	0,70
		Total 144,95

* The current Industry Reference Black may be used in place of NBS 378, but this may give slightly different results.

** *N-tert-butyl-2-benzothiazole sulphenamide* (powder form). This material must be stored under dry and cool conditions.

3.2 Procedure

3.2.1 Equipment and procedure

Equipment and procedure for the preparation, mixing and vulcanization shall be in accordance with ISO 2393.

3.2.2 Mill mixing procedure

The standard laboratory mill batch mass, in grams, shall be based on four times the formula mass. The surface

1) At present at the stage of draft.

2) National Bureau of Standards of the U.S.A.