International Standard ISO 2303

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

Rubber, polyisoprene (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

Second edition — 1983-07-01

UDC 678.7 : 547.315.2 **Ref. No. ISO 2303-1983 (E)**

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

Price based on 2 pages

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (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 authorized 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 developed by Technical Committee ISO/TC 45, *Rubber and rubber products.*

This second edition was submitted directly to the ISO Council, in accordance with clause 6.11.2 of part 1 of the Directives for the technical work of ISO. It cancels and replaces the first edition (i.e. ISO 2303-1975), which had been approved by the member bodies of the following countries:

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

No member body had expressed disapproval of the document.

Printed in Switzerland

Rubber, polyisoprene (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 polyisoprene rubbers (IR).

2 References

ISO 37, *Rubber, vulcanized — Determination of tensile stress-strain properties.*

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

ISO 1796, *Rubber, raw — Sample preparation.*

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

ISO 3417, *Rubber — Measurement of vulcanization characteristics with the oscillating disc curemeter.*

3 Test recipe

3.1 Standard test formula

The standard test formula is given in the table.

The materials shall be NBS[1] standard reference materials as indicated in the table, or shall be in accordance with equivalent national standards.

Table

Material	NBS standard reference material number	Parts by mass
Polyisoprene 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
		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. 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.

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 temperature of the rolls shall be maintained at 70 ± 5 °C throughout the mixing.

NOTE — All mill openings should be adjusted to maintain a good rolling bank at the nip of the rolls during mixing.

1) National Bureau of Standards of the USA.