International Standard 5794/2

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

Rubber compounding ingredients — Silica, precipitated, hydrated — Part 2 : Test recipe and determination of physical properties in rubber

Ingrédients de mélange du caoutchouc — Silices hydratées précipitées — Partie 2 : Formule d'essai et détermination des propriétés physiques dans le caoutchouc

First edition — 1982-11-15

STANDARDSISO.COM : Click to view the full PDF of ISO 5794-2:1982

UDC 546.284-31 : 678.023 **Ref. No. ISO 5794/2-1982 (E)**

Descriptors : rubber, styrene-butadiene rubber, silicon dioxide, tests, determination, physical properties, ingredients, test equipment.

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 5794/2 was developed by Technical Committee ISO/TC 45, *Rubber and rubber products*, and was circulated to the member bodies in February 1981.

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

Australia	Hungary	South Africa, Rep. of
Austria	India	Spain
Belgium	Italy	Sri Lanka
Brazil	Korea, Rep. of	Sweden
Canada	Mexico	Thailand
Czechoslovakia	Netherlands	United Kingdom
Egypt, Arab Rep. of	Poland	USA
France	Portugal	USSR
Germany, F. R.	Romania	

No member body expressed disapproval of the document.

STANDARDSISO.COM : Click to view the full PDF of ISO 5794-2:1982

© **International Organization for Standardization, 1982** ●

Printed in Switzerland

Rubber compounding ingredients — Silica, precipitated, hydrated — Part 2 : Test recipe and determination of physical properties in rubber

1 Scope and field of application

This part of ISO 5794 specifies the test recipe, equipment, procedure and test methods for determining the physical properties of precipitated hydrated silica in a styrene-butadiene rubber mix.

ISO 5794/1 describes methods for chemical analysis of precipitated hydrated silica, and ISO 5794/3 specifies its physical and chemical properties and properties in the rubber mix.

2 References

ISO 34, *Rubber, vulcanized — Determination of tear strength (trouser, angle and crescent test pieces).*

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

ISO 48, *Vulcanized rubbers — Determination of hardness (Hardness between* 30 *and* 85 IRHD).

ISO 289, *Rubber, unvulcanized — Determination of Mooney viscosity.*[1)]

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

ISO 3257, *Rubber compounding ingredients — Carbon black — Test recipe and method of evaluation in styrene-butadiene rubbers.*

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

ISO 5794, *Rubber compounding ingredients — Silica, precipitated, hydrated —*

Part 1 : Non-rubber tests.[2)]
Part 3 : Specification.[2)]

3 Test recipe

The standard test recipe is given in the following table.

Material	Reference material number	Parts by mass
SBR 1 500	EST[1)]	100,0
Silica		40,0
Zinc oxide	NBS 370d[2)]	3,0
Stearic acid	NBS 372g[2)]	1,5
TMTD[3)]	NBS 374c[2)]	2,0
TBBS[4)]	NBS 384[2)]	2,0
Sulphur	NBS 371f[2)]	0,4
Total		148,9

1) See ISO 3257. A European equivalent to NBS standard reference material 386 has been developed by ANIC. This EST (European Standard Type) rubber is an SBR 1 500 type using a rosin acid emulsifier and a staining stabilizer.

2) NBS standard reference material number (National Bureau of Standards of the USA). Alternatively the ingredients shall be in accordance with equivalent national standards.

3) Tetramethylthiuramdisulphide.

4) *N-tert*-butyl-2-benzothiazole sulphenamide.

4 Procedure

4.1 Equipment and procedure

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

4.2 Mill mixing procedure

The standard laboratory mill batch mass, in grams, shall be based on four times the test recipe mass. The surface temperature of the rolls shall commence at 30 ± 5 °C with proper cooling. The mass of the mixed batch shall not differ from the total mass of materials by more than 1,0 %.

1) At present at the stage of draft. (Revision of ISO/R 289-1963.)

2) At present at the stage of draft.

STANDARDSISO.COM : Click to view the full PDF of ISO 5794-2:1982