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Rubber compounding ingredients — Sulfur — Methods of test

Ingrédients de mélange du caoutchouc — Soufre — Méthodes d'essai



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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 3, *Raw materials (including latex) for use in the rubber industry*.

This fifth edition cancels and replaces the fourth edition (ISO 8332:2011), which has been technically revised. The main changes are the following:

- Change in the Scope to indicate that some of the properties can be determined by more than one test method.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Sulfur appears in three allotropic forms:

- a) rhombic;
- b) monoclinic;
- c) amorphous (insoluble in CS₂).

In rubber compounding practice, forms a) and c) are used. Both types may be used in their natural form or may be coated. The coating can be oil, or MgCO₃, or silica, or some other material that aids dispersion in the rubber compound. Sulfur is available in varying degrees of fineness.

Amorphous sulfur (insoluble sulfur) is usually produced in industry through the rapid cooling of molten sulfur and can also contain rhombic sulfur (soluble sulfur), as insoluble sulfur tends to revert back to the rhombic state on storage. Insoluble sulfur is important in the rubber industry as a vulcanizing agent since, when it is used, it can prevent rubber compounds from blooming during storage or during a production process without any adverse impact on the vulcanization process. Grades containing various amounts of insoluble sulfur are available to control blooming today (see [Annex A](#)).