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Rubber, vulcanized — Preparation of samples and test pieces —

Part 2: Chemical tests

Caoutchouc vulcanisé — Préparation des échantillons et éprouvettes —

Partie 2: Essais chimiques

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Foreword

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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 2, *Testing and analysis*.

This second edition cancels and replaces the first edition (ISO 4661-2:1987), which has been technically revised.

The main changes compared to the previous edition are as follows:

— updating of the format of the document in regard to Clauses 2 and 3;

— replacement of chlorinated solvents with less hazardous solvents in 4.3.

A list of all parts in the ISO 4661 series can be found on the ISO website.

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

When preparing samples of vulcanized rubber for chemical testing, care should be taken that any test portion is representative of the sample with respect to the property or constituent to be determined. Thus, if it is desired to deduce the composition of the original mix, any surface bloom should be incorporated, but if the final bulk composition is required, bloom should be removed preferably by using mechanical means. In the case of tests carried out with test pieces taken from a manufacturer's product, it might be necessary first to separate the desired vulcanized rubber from other possible components of the manufactured products, such as adjacent rubber compounds of different composition, metals, threads, tapes, and fabrics as well as coatings or veneers that cover it. This separation should be made using, whenever possible, mechanical means — blades, abrasive wheels, files, etc. — and avoiding any heat generation.

Rubber, vulcanized — Preparation of samples and test pieces —

Part 2: Chemical tests

1 Scope

This document specifies a method of preparing samples from vulcanized rubber for use in chemical tests.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1407:2011, *Rubber — Determination of solvent extract*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Preparation of samples

4.1 Soft vulcanized rubber

The sample shall be comminuted with scissors, a rotating rasp, a suitable grinder or by cryogenic crushing to pass a sieve with an approximately 1,7 mm opening. Alternatively, it shall be sheeted to a thickness not exceeding 0,5 mm by passing between cold, tightly closed rolls of a laboratory mill. The type of grinder or mill used is immaterial, provided that the sample does not become contaminated or unduly heated.

4.2 Ebonite

The sample shall be rasped to powder which will pass a sieve with an approximately 400 µm opening. The powder shall be treated with a magnet to remove any iron particles.

4.3 Rubberized composites

Where it is not possible to separate the rubber mechanically, the following procedure shall be carried out.

The rubber shall be separated by exposing it to the vapour only of a suitable solvent. For composites based on NR, SBR and BR, acetone or ETA (ethanol-toluene azeotrope) will be suitable solvents. For other types of rubber, refer to ISO 1407:2011 (Annex A) for suitable solvents.