
Rubber compounding ingredients — Stearic acid — Definition and test methods

Ingrédients de mélange du caoutchouc — Acide stéarique — Définition et 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8312 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*.

It cancels and replaces ISO 8312-1:1988, which has been technically revised.

Annexes A to K form a normative part of this International Standard. Annex L is for information only.

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WARNING — Persons using this International Standard should be familiar with normal laboratory practice. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

1 Scope

1.1 This International Standard defines stearic acid (including blends of stearic and palmitic acid) for use as a compounding ingredient in the rubber industry and specifies the test methods for describing its properties.

1.2 Classification of stearic acid and stearic acid/palmitic acid blends according to iodine value and typical chemical and physical properties for such materials for use in the rubber industry are given in annex L. This annex is given for information only.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 660:1996, *Animal and vegetable fats and oils — Determination of acid value and acidity.*

ISO 662:1998, *Animal and vegetable fats and oils — Determination of moisture and volatile matter content.*

ISO 935:1988, *Animal and vegetable fats and oils — Determination of titre.*

ISO 1042:1998, *Laboratory glassware — One-mark volumetric flasks.*

ISO 3596-1:1988, *Animal and vegetable fats and oils — Determination of unsaponifiable matter — Part 1: Method using diethyl ether extraction (Reference method).*

ISO 3596-2:1988, *Animal and vegetable fats and oils — Determination of unsaponifiable matter — Part 2: Rapid method using hexane extraction.*

ISO 3657:1988, *Animal and vegetable fats and oils — Determination of saponification value.*

ISO 3961:1996, *Animal and vegetable fats and oils — Determination of iodine value.*

ISO 4058:1977, *Magnesium and its alloys — Determination of nickel — Photometric method using dimethylglyoxime.*

ISO 5508:1990, *Animal and vegetable fats and oils — Analysis by gas chromatography of methyl esters of fatty acids.*

ISO 5509:—¹⁾, *Animal and vegetable fats and oils — Preparation of methyl esters of fatty acids.*

ISO 5794-1:1994, *Rubber compounding ingredients — Silica, precipitated, hydrated — Part 1: Non-rubber tests.*

ISO 6685:1982, *Chemical products for industrial use — General method for determination of iron content — 1,10-Phenanthroline spectrophotometric method.*

ISO 7780:1998, *Rubber and rubber latices — Determination of manganese content — Sodium periodate photometric methods.*

ISO 8053:1995, *Rubber and latex — Determination of copper content — Photometric method.*

ISO 15528:—²⁾, *Paints, varnishes and raw materials for paints and varnishes — Sampling.*

3 Term and definition

For the purposes of this International Standard, the following term and definition apply:

3.1

stearic acid (for use in the rubber industry)

a mixture of straight-chain saturated fatty acids composed substantially of stearic acid in the form $C_{17}H_{35}COOH$ and palmitic acid in the form $C_{15}H_{31}COOH$

4 Sampling

Sampling shall be carried out in accordance with ISO 15528, using a stainless-steel sampling device.

5 Physical and chemical properties

The physical and chemical properties shall be determined by the methods of test listed in Table 1.

1) To be published. (Revision of ISO 5509:1978)

2) To be published. (Revision of ISO 842:1984 and ISO 1512:1991)