BS ISO 5435:2017

BSI Standards Publication

Rubber compounding ingredients — Carbon black — Determination of tinting strength

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National foreword

This British Standard is the UK implementation of ISO 5435:2017. It supersedes BS ISO 5435:2008, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/50, Raw materials (including latex) for use in the rubber industry.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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Fifth edition
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Rubber compounding ingredients — Carbon black — Determination of tinting strength

Ingrédients de mélange du caoutchouc — Noir de carbone — Détermination du pouvoir colorant

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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 on 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 3, *Raw materials (including latex) for use in the rubber industry*.

This fifth edition cancels and replaces the fourth edition (ISO 5435:2008), which has been technically revised.

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

— throughout the text, ITRB has been replaced by ITRB or ITRB-2, since both tint references are in use;

— Clause 5 on reagents and its footnotes have been updated to reflect the materials which are currently available;

— a note has been added in Clause 5 to encourage the use of the specified materials only;

— in A.2.1 the type of materials used during the interlaboratory test programme (ITP) in 2005 has been added.

INTERNATIONAL STANDARD **ISO 5435:2017(E)**

Rubber compounding ingredients — Carbon black — Determination of tinting strength

WARNING — Persons using this document should be familiar with normal laboratory practice. This document 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

This document specifies a method for the determination of the tinting strength of carbon black relative to an industry tint reference black.

The method is based on the use of five different commercial instruments. Other instruments can be used if the test results for the standard reference blacks are within the control limits given in ASTM D4821.

NOTE The Densichron reflectometer and the Meeco Colormaster are no longer commercially available, but the procedures have been included for the benefit of those who still use these instruments.

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 1126, *Rubber compounding ingredients — Carbon black — Determination of loss on heating*

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:

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

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

4 Principle

An industry tint reference black (ITRB or ITRB-2) is mixed with zinc oxide and a liquid plasticizer. The paste obtained is mulled and homogenized, then spread as a layer of regular thickness. Its light reflectance is measured with a reflectometer sensitive to different shades of grey.

A test sample is mixed and its light reflectance measured in the same manner and, from the two light reflectance values, the relative tinting strength of the sample is determined.

5 Reagents

Use only reagents of recognized analytical grade and only distilled water or water of equivalent purity.

NOTE Users of this document are strongly encouraged to use only the materials mentioned below. Different types of oil or zinc oxide can lead to issues during preparation and drawdown of the pastes and can provide erroneous test results.