

Sampling and testing carbon black for use in the rubber industry —

Part 10: Method for determination of iodine adsorption number

(ISO title: Rubber compounding
ingredients — Carbon black —
Determination of iodine adsorption
number — Titrimetric method)

ICS 83.040.20

National foreword

This British Standard reproduces verbatim ISO 1304:1999 and implements it as the UK national standard. It supersedes BS 5293-10:1988 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/50, Natural and synthetic rubbers, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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This British Standard, having been prepared under the direction of the Sector Policy and Strategy Committee for Materials and Chemicals, was published under the authority of the Standards Policy and Strategy Committee on 6 November 2001

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INTERNATIONAL STANDARD

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Third edition
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Rubber compounding ingredients — Carbon black — Determination of iodine adsorption number — Titrimetric method

*Ingrédients de mélange du caoutchouc — Noir de carbone —
Détermination de l'indice d'adsorption d'iode — Méthode titrimétrique*



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.

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 1304 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 third edition cancels and replaces the second edition (ISO 1304:1985), which has been technically revised.

Annex A of this International Standard is for information only.

Rubber compounding ingredients — Carbon black — Determination of iodine adsorption number — Titrimetric method

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

This International Standard specifies a titrimetric method for the determination of the iodine adsorption number of carbon blacks for use in the rubber industry.

The iodine adsorption number is related to the surface area of a carbon black, and is generally in agreement with the nitrogen surface area. However, it is significantly depressed in the presence of a high content of volatile or solvent-extractable materials; the iodine adsorption number therefore does not always provide a measure of the specific surface area of a carbon black.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 385-1:1984, *Laboratory glassware — Burettes — Part 1: General requirements*.

ISO 648:1977, *Laboratory glassware — One-mark pipettes*.

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

ISO 1126:1992, *Rubber compounding ingredients — Carbon black — Determination of loss on heating*.

ISO TR 6809:1996, *Rubber compounding ingredients — Carbon black — Standard reference blacks*.

ISO/TR 9272:1986, *Rubber and rubber products — Determination of precision for test method standards*.

3 Principle

A test portion of carbon black is dried, weighed and mixed vigorously with a measured volume of standard iodine solution. The mixture is then centrifuged. A measured volume of the clear iodine solution is titrated with a standard solution of sodium thiosulfate. From this titration value and the mass of the test portion, the iodine adsorption number of the carbon black is calculated.