

INTERNATIONAL STANDARD

ISO
3858-1

Third edition
1990-09-01

Carbon black for use in the rubber industry — Determination of light transmittance of toluene extract —

Part 1: Rapid method

*Noir de carbone pour l'industrie du caoutchouc — Détermination de la
transmittance spectrale de l'extrait toluénique —*

Partie 1: Méthode rapide



Reference number
ISO 3858-1:1990(E)

AVA Documents
Document Sharing Hub

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 3858-1 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*.

This third edition cancels and replaces the second edition (ISO 3858-1:1983), of which it constitutes a minor revision.

ISO 3858 consists of the following parts, under the general title *Carbon black for use in the rubber industry — Determination of light transmittance of toluene extract*:

- *Part 1: Rapid method*
- *Part 2: Method for product evaluation*

© ISO 1990

All rights reserved. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Carbon black for use in the rubber industry — Determination of light transmittance of toluene extract —

Part 1: Rapid method

1 Scope

This part of ISO 3858 specifies a rapid method for the determination of the light transmittance of the toluene extract from carbon black by means of a spectrometer.

The method provides a qualitative indication of the degree of discoloration of toluene by carbon blacks for use in the rubber industry.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 3858. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 3858 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 471:1983, *Rubber — Standard temperatures, humidities and times for the conditioning and testing of test pieces*.

ISO 1126:1985, *Rubber compounding ingredients — Carbon black — Determination of loss on heating*.

3 Principle

Drying of the carbon black and weighing of a test portion. Mixing with a measured volume of toluene at room temperature. Filtration of the mixture and transfer of the filtrate to an absorption cell. Meas-

urement of the light transmittance of the filtrate against pure toluene at a set wavelength using a spectrometer.

4 Reagent

4.1 **Toluene**, analytical reagent grade.

5 Apparatus

Ordinary laboratory equipment and

5.1 **Analytical balance**, accurate to 0,01 g.

5.2 **Oven**, preferably of the gravity-convection type, capable of being maintained at $105\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ or at $125\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$.

5.3 **Spectrometer**, giving direct readings of light transmittance at 425 nm, and with a selector for continuous variation, for example a high-resolution prism or grating. The passband shall be within $\pm 10\text{ nm}$ (see note 1).

A constant-voltage transformer shall be inserted into the supply circuit if the voltage is known to vary by more than 4 V.

NOTE 1 Current types of colorimeter may differ in passband width and may therefore give different transmittance results. The results may be more comparable if such colorimeters are calibrated over the whole of the useful transmittance range against the same high-resolution spectrometer, for example one having a passband which is narrower than 2 nm at the 425 nm central wavelength, and the readings corrected using the calibration curve thus produced for each colorimeter.