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

*Ingrédients de mélange du caoutchouc — Noir de carbone —
Détermination de la perte à la chaleur*





COPYRIGHT PROTECTED DOCUMENT

© ISO 2015, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword	iv
1 Scope	1
2 Method 1: Gravity-convection oven method	1
2.1 Principle.....	1
2.2 Apparatus.....	1
2.3 Procedure.....	2
2.3.1 Precautions.....	2
2.3.2 Determination.....	2
2.4 Expression of results.....	2
3 Method 2: Moisture balance method	2
3.1 Principle.....	2
3.2 Apparatus.....	2
3.3 Procedure.....	3
3.4 Calculation.....	3
4 Method 3: Infrared irradiation method (rapid method)	3
4.1 Principle.....	3
4.2 Apparatus.....	3
4.3 Procedure.....	4
5 Differences between method 2 and method 3	5
6 Precision	5
7 Test report	5
Annex A (informative) Precision	6

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.

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 meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is 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 1126:2006), of which it constitutes a minor revision with the following changes:

- method 1 is stated as the preferred method in the scope;
- precision data were moved in an informative annex.

Rubber compounding ingredients — Carbon black — Determination of loss on heating

WARNING — Persons using this International Standard should be familiar with normal laboratory practice. This International 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 methods for determining the loss on heating of carbon black for use in the rubber industry. This loss on heating is due primarily to loss of moisture, but traces of other volatile materials may also be lost.

These methods are not applicable to treated carbon blacks which contain added volatile materials.

One of the following three methods is used:

- method 1: gravity-convection oven method;
- method 2: moisture balance method;
- method 3: infrared irradiation method (rapid method).

Method 1 is the preferred method.

2 Method 1: Gravity-convection oven method

2.1 Principle

A test portion of carbon black is heated for 1 h at a temperature of 125 °C in a weighing bottle. The weighing bottle plus contents is allowed to cool in a desiccator to room temperature and weighed, and the percentage loss on heating calculated.

Apparatus equivalent to that specified may be used provided the same results are obtained.

2.2 Apparatus

2.2.1 Oven, gravity-convection type, the temperature of which can be regulated to within ± 1 °C at 125 °C and the temperature uniformity of which is ± 5 °C or better.

2.2.2 Weighing bottle, squat-form, 30 mm in height and 60 mm in diameter, fitted with a ground-glass stopper.

When larger samples are required for other tests, use an open vessel of dimensions such that the depth of the black is not greater than 10 mm during conditioning.

2.2.3 Analytical balance, accurate to $\pm 0,1$ mg.

2.2.4 Desiccator.