

INTERNATIONAL  
STANDARD

45  
**ISO  
6809**

Second edition  
1989-03-01

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**Rubber compounding ingredients — Carbon  
black — Standard reference blacks**

*Ingrédients de mélange du caoutchouc — Noir de carbone — Noirs de référence*

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Reference number  
ISO 6809 : 1989 (E)

## 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 approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 6809 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*.

This second edition cancels and replace the first edition (ISO 6809 : 1984), of which it constitutes a minor revision.

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# Rubber compounding ingredients — Carbon black — Standard reference blacks

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## 1 Scope

This International Standard specifies the agreed values for the properties of standard reference blacks to be used in conjunction with methods of test for 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 listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1304 : 1985, *Rubber compounding ingredients — Carbon black — Determination of iodine adsorption number — Titrimetric method.*

ISO 4652 : 1981, *Rubber compounding ingredients — Carbon black — Determination of specific surface area — Nitrogen adsorption methods.*

ISO 4656-1 : 1985, *Rubber compounding ingredients — Carbon black — Determination of dibutylphthalate absorption number — Part 1 : Method using absorptometer.*

ISO 4656-2 : 1981, *Rubber compounding ingredients — Carbon black — Determination of dibutylphthalate absorption number — Part 2 : Method using plastograph or plasticorder.*

ISO 5435 : 1981, *Rubber compounding ingredients — Carbon black — Determination of tinting strength.*

ISO 6810 : 1985, *Rubber compounding ingredients — Carbon black — Determination of surface area — Surfactant adsorption methods.*

ISO 6894 : 1984, *Rubber compounding ingredients — Carbon black — Preparation of samples for determination of dibutylphthalate absorption number (compressed sample).*

## 3 Agreed values

The agreed values for the properties of standard reference blacks are given in table 1.

Table 1 — Agreed values for properties of standard reference blacks dried at 125 °C

Property	Unit	A-3 <sup>*)</sup>	B-3 <sup>*)</sup>	C-3 <sup>*)</sup>	D-3 <sup>*)</sup>	ITRB <sup>**)</sup>	IRB No. 5 <sup>***)</sup>	IRB No. 6 <sup>****)</sup>	Method of test
Iodine adsorption number	mg/g	22,5 ± 1	79,4 ± 1	111,4 ± 1	32 ± 1	—	—	80 ± 1	ISO 1304
C.T.A.B. surface area	m <sup>2</sup> /g	24,2 ± 1	79,9 ± 1	113 ± 1	40,6 ± 1	83	—	—	ISO 6810
Nitrogen surface area	m <sup>2</sup> /g	23,6 ± 1	79,5 ± 1	119,8 ± 1	37,9 ± 1	—	76,5 <sup>†)</sup>	—	ISO 4652
Dibutylphthalate absorption of compressed sample	cm <sup>3</sup> /100 g	58,9 ± 1	89,2 ± 1	102 ± 1	89 ± 1	—	—	87,2 ± 1	ISO 6894
Dibutylphthalate absorption	cm <sup>3</sup> /100 g	67 ± 1	101,2 ± 1	119,8 ± 1	129,8 ± 1 <sup>††)</sup>	—	—	100 ± 1	} ISO 4656-1 or ISO 4656-2
— mass used	g	25	20	20	20	—	—	20	
Tinting strength	% ITRB	42,4 ± 1,5	101,2 ± 1,5	116 ± 1,5	53,3 ± 1,5	100	—	99,2 ± 1,5	ISO 5435
Type	—	N 762	N 330	N 234	N 683	—	—	N 330	—

\*) Samples of A-3, B-3, C-3 and D-3 are available from Forcovon Products Inc., P.O. Box 1556, Humble, Texas 77338, USA.

\*\*) ITRB is available from Ashland Chemical Co., Columbus, Ohio 43216, USA.

\*\*\*) For information on the availability of IRB No. 5, contact the ISO/TC 45 Secretariat, BSI, 3 York St., Manchester M2 2AT, United Kingdom.

\*\*\*\*) Standard reference black IRB No. 6 is available from J.M. Huber Corporation, P.O. Box 2831, Borger, Texas 77338, USA, and <https://standards.itech.ai/catalog/standards/sist/1fb9014c-d9df-47ac-bb11-51244d33006698118> Degussa AG, Geschäftsbereich Chemie, Postfach 2644, D-6000 Frankfurt 1, Germany, F.R., or Degussa Ltd., Earl Road, Stanley Green, Handforth, Wilmslow, Cheshire SK9 3RL, United Kingdom.

†) Results obtained by classical B.E.T. method.

††) This value may be difficult to obtain.

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Descriptors : rubber, ingredients, carbon black, tests, reference materials.

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