International Standard 1435

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copie de classeur

Rubber compounding ingredients — Carbon black (pelletized) — Determination of ~~sieve residue~~ fines content

Ingrédients de mélange du caoutchouc — Noir de carbone (en granules) — Détermination de la teneur en matières fines

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

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.

International Standard ISO 1435 was developed by Technical Committee ISO/TC 45, *Rubber and rubber products*.

This second edition was submitted directly to the ISO Council, in accordance with clause 5.10.1 of part 1 of the Directives for the technical work of ISO. It cancels and replaces the first edition (i.e. ISO 1435-1975), which had been approved by the member bodies of the following countries :

Australia	India	Spain
Austria	Iran	Sweden
Brazil	Ireland	Switzerland
Canada	Israel	Turkey
Colombia	Italy	United Kingdom
Czechoslovakia	Japan	USA
Egypt, Arab Rep. of	Korea, Rep. of	USSR
France	Netherlands	Yugoslavia
Germany, F. R.	Poland	
Hungary	South Africa, Rep. of	

No member body had expressed disapproval of the document.

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Rubber compounding ingredients — Carbon black (pelletized) — Determination of ~~sieve residue~~ fines content

1 Scope and field of application

This International Standard specifies a method for the determination of the ~~sieve residue~~ fines content of all types of pelletized carbon black for use in the rubber industry.

2 Reference

ISO 565, *Test sieves — Woven metal wire cloth and perforated plate — Nominal sizes of apertures.*

3 Principle

Accurate weighing of a known mass of pelletized carbon black and sieving through a standard sieve with shaking and tapping. Measurement, as fines, of the amount of material passing through the sieve.

4 Apparatus

4.1 Mechanical sieve shaker, having the following characteristics :

— 300 ± 20 uniform rotary motions per minute;

— an automatic hammer that taps the sieve 150 ± 10 times a minute with a kinetic energy of about 0,6 J;

— an automatic timer.

4.2 Sieve, approximately 200 mm in diameter and 25 mm in height, to fit the mechanical sieve shaker (4.1). The sieve shall be of nominal aperture size 125 µm and shall comply with the requirements of ISO 565.

4.3 Bottom receiver pan.

4.4 Sieve cover.

4.5 Riffle sample splitter, with six or more parallel troughs on each side, designed to divide a sample of carbon black into two equal parts.

4.6 Balance, accurate to 0,1 mg.

5 Procedure

5.1 Obtain the test portion of carbon black as follows :

5.1.1 Pass the gross sample through the riffle sample splitter (4.5) to obtain a test portion of 22 to 28 g.

5.1.2 Weigh the test portion to the nearest 0,1 g.

5.2 Transfer the weighed test portion to the sieve (4.2), using other sieves as spacers if necessary. Cover the top and place the receiver pan (4.3) underneath. If spacers are used, the sieve containing the test material shall be placed at the bottom of the stack.

5.3 Allow the sieve assembly to shake for 5 min with the hammer operating.

Another duration of shaking may be chosen by agreement between the purchaser and the supplier.

5.4 Remove the sieve and receiver pan from the shaking device, and weigh the carbon black in the receiver pan to the nearest 0,1 mg.

6 Expression of results

The ~~sieve residue~~ fines content, expressed as a percentage by mass, is given by the formula

$$\frac{m_1}{m_0} \times 100$$

where

m_0 is the mass, in grams, of the test portion;

m_1 is the mass, in grams, of carbon black in the receiver pan.

Express the result to the nearest 0,1 %.