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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 15339-2008

Replacing GB/T 15339-1994

**Rubber compounding ingredients -- Carbon black -- Method of
evaluation in NBR (Acrylonitrile-Butadiene Rubber)**

橡胶配合剂 炭黑 在丁腈橡胶中的鉴定方法

(English Translation)

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Foreword

This revised standard adopts ASTM D3187-2006 "Standard Test Method for Rubber NBR (acrylonitrile butadiene rubber) Evaluation" (English Version).

This standard redrafted according to ASTM D3187-2006. This standard ASTM D3187-2006 listed in Appendix A the reg number table.

According to our country, for ease of use when using ASTM D3187-2006 made some changes. This standard ASTM D3187-

2006 The main differences are as follows.

--- Modify the standard name;

--- References and ASTM standard D412, D1646, D2084, D3182, D3896, D4483, D5289, D6204 without a corresponding Relationship of standards (Chapter 2 of this standard);

--- Increased our standard "GB/T 529, GB/T 531, GB/T 1681, GB/T 2449, GB/T 3185, GB 3778, GB/T 9103 "(Chapter 2 of this standard);

--- Delete "meaning and purpose" (in Chapter 3 D3187);

--- Cancellation IRM Code (ASTM D3187-2006 4.1) the technical specifications in Table 1, to the national standard number (this standard Chapter 3), to facilitate the use of standards;

--- Increased grades of nitrile rubber "NBR2707", in line with Country consistent standards (Chapter 3 standard), refine standard content;

--- Coated with sulfur did not use the 2% MgCO₃ (Chapter 3 of this standard, D3187 Table 1 Note B), in line with China's national conditions;

--- Open mill batch method factor "3.00" (Chapter 3 of this standard, D3187 Table 1 Note D), consistent with the previous version of the standard;

--- Increased "roll pitch 0.8mm, nitrile rubber material does not include broken roller 1." (This standard 6.2.2), refine standard content;

- Increased cutter requirements, easy user operation standard (this standard 6.2.2 Step 4) refinement of the standard content;
- Increase the "mixing process total time of (25 ± 0.5) min.", Given the fluctuation range of the operating time (this standard 6.2.2) Control Standards Operating time;
- Increase A law review rubber mass range $(436.4 \sim 440.8)$ g, easy to use standard (this standard 6.2.2.1, D3187 in 6.2.2.1);
- Will "and placed in a flat, dry, clean metal plate cooling" to "press GB/T 6038 provisions parking" (this standard 6.2.2.2);
- Increased tear strength is measured according to GB/T 529 was repeated using rectangular shaped specimens (this standard 7.4.2), consistent with the previous version of the standard;
- Increase in hardness is measured according to GB/T 531 performed (this standard 7.4.3), consistent with the previous version of the standard;
- Increase resilience measured according to GB/T 1681 were (this standard 7.4.5), consistent with the previous version of the standard;
- Increase the wear resistance was measured according to GB/T 1689 were (this standard 7.4.6), consistent with the previous version of the standard;
- Increase the "test result indicates" (Chapter 8 of this standard), raise the standard of operability;
- Remove Precision and Bias, precision data sheet (Chapter 8 ASTM D3187 in), otherwise the precision of national standards;
- Increasing the test report (Chapter 9 standard), in line with our standard content formats;
- Delete "key words", in line with our standard content formats.

This standard replaces GB/T 15339-1994 "formula and identification of black NBR." this standard and GB/T 15339-1994 version compared to the main changes are as follows.

- a) modify the standard name;
- b) increase the "Introduction" and "warning" language;
- c) Delete the text of the title of "People's Republic of China national standard" and "standard English name and number";
- d) increasing the reference standard introductions;
- e) increase the national standard GB/T 2941, GB/T 2449, GB/T 3185, GB 3778, GB/T 9103, GB/T 9869, GB/T 16584 (edition Chapter 2);
- f) Remove GB/T 1233, replaced by GB/T 9869;

- g) accelerant CBS to TBBS;
- h) Increase factors for the three batches of ingredients kneading method (Chapter 3 edition);
- Weighing Accuracy i) open mill are listed in the recipe table bet B (Chapter 3 edition, 1994 version 6.1.2);
- Weighing accuracy j) mixer are listed in the recipe table bet C (Excerpts Chapter 3);
- k) increase according to the provisions of GB 3778 sampling (Chapter 5 edition);
- l) the drying temperature was changed to carbon black (125 ± 2) °C (edition 5.2);
- m) Delete "mixing requirements" related incorporated "open mill method --- A" in (Excerpts 6.2,1994 Version 6.2);
- n) open mill mixing program list represents (this version 6.2.2);
- o) the increase "will open mill roll pitch adjusted to 0.8mm, nitrile rubber material does not include broken roller 1" (Excerpts of the order of 1 in 6.2.2);
- p) increase. "Note. There is obviously a powder mix material when allowed cutter, fell trays to ensure that all materials should be mixed into the rubber the "(Excerpts 6.2.2 Notes to Table 2, the version 6.2.3);
- q) The total time during mixing modified to (25 ± 0.5) min (after this edition 6.2.2 Table 2);
- r) increase the open mill review rubber mass range (436.4 ~ 440.8) g (Excerpts 6.2.2.1);
- s) increase miniature mixer method --- B (edition 6.3);
- t) increase mixer method --- C (edition 6.4);
- Determination u) to delete the initial curing characteristics by GB/T 1233 were (on Version 6.4.2);
- v) increase in rubber curing characteristics according to GB/T 9869 or GB/T 16584 Test (this version 7.3.2);
- w) open mill to mix vulcanization conditions. temperature (150 ± 1) °C, time 20min, 40min, 60min (edition 7.2, 1994 Version 7.2);
- x) mix materials to increase mixer vulcanization conditions. (150 ± 1) °C x 40min (edition 7.2);
- y) Delete "cutter model" (1994 Version 9.1 d));
- z) increase the "rubber-kneading method (A method, B method, C Act)" (Excerpts 9d));
- aa) increase in Appendix A.

Appendix A of this standard is an informative annex.

The standard proposed by China Petroleum and Chemical Industry Association.

This standard by the National Rubber and rubber products Standardization Technical Committee of carbon black Technical Committee (SAC/TC35/SC5) centralized.

1 Scope

This standard specifies the identification methods to identify black nitrile rubber.

This standard applies to all types of rubber carbon black.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 528 vulcanized rubber and thermoplastic rubber tensile stress strain properties (GB/T 528-1998, eqv ISO 37.

1994)

Determination of GB/T 529 vulcanized rubber or thermoplastic rubber tear strength (Trouser, angle and crescent test pieces) (GB/T 529-1999, eqv ISO 34-1:1994) Hardness test GB/T 531 rubber hardness pressed into the pocket (GB/T 531-1999, ISO 7619. 1986, IDT) GB/T 1232.1 - Part 1 uncured rubber measured by shearing disc viscometer. Mooney viscosity measurement (GB/T 1232.1-2000, eqv ISO 289-1:1994) GB/T 1681 vulcanized rubber resilience Determination (GB/T 1681-1991, eqv ISO 4662. 1986) GB/T 1689 Determination of abrasion resistance of vulcanized rubber (in Akron machine) GB/T 2449 industrial sulfur GB/T 2941 rubber physical test method for preparing and conditioning General Procedure (GB/T 2941-2006, ISO 23529:2004, IDT) GB/T 3185 zinc oxide (indirect method) GB 3778 carbon black for rubber GB/T 6038 Rubber test feed ingredients, mixing and vulcanization - Equipment and procedures (GB/T 6038-2006, ISO 2393-1994, MOD) GB/T 9103 industrial stearic GB/T 9869 Determination of rubber vulcanization characteristics (oscillating disc rheometer method) (GB/T 9869-1997, idt ISO 3417.

1991)

GB/T 16584 Determination of rubber vulcanization characteristics with no rotor rheometer (GB/T 16584-1996, eqv ISO 6502:1991) HG/T 2744 vulcanization accelerator NS