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

GB 3780.4-1983

Replacing GB/T 3780.4-2008

**Carbon black -- Part 4: Determination of oil absorption number
for compressed sample
(English Translation)**

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Foreword

GB/T 3780 "carbon black" is divided into the following sections.

- Part 1. Iodine absorption test method;
- Part 2. Determination of oil absorption;
- Part 4. Determination of compressed sample absorption value;
- Part 5. Determination of specific surface area CTAB method;
- Part 6. Determination of color strength;
- Part 7. Determination of pH value;
- Part 8. Determination of heating loss;
- Part 10. Determination of ash;
- Part 12. Inspection of impurities;
- Part 14. Determination of sulfur content;
- Part 15. Determination of toluene extractable transmittance;
- Part 17 - Indirect determination of particle size reflectance method;
- Part 18. Identification of natural rubber (NR);
- Part 21. Determination of sieve residue water washing method;
- Part 22. Calculation of process capability index using process control data;
- Part 23. Sampling and identification of fugitive carbon black or other environmental particles;
- Part 24. Determination of void volume.

This part is the fourth part of GB/T 3780.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This Part replaces GB/T 3780.4-2008 "carbon black Part 4. Determination of oil absorption of compressed samples," and GB/T 3780.4-2008 compared to the main technical changes are as follows.

- Added "GB/T 15338 carbon black test methods to determine the precision and bias" (see Chapter 2);
- Added instructions for reagents and materials (see 4.1, 4.3);
- The 2008 edition of Chapter 7 and Chapter 8 merged into Chapter 7 of this edition;
- Modify the description of "weighed sample quality" (see 7.2.2, 2008 version 8.2);
- Deleted "The indication of the hydraulic gauge is related to the inner diameter of the compression cylinder and the area of the plunger" (note of the 2008 edition of 8.3.1.4);
- Removed part of the operation of the B-type compressor program (2008 version 8.3.2.3, 8.3.2.4);
- Added "experimental data processing" (see Chapter 8);
- Increase the standard reference carbon black compression sample oil absorption (see Appendix A).

This part is proposed by China Petroleum and Chemical Industry Federation.

This part of the National Rubber and Rubber Products Standardization Technical Committee (SAC/TC35) centralized.

This part of the drafting unit. Hao Zhongyuan Black Chemical Research and Design Institute Co., Ltd., Hangzhou Zhongce Qingquan Industrial Co., Ltd., Anhui Jia Tong passenger Meridian Tire Co., Ltd., Shandong Linglong Tire Co., Ltd., Golden Technology Co., Ltd. can.

1 Scope

This section GB/T 3780 specifies the carbon black sample compression and determination of compressed samples of oil absorption test method.

This section applies to rubber with carbon black.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 3778 carbon black rubber Carbon black Part 2 Determination of oil absorption GB/T 6003.1 Test sieves - Technical requirements and testing - Part 1. Wire mesh sieve test sieves GB/T 8170 rounded repair rules and limit values of the representation and judgment GB/T 15338 carbon black test methods to determine the precision and bias

3 Principle

A certain amount of dried carbon black sample was compressed four times in a compression cylinder at a pressure of 165 MPa and the oil absorption was measured.

4 Reagents and materials

4.1

Dibutyl phthalate (DBP), the performance should meet the standard reference standard black carbon measured (see Appendix A Table A.1), and should pay attention to the following provisions.

a) DBP oil, paraffin oil or epoxidized sunflower oil may be used for the N series granulated carbon black listed in the GB/T 3778 classification system.

b) Some special carbon black compression oil absorption (COAN) test, the use of paraffin oil or epoxidized sunflower oil testing and testing using DBP oil Compared with the test results may be different.

c) Arbitration tests should use DBP oil.

4.2

Liquid paraffin, its performance should meet the standard reference value measured carbon black (see Table A.1).

4.3

epoxidized sunflower oil, should be stored at a temperature of 7 °C ~ 30 °C.

4.4

standard reference carbon black.

5 Equipment

5.1

analytical balance, sub-degree value of 0.01g, 1mg.

5.2

oven, gravity convection type, the temperature can be controlled at (125 ± 2) °C.