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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 23656-2016

Replacing GB/T 23656-2009

Rubber compounding ingredients -- Determination of surface area for silica, precipitated, hydrated -- CTAB method

橡胶配合剂 沉淀水合二氧化硅比表面积的测定 CTAB法

(English Translation)

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Foreword

This standard is drafted in accordance with the rules given in GB/T 1.1-2009.

The standard instead of GB/T 23656-2009 "rubber compound precipitation of hydrated silica specific surface area determination CTAB method" Compared with GB/T 23656-2009, the main technical changes are as follows.

--- modified the "requirements of the amount of requirements" (see Table 1, 2009 version of Table 1).

This standard refers to ISO 5794-1.:2010 "Rubber compounding agent precipitation of hydrated silicon dioxide Part 1. Non-rubber test" (English version) the draft of Appendix G is not equivalent to ISO 5794-1.:2010.

This standard is proposed by the China Petroleum and Chemical Industry Association.

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

The drafting unit. Jinneng Technology Co., Ltd., China Rubber Group Carbon Black Industry Research and Design Institute, Anhui Jiatong Tire Investment Co., Ltd.

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1 Scope

This standard specifies a method for the determination of the specific surface area of precipitated hydrated silica with cetyltrimethylammonium bromide (CTAB).

This standard applies to precipitated hydrated silicon dioxide.

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2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article Pieces. For undated references, the latest edition (including all modifications) applies to this document.

Representation and Judgment of Numerical Correction Rule and Limit Value of GB/T 8170 GB/T 12808 Laboratory glass instruments Single line suction pipette HG/T 3061 Rubber Composites Precipitated Hydrated Silica (HG/T 3061-2009, ISO 5794-1.:2005, MOD) HG/T 3065 Rubber compounding agent Precipitation Determination of heating reduction of hydrated silicon dioxide (HG/T 3065-2008, ISO 787-2.

1981, MOD)

3 Principle

A solution of cetyltrimethylammonium bromide (CTAB) was added to the precipitated hydrated silica sample to be tested, by mechanical oscillations or by ultrasonic Electromagnetic dispersion to achieve adsorption equilibrium, sample adsorption CTAB to form a suspension, the suspension by centrifugal separation or pressure filtration, with turbidity titration side the amount of CTAB not adsorbed by the sample was measured and the specific surface area of the dried sample was calculated.

4 Reagents and Materials

4.1

Buffer solution at pH 9.6. 3.101 g of boric acid and 3.708 g of potassium chloride were added to a 1000 mL volumetric flask equipped with 500 mL of water, and then add bimetal 1mol/L sodium hydroxide solution 36.85mL. After the solid was completely dissolved, add water to the volumetric flask to 1000 mL and then homogenized with a magnetic stirrer.

4.2

Cetyltrimethylammonium bromide (CTAB) solution, c (C19H42BrN) = 0.0151 mol/L. In a solution containing 350 mL of buffer solution and about 500 mL of water in a 1000 mL volumetric flask, dissolve 5.50 g of CTAB (purity & gt; 99%). Add water to the mark, the solution warm to 27 ° C to 37 ° C to facilitate dissolution. The solution was cooled to 25 ° C ± 2 ° C before use.

It is not advisable to store the solution in an environment below 22 ° C or below 22 ° C. Otherwise, it will cause CTAB to slowly crystallize.

4.3

Sodium sulfosuccinate dioctyl ester (OT) solution, c (C20H37NaO7S) = 0.00389 mol/L. 1.730 g of phenol was dissolved in 1000 mL of the water, stir with a magnetic stirrer 48h.

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Placed for 12 days and then calibrated to use.

Solution cover tightly sealed, and placed in a cool place, because the OT solution prone to slow biological decomposition, the solution should not exceed the storage

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