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

GB/T 15344-2020

Replacing GB/T 15344-2012

Methods for physical test of talc

滑石物理检验方法

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1 Scope

GB/T 15344-2020 is the Chinese national standard on methods for physical test of talc, in the field of mining and minerals. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 31 March 2020 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 February 2021. Classification: ICS 73.080, CCS Q64. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This Standard specifies the methods for physical test of talc moisture, dust content, pH value of water extract, sedimentation velocity, true density, fineness of grinded talc powder, wet whiteness, bulk density, fineness of fine and ultrafine talc powder, magnet extract, apparent density, scraper fineness, oil absorption and burnt whiteness, etc. This Standard is applicable to natural talc lumps and talc powder.

2 Normative References

The following documents are indispensable to the application of this document. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 2010 Method of Sampling and Sample Preparation of Talc in Bulk

GB/T 5950 Method for Measurement of Whiteness of Building Materials and Non-metal Mineral Products

GB/T 6003.1 Test Sieves - Technical Requirements and Testing - Part 1: Test Sieves of Metal Wire Cloth

GB/T 8170 Rules of Rounding off for Numerical Values & Expression and Judgement of Limiting Values GB/T 15342 Talc Powder

GB/T 19077 Particle Size Analysis - Laser Diffraction Methods DZ/T 0118 The Specifications of the Standard Sieves Vibrating Screen for Laboratory

3.1 Sampling

3.1.1 The sampling of talc lumps shall be conducted in accordance with GB/T 2010.

3.1.2 The sampling of talc powder shall be conducted in accordance with GB/T 15342.

4.3 Method for pH Value Determination of Water Extract of Talc Powder

4.3.1 Materials and apparatuses The materials and apparatuses required for the pH value determination of water extract of talc powder are as follows:

- a) Balance: the division value is not greater than 0.0001 g;
- b) Temperature-adjustable electric furnace with asbestos net;
- c) Acidity meter: the accuracy is 0.02;
- d) Beaker: 250 mL; 100 mL;
- e) Measuring cylinder: 100 mL;
- g) Filter paper: slow speed;
- h) Distilled water: remove carbon dioxide through boiling; cool it down to room temperature; pH value is 6.8 ~ 7.2.

4.3.2 Test procedures

4.3.2.1 Weigh-take about 5 g of sample (accurate to 0.0001 g); place it in a 250 mL beaker.

4.3.2.2 Pour 10 mL of distilled water into the beaker. Use a glass rod to carefully stir it, so as to completely wet the sample. Then, pour in 90 mL of distilled water; mark the height of the liquid level on the outer wall of the beaker.

4.3.2.3 Place the beaker on the electric furnace to boil it, then, adjust the temperature control knob of the electric furnace to below 300 W. Slightly boil it at a low temperature for 5 min (during the process of slight boiling, keep stirring it and supplement the amount of water lost in evaporation); remove it, and cool it down to room temperature. Use a pH meter to determine the pH value of the suspension liquid.

4.3.3 Result expression and tolerances Take the arithmetic mean value of two parallel test results as the report value. In addition, in accordance with GB/T 8170, round it off to two decimal places. If the absolute error of two parallel test results is greater than 0.2, then, the samples shall be re-prepared for the determination.

4.4 Method for Sedimentation Velocity of Talc Powder

4.4.1 Materials and apparatuses addition, in accordance with GB/T 8170, round it off to one decimal place.

4.4.4 Tolerances The absolute error of two parallel test results shall be not greater than 2 mL. Otherwise, the determination shall be re-conducted.

4.5 Method for True Density Determination of Talc Powder

4.5.1 Materials and apparatuses The materials and apparatuses required for the determination of true density of talc powder are as follows:

- a) Balance: the division value is not greater than 0.0001 g;
- b) Electric-heated thermostatic water bath: the sensitivity is $\pm 1\text{ }^{\circ}\text{C}$;
- c) Temperature-adjustable electric furnace with asbestos net;
- d) Vacuum desiccator with vacuum air pump;
- e) Pycnometer: 50 mL;
- h) Distilled water.

4.5.2 Test procedures

4.5.2.1 Vacuuming method with pycnometer (Method A) 4.5.2.1.1 Use distilled water to fill a clean and dry pycnometer with an already-known mass (if there are bubbles in the pycnometer, remove them). 4.5.2.1.2 Put on the cap of the pycnometer filled with liquid; place it in a $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ thermostatic water bath for

0.5 h (when the liquid level in the capillary tube of the pycnometer drops, the same liquid shall be added in time to fill it up). Take out the pycnometer; use filter paper to quickly dry the exterior part of the pycnometer. However, DO NOT wipe off water on the capillary end. Weigh it (accurate to 0.0001

g) to obtain m_3 . 4.5.2.1.3 Pour out the distilled water from the pycnometer, then, dry it again. Fill the pycnometer with kerosene; repeat the steps of 4.5.2.1.2 to obtain m_4 . 4.5.2.1.4 After washing and drying the pycnometer again, weigh-take about 5 g of the dried sample, put it into the pycnometer. Put on the cap, then, weigh it (accurate to 4.5.2.2.3 Remove the pycnometer; cool it down to room temperature. Then, pour in freshly boiled distilled water that is cooled down to room temperature, so that the water level in the bottle is 2 mm ~ 3 mm below the mouth of the pycnometer. Slowly put on the stopper (at this moment, the capillary shall be filled with water, but there shall be no bubbles); quickly dry the exterior part of the pycnometer. However, DO NOT wipe off water on the capillary end. Weigh it (accurate to 0.0001

g) to obtain m_8 . 4.5.2.2.4 Pour out the sample and water in the pycnometer. After washing it, pour in freshly boiled distilled water that is cooled down to room temperature, so that the water level in the bottle is 2 mm ~ 3 mm below the mouth of the pycnometer. Use a stopper to plug it; quickly dry the exterior part. DO NOT wipe off water on the capillary end. Weigh it (accurate to 0.0001

g) to obtain m_3 . Record the temperature of the water at room temperature. 4.5.2.2.5 The density 1 [expressed in (g/cm³)] of the sample shall be calculated in accordance with Formula (5): Where, 2

---water density at $t\text{ }(^{\circ}\text{C})$, expressed in (g/cm³), see Appendix A; m_8

---the mass of the pycnometer and the distilled water and the sample, expressed in (g).