

ICS 73.080

CCS Q 69



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

GB/T 27798-2011

Organoclay

有机膨润土

Issued on: December 30, 2011

Implemented on: August 1, 2012

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and Definitions

Foreword

This standard is based on GB/T 1.1-2009 given rule drafting. The standard proposed by China Building Materials Federation. The standard and non-metallic mineral products by the National Standardization Technical Committee (SAC/TC406) centralized. This standard was drafted. Walter Zhejiang New Material Co., Zhejiang Feng Hong New Materials Co., Ltd., Zhejiang University, a non-Xianyang Ore Research and Design Institute Limited. The main drafters of this standard. Wangchun Wei, Lin Hongfu, Hu Xiurong, Lei Jianbin.

Organobentonite

1 Scope

China's national product standard for organoclay. It specifies the terms and definitions, the classification, the requirements, the test methods, the inspection rules and the marking, packaging, transport and storage of the bentonite modified by intercalation with a quaternary ammonium surfactant. Bentonite swells in water and does nothing useful in oil. Organoclay is what turns it round: the sodium or calcium ions between the clay platelets are exchanged for long-chain quaternary ammonium cations, whose hydrocarbon tails point outwards, so the surface of every platelet becomes organophilic. Put into an organic liquid, the platelets separate and build a weak three-dimensional structure through the liquid, and the liquid becomes a gel that thins under shear and rebuilds when the shear stops. That thixotropic behaviour is the product. It is used to thicken and to suspend: in oil-based drilling fluids, where it carries cuttings up the annulus and holds weighting material in suspension when circulation stops; in paints, inks, greases, sealants and adhesives, where it prevents settling in the can and sagging on the wall while still allowing the material to be brushed or sprayed. The standard classifies the product by the base clay and the modifier, and specifies the properties that decide whether it will do that job: the gel formation and the viscosity developed in a stated organic liquid, the fineness and the particle size distribution, the moisture, the ignition loss, the pH and the organic content. The test methods are as much a part of the specification as the requirements, since a gel strength means nothing without the liquid, the concentration, the dispersion energy and the polar activator used to develop it. Issued on 30 December 2011 and in force since 1 August 2012.

This standard specifies the terms and definitions of organic bentonite, classification, requirements, test methods, inspection rules and signs, packaging, transportation and storage. This standard applies to bentonite by quaternary ammonium salt surfactant intercalation modified and made of organic bentonite.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 262-2010 Petroleum products and hydrocarbon solvents aniline point and mixed aniline point determination

GB/T 678 chemical reagent alcohol (ethanol)

GB/T 6003.1 Test sieves of metal wire cloth Laboratory use specifications and test methods
GB/T 6682 Analysis

GB/T 12590 Chemical reagents Butanol

GB/T 15894 chemical reagents petroleum ether

GB/T 16494 Chemicals xylene

GB/T 19077.1 laser diffraction particle size analysis - Part 1. General JY/T 009 rotating anode X-ray diffraction of polycrystalline General Non-Newtonian rheological properties of the material test methods ASTM D2196-2010 rotary (Brookfield) viscometer.

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Requiring high speed shear dispersion and adding an alcohol activating agent dispersing agent to form a high viscosity gel organobentonites applicable solvent.

3.2 In suitable solvents in a high shear dispersion but without the need to add a small amount of alcohol activation agent dispersant can form a thixotropic colloidal organic expansion Bentonite.

3.3 Without high-speed shear dispersion and adding an alcohol activating agent dispersant may form a uniform dispersion of bentonite in suitable solvent.

3.4 Apparent viscosity apparentviscosity A non-Newtonian fluid shear stress at a shear stress (σ) and the shear rate ($\dot{\gamma}$) is the ratio of the shear flow in the process.