

API Specification 13A 18th Edition, August 2010

Specification for Drilling Fluids – Specifications and Testing

2.3 BENTONITE

Product:	Bentonite
Grade:	Drilling Grade
Product Description:	API Specification 13A – 9.1.1 Drilling-grade bentonite is a naturally occurring clay containing the clay minerals of smectite. It can also contain accessory minerals, such as quartz, mica, feldspar and calcite.
Product Physical Requirements:	API Specification 13A – 9.1.2 Drilling-grade bentonite shall be deemed to meet the requirements of this International Standard if a composite sample representing no more than one day's production conforms to the physical specifications of Table 8, represents the product produced and is controlled by the manufacturer.

Table 8 – Bentonite physical specifications

Requirement	Standard
Suspension properties:	
Viscometer dial reading at 600 r/min	Minimum 30
Yield point/plastic viscosity ratio	Maximum 3
Filtrate volume	Maximum 15,0 ml
Residue of diameter greater than 75 µm	Maximum mass fraction 4,0 %

Note: General Shipping & Marking Requirements are listed in the General Requirements Section of this Purchasing Guideline

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Product:	Bentonite
Grade:	OCMA
Product Description:	API Specification 13A – 11.1.1 OCMA-grade bentonite is a montmorillonite-based clay which, by nature of its source, cannot meet all aspects of Clause 9. This bentonite may have been treated with soda ash, polymer or other chemicals to improve suspension property performance.
Product Physical Requirements:	API Specification 13A – 11.1.2 OCMA-grade bentonite shall be deemed to meet the requirements of this International Standard if a composite sample representing no more than one day's production conforms to the physical specifications of Table 10, represents the product produced and is controlled by the manufacturer.
Product Specific Marking Requirements:	API Specification 13A – 11.1.3 Manufacturers and licensees shall provide appropriate markings on the container in block letters at least 6 mm (0,25 in) high below the name of the material, the type of treatment of the bentonite with polymer, soda ash or other material.

Table 10 – OCMA grade bentonite physical specifications

Requirement	Standard
Suspension properties:	
Viscometer dial reading at 600 r/min	Minimum 30
Yield point/plastic viscosity ratio	Maximum 6
Filtrate volume, millilitres	Maximum 16,0
Residue of diameter greater than 75 µm	Maximum 2,5 % mass fraction

Note: General Shipping & Marking Requirements are listed in the General Requirements Section of this Purchasing Guideline

Testing Product: Test calibration bentonite

Grade: Test calibration

Product Information: API Specification 13A – Annex B.1.2

Calibration barite and test calibration bentonite are available through the API offices (see 4.2.1) for use by laboratories to determine their test precision.

Note: Test calibration barite can also be found in the Additional Requirements Section of this Purchasing Guideline

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2.4 NON-TREATED BENTONITE

Product: Non-treated Bentonite

Grade: Drilling Grade

Product Description: API Specification 13A – 10.1.1

Drilling-grade non-treated bentonite clay, composed principally of the mineral smectite, is dried and ground, but not chemically treated. It can also contain accessory minerals, such as quartz, mica, feldspar and calcite.

Product Physical Requirements: API Specification 13A – 10.1.2

Drilling-grade non-treated bentonite shall be deemed to meet the requirements of this International Standard if a composite sample representing no more than one day's production conforms to the physical specifications of Table 9, represents the product produced and is controlled by the manufacturer.

Table 9 – Non-treated bentonite physical specifications

Requirement	Standard
Suspension properties:	
Yield point/plastic viscosity ratio	Maximum 1,5
Dispersed plastic viscosity, millipascal-seconds	Minimum 10
Dispersed filtrate volume, millilitres	Maximum 12,5

Note: General Shipping & Marking Requirements are listed in the General Requirements Section of this Purchasing Guideline