

## O58900 Bentonite

CAS No.: 1302-78-9  
EINECS: 215-108-5

Bentonite is an absorbent aluminium phyllosilicate generally impure clay consisting of montmorillonite. It expands when wet, absorbing 5 to 6 of its dry mass in water.

Bentonite is a useful adsorbent of ions in solution as well as fats and oils. The absorbent clay was given the name bentonite by an American geologist – after the Benton Formation (a geological stratum, at one time Fort Benton) in Montana's Rock Creek area.

### Application:

- Used to decolorize mineral, animal and vegetable oils, fats and waxes.
- Used to increase the resistance of emulsions, and for stretching soaps (soaps containing bentonite are especially suitable for oily dirt).
- Used as filling agent and heat isolator, to improve some rheological or sealing performance in geoenvironmental applications.
- Used in purifying waste oil (bentonite absorbs tarry impurities).
- Used in the manufacture of tooth paste and dry-cell batteries.
- Used to thicken water colors.
- Used as binding agent for synthetics and in the steelmaking industry.
- Used for the manufacture of ceramic products.

Percentage when used as thickening agent in oil colors: 1 – 5 % Bentonite

### Physical Properties

Color / Form	Beige-grey / powder
Sieve residue, 63 $\mu$	10 - 40 %
Bulk density	ca. 750 kg/m <sup>3</sup>
Humidity content	max. 14 %
Methylene blue absorption	290 $\pm$ 40 mg/g
Enslin-Neff	min. 250 %
Degree of swelling	min. 6 ml / 2g
pH Value	8.5 $\pm$ 1
Sieve residue (63 $\mu$ m, dry)	10 – 40 %

### Mineral Composition

Main mineral: Montmorillonite  
Secondary minerals: Quartz: ca. 5 – 9 %  
Mica: ca. 1 – 6 %  
Feldspar: ca. 1 – 4 %

## Chemical Analysis

SiO <sub>2</sub>	53 – 60 %
Al <sub>2</sub> O <sub>3</sub>	16 – 20 %
TiO <sub>2</sub>	0.3 – 0.4 %
Fe <sub>2</sub> O <sub>3</sub>	4 – 7 %
MgO	3.5 – 4.5 %
CaO	1.5 – 4.0 %
Na <sub>2</sub> O	0.3 – 1.8 %
K <sub>2</sub> O	1.0 – 2.2
MnO <sub>2</sub>	0.14 %
Loss on ignition (1000°C)	8 – 13 %
Fluoride	0.09 %