

# MATERIAL SAFETY DATA SHEET



MILGEL®

Drilling Fluids

## 1. Product and Company Identification

**Material name** MILGEL®  
**Chemical name** Bentonite  
**Applications** VISCOSIFIER  
**Supplier** Baker Hughes Drilling Fluids  
2001 Rankin Rd.  
Houston, TX 77073  
Emergency telephone number 713-439-8900

## 2. Composition / Information on Ingredients

Components	CAS #	Percent
CRYSTALLINE SILICA, QUARTZ	14808-60-7	< 6
Non-hazardous and other components below reportable levels		> 90

## 3. Hazards Identification

**Emergency overview** Harmful in contact with eyes. Prolonged exposure may cause chronic effects. Contact with this material can cause irritation to the skin, eyes and mucous membranes.

**OSHA regulatory status** However exposure limits detailed in Section 8 should be observed.

**Potential health effects**

**Eyes** Dust or powder may irritate eye tissue. Eye contact may result in corneal injury.

**Skin** Health injuries are not known or expected under normal use. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

**Inhalation** Inhalation of dusts may cause respiratory irritation.

**Ingestion** Health injuries are not known or expected under normal use.

**Target organs** Eyes. Lungs. Respiratory system.

**Chronic effects** Chronic lung disease (silicosis) and/or lung cancer may result from prolonged/repeated breathing of the dust of this material. Shortness of breath.

**Signs and symptoms** Cough. Discomfort in the chest. Shortness of breath. Conjunctivitis. Corneal damage. Chronic lung disease (silicosis) and/or lung cancer may result from prolonged/repeated breathing of the dust of this material.

## 4. First Aid Measures

**First aid procedures**

**Eye contact** Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.

**Skin contact** Wash off skin with soap and water. Get medical attention if irritation develops or persists.

**Inhalation** Move to fresh air. If breathing is difficult, give oxygen. Call a physician if symptoms develop or persist.

**Ingestion** If swallowed, rinse mouth with water (only if the person is conscious). If ingestion of a large amount does occur, seek medical attention.

**Notes to physician** Symptoms may be delayed.

**General advice** Call a physician if symptoms develop or persist. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. If you feel unwell, seek medical advice (show the label where possible).

## 5. Fire Fighting Measures

**Flammable properties** Dusts at sufficient concentrations can form explosive mixtures with air.

**Hazardous combustion products** Product is not considered combustible.

**Extinguishing media**

**Suitable extinguishing media** Use any media suitable for the surrounding fires.

## Protection of firefighters

### Protective equipment for firefighters

Firefighters should wear full protective clothing including self contained breathing apparatus.

## 6. Accidental Release Measures

<b>Personal precautions</b>	Surfaces may become slippery after spillage. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
<b>Evacuation procedures</b>	Keep unnecessary personnel away. Stay upwind.
<b>Environmental precautions</b>	Do not flush into surface water or sanitary sewer system.
<b>Methods for containment</b>	Stop the flow of material, if this is without risk. Contain the discharged material.
<b>Methods for cleaning up</b>	Vacuum or sweep up material and place in a disposal container. Avoid the generation of dusts during clean-up. Do not flush with water. Forms smooth, slippery surfaces on floors, posing an accident risk.

## 7. Handling and Storage

<b>Handling</b>	Wear personal protective equipment. Minimize dust generation and accumulation. In case of insufficient ventilation, wear suitable respiratory equipment.
<b>Storage</b>	Keep in a dry, cool and well-ventilated place. Keep container tightly closed.

## 8. Exposure Controls / Personal Protection

### Exposure guidelines

#### ACGIH - Threshold Limits Values - Time Weighted Averages (TLV-TWA)

CRYSTALLINE SILICA, 14808-60-7 0.05 Mg/m<sup>3</sup> TWA (respirable fraction)  
QUARTZ

#### ACGIH - Threshold Limits Values - TLV Basis - Critical Effects

CRYSTALLINE SILICA, 14808-60-7 silicosis; lung function; lung fibrosis; cancer  
QUARTZ

<b>Engineering controls</b>	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
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### Personal protective equipment

<b>Eye / face protection</b>	Wear dust goggles.
<b>Skin protection</b>	Use of protective coveralls and long sleeves is recommended. Use of impervious boots is recommended.
<b>Hand protection</b>	Rubber or plastic gloves.
<b>Respiratory protection</b>	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
<b>General hygiene considerations</b>	Do not breathe dust. Wash hands before breaks and immediately after handling the product.

## 9. Physical and Chemical Properties

<b>Appearance / Color / Form</b>	Powder. Beige. Solid.
<b>Odor</b>	Odourless.
<b>Clarity</b>	Not available
<b>Odor threshold</b>	Not available
<b>Physical state</b>	Solid
<b>pH</b>	9.5 (10% aq. solution)
<b>Melting point</b>	2930 °F (1610 °C) estimated
<b>Freezing point</b>	Not available
<b>Boiling point</b>	4046 °F (2230 °C) estimated
<b>Flash point</b>	Non-flammable
<b>Evaporation rate</b>	Not available
<b>Flammability limits in air, lower, % by volume</b>	Not available
<b>Flammability limits in air, upper, % by volume</b>	Not available
<b>Vapor pressure</b>	Not available
<b>Vapor density</b>	Not available
<b>Specific gravity</b>	2.6
<b>Relative density</b>	Not available

<b>Solubility</b>	Insoluble in water.
<b>Octanol/H2O coeff</b>	Not available
<b>Auto-ignition temperature</b>	Not available
<b>Decomposition temperature</b>	Not available
<b>Bulk density</b>	2700 kg/m <sup>3</sup> @ 20 Deg C

## 10. Chemical Stability and Reativity Information

<b>Chemical stability</b>	Stable at normal conditions.
<b>Conditions to avoid</b>	None known.
<b>Incompatible materials</b>	None known.
<b>Hazardous decomposition products</b>	None known.
<b>Possibility of hazardous reactions</b>	Will not occur.

## 11. Toxicological Information

### Component analysis - LD50

#### Toxicology Data - Selected LD50s and LC50s

CRYSTALLINE SILICA, 14808-60-7 Oral LD50 Rat: 500 mg/kg  
QUARTZ

**Chronic effects** Chronic lung disease (silicosis) and/or lung cancer may result from prolonged/repeated breathing of the dust of this material.

### Carcinogenicity

#### ACGIH - Threshold Limits Values - Carcinogens

CRYSTALLINE SILICA, 14808-60-7 A2 - Suspected Human Carcinogen  
QUARTZ

#### NTP (National Toxicology Program) - Report on Carcinogens - Known Carcinogens

CRYSTALLINE SILICA, 14808-60-7 Known Carcinogen  
QUARTZ

## 12. Ecological Information

<b>Ecotoxicity</b>	This material is not expected to be harmful to aquatic life.
<b>Persistence / degradability</b>	The methods for determining the biological degradability are not applicable to inorganic substances.
<b>Bioaccumulation / accumulation</b>	Not expected to bioaccumulate.
<b>Mobility in environmental media</b>	This material is insoluble in water and will sink in the marine environment.

## 13. Disposal Considerations

**Disposal instructions** This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Can be landfilled, when in compliance with local regulations.

## 14. Transport Information

### Department of Transportation (DOT) Requirements

Not regulated as dangerous goods.

### IATA

Not regulated as dangerous goods.

### IMDG

Not regulated as dangerous goods.

## 15. Regulatory Information

**US federal regulations** All components are on the U.S. EPA TSCA Inventory List.

OSHA Process Safety Standard: This material is not known to be hazardous by the OSHA Highly Hazardous Process Safety Standard, 29 CFR 1910.119.

CERCLA/SARA Hazardous Substances - Not applicable.

#### NTP (National Toxicology Program) - Report on Carcinogens - Known Carcinogens

CRYSTALLINE SILICA, 14808-60-7 Known Carcinogen  
QUARTZ

**Occupational Safety and Health Administration (OSHA)**

29 CFR 1910.1200 hazardous chemical No

CERCLA (Superfund) reportable quantity None

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**Hazard categories Immediate Hazard - No  
Delayed Hazard - Yes  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

Section 302 extremely hazardous substance No

Section 311 hazardous chemical Yes

Food and Drug Administration (FDA) Total food additive  
Indirect food additive  
GRAS food additive**Inventory status**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (CCS)	Yes
Europe	European Inventory of New and Existing Chemicals (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Japanese Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Korean Inventory of Chemicals (KICS)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**International regulations** The product does not need to be labelled in accordance with EC directives or respective national laws.**IARC - Group 1 (Carcinogenic to Humans)**

CRYSTALLINE SILICA, QUARTZ 14808-60-7 Monograph 68, 1997 (Listed under Crystalline silica, inhaled in the form of quartz or cristobalite from occupational sources)

**State regulations** WARNING: This product contains a chemical known to the State of California to cause cancer.**California - Proposition 65 - Carcinogens List**

CRYSTALLINE SILICA, QUARTZ 14808-60-7 carcinogen, initial date 10/1/88 (airborne particles of respirable size)

**Massachusetts - Right To Know List**

CRYSTALLINE SILICA, QUARTZ 14808-60-7 Carcinogen; Extraordinarily hazardous

**New Jersey - Right to Know Hazardous Substance List**

CRYSTALLINE SILICA, QUARTZ 14808-60-7 sn 1660

**Pennsylvania - RTK (Right to Know) List**

CRYSTALLINE SILICA, QUARTZ 14808-60-7 Present (includes dust)

**16. Other Information****HMIS ratings** Health: 1\*  
Flammability: 0  
Physical hazard: 0  
Personal protection: E**NFPA ratings** Health: 1  
Flammability: 0  
Instability: 0

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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**MSDS sections updated**

Product and Company Identification: Alternate Trade Names  
Composition / Information on Ingredients: Component Summary  
Hazards Identification: US Hazardous  
Fire Fighting Measures: Fire & Explosion Properties  
Physical & Chemical Properties: Physical & Chemical Properties  
Regulatory Information: Canada  
Regulatory Information: US federal regulations