

SAFETY DATA SHEET



1. Identification

Product identifier	Blockade
Other means of identification	None.
Recommended use	Not available.
Recommended restrictions	Workers should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

Supplier Information

Company name	Drillchem Drilling Solutions
Address	PO Box 132107 Spring, TX 77393
Telephone	(281) 713-8941
Emergency phone number	(800) 424-9300 (24 Hours) CHEMTREC

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Skin corrosion/irritation Category 1 Serious eye damage/eye irritation Category 1 Carcinogenicity Category 1A
Environmental hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	



Signal word	Danger
Hazard statement	Causes severe skin burns and eye damage. Causes serious eye damage. May cause cancer.
Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse.
Storage	Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
DIATOMACEOUS EARTH	SILICA, AMORPHOUS	61790-53-2	20 - < 30
Calcite		471-34-1	10 - < 20
Calcium Hydroxide		1305-62-0	10 - < 20
GRAPHITE		7782-42-5	10 - < 20
Other components below reportable levels			30 - < 40

Impurities

Chemical name	CAS number	%
SILICA, CRISTOBALITE	14464-46-1	<.99
SILICA, CRYSTALLINE (QUARTZ)	14808-60-7	<.99

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Occupational Exposure Limits for impurities are listed in Section 8.

4. First-aid measures

Inhalation

Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact

Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

Eye contact

Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed

Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Coughing.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

General information

IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions

Use water spray to cool unopened containers.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Stop the flow of material, if this is without risk. Absorb in vermiculite, dry sand or earth and place into containers. Collect dust using a vacuum cleaner equipped with HEPA filter.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Avoid the generation of dusts during clean-up. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

Environmental precautions**7. Handling and storage****Precautions for safe handling**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection**Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value	Form
Calcite (CAS 471-34-1)	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.
Calcium Hydroxide (CAS 1305-62-0)	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.
GRAPHITE (CAS 7782-42-5)	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
DIATOMACEOUS EARTH (CAS 61790-53-2)	TWA	0.8 mg/m ³	
		20 mppcf	
GRAPHITE (CAS 7782-42-5)	TWA	15 mppcf	
Impurities	Type	Value	Form
SILICA, CRYSTALLINE (QUARTZ) (CAS 14808-60-7)	TWA	0.3 mg/m ³	Total dust.
		0.1 mg/m ³	Respirable.
SILICA, CRISTOBALITE (CAS 14464-46-1)	TWA	2.4 mppcf	Respirable.
		0.15 mg/m ³	Total dust.
		0.05 mg/m ³	Respirable.
		1.2 mppcf	Respirable.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Calcium Hydroxide (CAS 1305-62-0)	TWA	5 mg/m ³	
GRAPHITE (CAS 7782-42-5)	TWA	2 mg/m ³	Respirable fraction.
Impurities	Type	Value	Form
SILICA, CRYSTALLINE (QUARTZ) (CAS 14808-60-7)	TWA	0.025 mg/m ³	Respirable fraction.

US. ACGIH Threshold Limit Values

Impurities	Type	Value	Form
SILICA, CRISTOBALITE (CAS 14464-46-1)	TWA	0.025 mg/m3	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Calcite (CAS 471-34-1)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Total
Calcium Hydroxide (CAS 1305-62-0)	TWA	5 mg/m3	
DIATOMACEOUS EARTH (CAS 61790-53-2)	TWA	6 mg/m3	
GRAPHITE (CAS 7782-42-5)	TWA	2.5 mg/m3	Respirable.

Impurities	Type	Value	Form
SILICA, CRYSTALLINE (QUARTZ) (CAS 14808-60-7)	TWA	0.05 mg/m3	Respirable dust.
SILICA, CRISTOBALITE (CAS 14464-46-1)	TWA	3 fibers/cm3	Fiber.
		3 fibers/cm3	Dust.
		5 mg/m3	fibers, total dust
		5 mg/m3	Fiber, total

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Chemical respirator with organic vapor cartridge, full facepiece, dust and mist filter.

Skin protection**Hand protection**

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Chemical respirator with organic vapor cartridge, full facepiece, dust and mist filter.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties**Appearance**

Powder.

Physical state

Solid.

Form

Powder.

Color

Light grey

Odor

None.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

3110 °F (1710 °C) estimated

Material name: Blockade

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Initial boiling point and boiling range	4046 °F (2230 °C) estimated
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	240126.82 hPa estimated
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	845.6 °F (452 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	2.24 g/cm3 estimated
Specific gravity	2.24 estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Acids. Phosphorus. Maleic anhydride. Nitroethane. Fluorine. Nitromethane. Nitroparaffins. Chlorine. Nitropropane.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Dust may irritate respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns.

Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Causes serious eye damage. Dusts may irritate the respiratory tract, skin and eyes. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Coughing.

Information on toxicological effects

Acute toxicity	Not available.
Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.

Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. May cause cancer. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

IARC Monographs. Overall Evaluation of Carcinogenicity

DIATOMACEOUS EARTH (CAS 61790-53-2)	3 Not classifiable as to carcinogenicity to humans.
SILICA, CRISTOBALITE (CAS 14464-46-1)	1 Carcinogenic to humans.
SILICA, CRYSTALLINE (QUARTZ) (CAS 14808-60-7)	1 Carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

SILICA, CRISTOBALITE (CAS 14464-46-1)	Known To Be Human Carcinogen. Reasonably Anticipated to be a Human Carcinogen.
SILICA, CRYSTALLINE (QUARTZ) (CAS 14808-60-7)	Known To Be Human Carcinogen.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

SILICA, CRISTOBALITE (CAS 14464-46-1)

SILICA, CRYSTALLINE (QUARTZ) (CAS 14808-60-7)

US. Massachusetts RTK - Substance List

Calcite (CAS 471-34-1)

Calcium Hydroxide (CAS 1305-62-0)

DIATOMACEOUS EARTH (CAS 61790-53-2)

GRAPHITE (CAS 7782-42-5)

SILICA, CRISTOBALITE (CAS 14464-46-1)

SILICA, CRYSTALLINE (QUARTZ) (CAS 14808-60-7)

US. New Jersey Worker and Community Right-to-Know Act

Calcite (CAS 471-34-1)

Calcium Hydroxide (CAS 1305-62-0)
DIATOMACEOUS EARTH (CAS 61790-53-2)
GRAPHITE (CAS 7782-42-5)
SILICA, CRISTOBALITE (CAS 14464-46-1)
SILICA, CRYSTALLINE (QUARTZ) (CAS 14808-60-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Calcite (CAS 471-34-1)
Calcium Hydroxide (CAS 1305-62-0)
DIATOMACEOUS EARTH (CAS 61790-53-2)
GRAPHITE (CAS 7782-42-5)
SILICA, CRISTOBALITE (CAS 14464-46-1)
SILICA, CRYSTALLINE (QUARTZ) (CAS 14808-60-7)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

SILICA, CRYSTALLINE (QUARTZ) (CAS 14808-60-7) Listed: October 1, 1988

International Inventories

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

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

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 07-23-2015

Version # 01

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.