



## MATERIAL SAFETY DATA SHEET

### Frac Sand

(IEP)

#### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Frac Sand: 12/20, 20/40, 30/50, 40/70, and 100 Mesh

Synonyms: Industrial Sand, Silica Sand, Frac Sand, Proppant.

Chemical Family: Crystalline Silica

Company Identification: Barton Sand & Gravel Co.  
7200 Hemlock Lane, Suite 200  
Maple Grove, MN 55311  
Phone: (763) 425-4191  
[www.tillercorp.com](http://www.tillercorp.com)

Prepared By: Paul Eigbrett (MSDS Authoring Services)  
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#### 2. COMPOSITION / INFORMATION ON INGREDIENTS

##### CONTAINING: HAZARDOUS AND/OR REGULATED COMPONENTS

| Chemical Name      | Amount   | CAS Number | OSHA PEL Total Dust | OSHA PEL Respirable Dust |
|--------------------|----------|------------|---------------------|--------------------------|
| Crystalline Silica | 90 - 99% | 14808-60-7 | (30mg/m3)/(%SiO2+2) | (10mg/m3)/(%SiO2+2)      |

The above product is processed, washed, and screened to minimize respirable particles. However, some particle size reduction can occur in normal handling.

##### COMPOSITION COMMENTS: --

Exposure limits vary with the % Quartz in dust. All limits are for 8-hr. TWA exposures.

Total dust (ACGIH & MSHA = 30 mg/m3 divided by (% quartz + 3)

Respirable dust (ACGIH, MSHA & OSHA) = 10 mg/m divided by (% quartz + 2)

Trace Elements: These materials are mined from the earth. Trace amounts of naturally occurring elements might be detected during chemical analysis of these materials.

#### 3. HAZARDS IDENTIFICATION

##### EMERGENCY OVERVIEW

**WARNING!** PRODUCT CAN CAUSE ABRASION OR IRRITATION TO SKIN AND EYES. CAN CAUSE GASTROINTESTINAL IRRITATION IF INGESTED. RESPIRABLE DUST INHALED OVER A PERIOD OF TIME COULD CONTAIN RESPIRABLE CRYSTALLINE SILICA. RESPIRABLE CRYSTALLINE SILICA CAUSES LUNG CANCER, SILICOSIS, AND TUBERCULOSIS.

##### Routes of Exposure:

**Eye Contact:** Exposure to airborne dust during the handling of this product may cause immediate or delayed irritation.

**Skin Contact:** This product can cause abrasion and irritation to the skin.

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**Ingestion:** This product can cause gastrointestinal irritation if ingested.

**Inhalation:** The ingredients in this product contain crystalline silica. Exposure to these ingredients in excess of the applicable TLV or PEL (see Section 2) may cause or aggravate other lung conditions. Exposure may cause irritation to the moist mucous membranes of the nose, throat, and upper respiratory system.

**Medical Conditions which May be Aggravated by Inhalation or Dermal Exposure:** Pre-existing upper respiratory and lung diseases by exposure to this product.

**Carcinogenic Potential:** This product is listed as a carcinogen by NTP, OSHA, or IARC. It may also contain trace amounts of substances listed as carcinogens by these organizations including but not limited to: hexavalent chromium, lead compounds, mercury compounds, nickel compounds, and possibly other chemicals.

### 4. FIRST AID MEASURES

**Eyes:** Immediately flush eyes thoroughly with water. Call physician if irritation persists.

**Skin:** Wash skin with soap and water. Call physician if irritation persists.

**Ingestion:** Do not induce vomiting. Seek medical attention or contact poison control center immediately for proper treatment advice.

**Inhalation of Airborne Dust:** Remove to fresh air. Give artificial respiration as needed. Seek medical help if coughing and other symptoms do not subside.

### 5. FIRE FIGHTING MEASURES

Flash Point – Not Applicable

Lower Explosive Limit – NA

Upper Explosive Limit – NA

Auto Ignition Temperature – Not Applicable

Note: Crystalline Silica is non-flammable and non-explosive.

Extinguishing Media – As Appropriate

Special fire fighting Procedures – None Known

Hazardous Combustion Products – None

Unusual Fire & Explosion Hazards - None

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Avoid actions that cause dust to become airborne. Avoid inhalation of dust and contact with skin. Wear appropriate personal protective equipment as described in Section 8.

**Method of Cleaning:** use wet methods, dust suppression agents, or vacuums to clean up spills. Place in containers for reuse, recycling or disposal. Do not dry sweep.

### 7. HANDLING AND STORAGE

Normal temperatures and pressures do not affect the material.

Promptly remove dusty clothing and launder before reuse.

Wash thoroughly after exposure to dust.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Eye Protection:** When engaged in activities where ingredients could contact the eye, wear safety glasses with side shields or goggles. In extremely dusty environments and unpredictable environments, wear unvented or indirectly vented goggles to avoid eye irritation or injury. Contact lenses should not be worn when working with ingredients.

**Skin Protection:** Prevention is essential to avoiding potentially severe skin injury. Avoid contact products ingredients. If contact occurs, promptly wash affected area with soap and water. Where prolonged exposure to products might occur, wear impervious clothing and gloves to eliminate skin contact.

**Respiratory Protection:** Avoid actions that cause dust exposure to occur. Use local or general ventilation to control exposures below applicable exposure limits. NIOSH or MSHA approved particulate filter respirators should be used in the context of respiratory protection program meeting the requirements of the OSHA respiratory protection standard [29 CFR 1910.134] to control exposures when ventilation or other controls are inadequate or discomfort or irritation is experienced. Respirator and/or filter cartridge selection should be

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based on American National Standards Institute (ANSI) Standards Z88.2 Practices for Respiratory Protection.

**Ventilation:** Use local exhaust or general dilution ventilation to control exposure within applicable limits.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance – White or tan sand; granular  
Odor – No Distinct Odor  
Physical State – Solid  
Specific Gravity (H<sub>2</sub>O=1) – 2.65  
pH (In water) (ASTM D 1293-95) – Not Applicable  
Solubility In Water – Insoluble

Vapor Pressure – Not Applicable  
Vapor Density – Not Applicable  
Boiling Point – Not Applicable  
Melting Point – 3110°F  
Evaporation Rate – Not Applicable

### 10. STABILITY AND REACTIVITY

**Stability:** Stable.

**Conditions to avoid:** Incompatible materials

**Hazardous Polymerization:** Hazardous polymerization will not occur.

**Incompatibility with other materials:** Crystalline Silica is incompatible with strong oxidizing agents such as hydrofluoric acid, fluorine, chlorine trifluoride, oxygen difluoride, may cause fires.

**Hazardous Decomposition:** Will not spontaneously occur. Silica will dissolve in hydrofluoric acid and produce a corrosive gas – silicon tetrafluoride.

### 11. TOXICOLOGICAL INFORMATION

#### **TOXICITY:**

The major concern is silicosis, caused by the inhalation and retention of respirable crystalline silica dust. Silicosis can exist in several forms, chronic (or ordinary), accelerated, or acute.

Chronic or Ordinary Silicosis (often referred to as Simple Silicosis) is the most common form of silicosis, and can occur after many years of exposure to relatively low levels of airborne respirable crystalline silica dust. It is further defined as either simple or complicated silicosis. Simple silicosis is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter, primarily in the upper lung zones. Often, simple silicosis is not associated with symptoms, detectable changes in lung function or disability. Simple silicosis may be progressive and may develop into complicated silicosis or progressive massive fibrosis (PMF). Complicated silicosis or PMF is characterized by lung lesions (shown as radiographic opacities) greater than 1 centimeter in diameter. Although there may be no symptoms associated with complicated silicosis or PMF, the symptoms, if present, are shortness of breath, wheezing, cough and sputum production. Complicated silicosis or PMF may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF can result in heart disease secondary to the lung disease (cor pulmonale). Accelerated Silicosis can occur with exposure to high concentrations of respirable crystalline silica over a relatively short period; the lung lesions can appear within five (5) years of initial exposure. Progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except that lung lesions appear earlier and progression is more rapid. Acute Silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis is fatal.

#### **CANCER**

IARC - The International Agency for Research on Cancer ("IARC") concluded that there was "sufficient evidence in humans for the carcinogenicity of crystalline silica in the forms of quartz or cristobalite from occupational sources", and that there is "sufficient evidence in experimental animals for the carcinogenicity of quartz and cristobalite." The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is *carcinogenic to humans* (Group 1)." The IARC evaluation noted that "carcinogenicity was not detected in all industrial circumstances studies. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." For further information on the IARC evaluation, see IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 68,

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"Silica, Some Silicates..." (1997). NTP - The National Toxicology Program's Eleventh Annual Report on Carcinogens classifies "silica, crystalline (respirable size)" as a known human carcinogen. OSHA - Crystalline silica (quartz) is not regulated by the U. S. Occupational Safety and Health Administration as a carcinogen.

### 12. ECOLOGICAL INFORMATION

**Ecotoxicity:** Crystalline silica (quartz) is not known to be ecotoxic; i.e., there are no data that suggests that crystalline silica (quartz) is toxic to birds, fish, invertebrates, microorganisms or plant

### 13. DISPOSAL CONSIDERATIONS

**Waste Disposal:** Non-Hazardous. Dispose of waste material according to local, state and federal regulations.  
**RCRA:** Crystalline silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

### 14. TRANSPORTATION INFORMATION

**Hazardous Materials Description/Proper Shipping Name:** Crystalline silica (quartz) is not a hazardous material for purposes of transportation under the U. S. Department of Transportation Table of Hazardous Materials, 49 CFR §172.101.

**Hazard Class:** Not Applicable

**Identification Number:** Not Applicable

**Required Label Text:** Not Applicable

**Hazardous Substances/Reportable Quantities:** Not Applicable

**Recommendations:** Dry fine materials best transported by bulk tanker or sealed bags. Aggregates should be sheeted or conditioned with water to minimize dust.

### 15. REGULATORY INFORMATION

#### **FEDERAL REGULATORY STATUS:**

TSCA No.: Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7.

RCRA: Crystalline silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

CERCLA: Crystalline silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive

Environmental Response Compensation and Liability Act (CERCLA), 40 CFR §302.

Emergency Planning and Community Right to Know Act (SARA Title III): Crystalline silica (quartz) is not an extremely hazardous substance under Section 302 and is not a toxic chemical subject to the requirements of Section 313.

Clean Air Act: Crystalline silica (quartz) mined and processed by U.S. Silica Company is not processed with or does not contain any Class I or Class II ozone depleting substances.

FDA: Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300(b)(3)(xxvi).

NTP: Respirable crystalline silica, primarily quartz dusts occurring in industrial and occupational settings, is classified as Known to be a Human Carcinogen.

OSHA Carcinogen: Crystalline silica (quartz) is not listed.

#### **STATE REGULATIONS:**

California Proposition 65: Crystalline silica (airborne particles of respirable size) is classified as a substance known to the State of California to be a carcinogen.

California Inhalation Reference Exposure Level (REL): California established a chronic REL of 3 ug for silica (crystalline, respirable). A chronic REL is an airborne level of a substance at or below which no adverse health effects are anticipated in individuals indefinitely exposed to the substance at that level.

Massachusetts Toxic Use Reduction Act: Silica, crystalline (respirable size, <10 microns) is "toxic" for purposes of the Massachusetts Toxic Use Reduction Act.

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Pennsylvania Worker and Community Right to Know Act: Quartz is a hazardous substance under the Act, but it is not a special hazardous substance or an environmental hazardous substance.

### CANADA

Domestic Substances List: U. S. Silica Company products, as naturally occurring substances, are on the Canadian DSL.

WHMIS Classification: D2A Very toxic materials

## 16. OTHER INFORMATION

### Label Requirements:

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|                                               |                     |   |
|-----------------------------------------------|---------------------|---|
| Hazardous Material Information System (HMIS): | Health              | 2 |
|                                               | Physical Hazard     | 0 |
|                                               | Personal Protection | C |

NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme

Protective Equipment: Safety glasses, gloves, Respirator

### ADDITIONAL INFORMATION:

SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY BARTON SAND & GRAVEL CO. , except that the product shall conform to contracted specifications. The information provided herein was believed by Barton Sand & Gravel Co. to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information to comply with all laws and procedures applicable to the safe handling and use of the product and to determine the suitability of the product for its intended use. Buyer's exclusive remedy shall be for damages and no claim of any kind, whether as to product delivered or for non-delivery of product, and whether based on contract, breach of warranty, negligence, or otherwise shall be greater in amount than the purchase price of the quantity of product in respect of which damages are claimed. In no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise.

END OF MSDS