

## SECTION 1: PRODUCT IDENTIFICATION

<b>Product identifier:</b>	Silica sand
<b>Chemical name:</b>	Crystalline silica in the form of quartz
<b>Common names:</b>	Silica sand, industrial sand, frac sand
<b>Product use:</b>	Oil and gas well completion (frac sand, gravel pack sand, resin coated proppant substrate) and industrial uses (filtration media, monitor well sand, testing sand, glass sand, foundry sand)
<b>Restriction on use:</b>	<b>Not to be used for abrasive blasting</b>
<b>Manufacturer's name:</b>	Hi-Crush Inc./Hi-Crush Proppants LLC/D & I Silica, LLC/ Hi-Crush Operating LLC/Hi-Crush Augusta LLC/Hi-Crush Blair LLC/ Hi-Crush Whitehall LLC/Hi-Crush Permian Sand LLC
<b>Manufacturer's address:</b>	1330 Post Oak Blvd., Suite 600 Houston, Texas 77056 USA
<b>Manufacturer's telephone:</b>	(713) 980-6200
<b>Emergency number:</b>	(713) 980-6200 (8:00 am–5:00 pm, Central Time, Mon–Fri)

## SECTION 2: HAZARD IDENTIFICATION

<b>GHS classification:</b>	
<b>Health:</b>	Category 1A carcinogen; Category 1 specific target organ toxicity (STOT) following repeated exposures; Category 2B eye irritation.
<b>Signal word:</b>	DANGER.
	
<b>Hazard statements:</b>	
H320	Causes eye irritation.
H350	May cause cancer by inhalation.
H372	Causes damage to lungs, kidneys and autoimmune system through prolonged or repeated exposure by inhalation.
<b>Precautionary statements:</b>	
P202	Read and understand the SDS before handling this product.
P210	Do not smoke while handling this product.
P260	Do not breathe dust.
P264	Wash skin thoroughly after handling.

## SECTION 2: HAZARD IDENTIFICATION

P271	Avoid creating dust when handling, using and storing this product. Use with adequate ventilation to keep exposure below recommended exposure limits.
P280/P284	Wear eye protection and respiratory protection following this SDS, NIOSH and other applicable guidelines.
P308/P313	If exposed or concerned, seek medical attention and advice.
P305/P351	If in the eyes, rinse cautiously with water for several minutes; P338: Remove contact lenses, if present and easy to do, and continue rinsing.
P337/P313	If eye irritation persists, seek medical attention and advice.

Refer to Section 11 for details of specific health effects of crystalline silica.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<b>Name:</b>	Silica, quartz, SiO <sub>2</sub>
<b>CAS number:</b>	14808-60-7
<b>Concentration (%):</b>	89.0–99.9%

## SECTION 4: FIRST AID PROCEDURES

**Inhalation:** If gross inhalation of silica occurs, remove the person to fresh air, perform artificial respiration as needed, and obtain medical attention as needed.

**Eye:** Immediately wash the eye with water. If irritation persists, seek medical attention.

**Skin:** If abrasion occurs, wash with soap and water. If irritation persists or develops, seek medical attention.

**Ingestion:** Do not induce vomiting. If large amounts are ingested, seek medical attention.

**Most important symptoms and effects, both acute and delayed:**

The most important known symptoms and effects are described in the labeling (see Section 2) and/or in Section 11.

**Indication of any immediate medical attention and special treatment needed:**

No data available.

## SECTION 5: FIRE FIGHTING MEASURES

<b>Flashpoint:</b>	None
<b>Upper/lower explosive limit:</b>	Not combustible
<b>Autoignition temperature:</b>	None known
<b>Unusual fire and explosion habits:</b>	None known
<b>Extinguishing media:</b>	Compatible with all media; use the medium appropriate to the surrounding fire
<b>Special fire fighting procedures:</b>	None with respect to this product
<b>Hazardous combustion products:</b>	None known

## SECTION 6: ACCIDENTAL RELEASE MEASURES

Wear appropriate personal protective equipment as described in Section 8. Do not dry sweep spilled material. Collect the material using a method that does not produce dust [high-efficiency particulate air (HEPA) vacuum or thoroughly wetting down the silica]. Place the silica in a covered container appropriate for disposal. Dispose of the silica according to federal, state, and local regulations.

This product is not subject to the reporting requirements of Title III of SARA, 1986, and 40 CFR 372.

## SECTION 7: HANDLING AND STORAGE

**This product is not to be used for abrasive blasting.** Do not breathe dust, which may be created during the handling of this product. Do not rely on vision to determine whether respirable silica is present in the air, as it may be present without a visible cloud. Use good housekeeping procedures to prevent the accumulation of silica dust in the workplace. Avoid the creation of respirable dust.

Use adequate ventilation and dust collection equipment. Ensure that the dust collection system is adequate to reduce airborne dust levels to below the appropriate occupational health limit. Use respiratory protection if airborne dust levels are above occupational exposure limits and during the establishment of engineering controls. Refer to Section 8—Exposure Controls/Personal Protection for further information.

In accordance with the U.S. Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard (29 CFR 1910.1200, 1915.99, 1917.28, 1918.90, 1926.59, 1928.21), state, and/or local right-to-know laws and regulations, familiarize your employees with this SDS and the information contained herein. Warn your employees (and your customers in case of resale) of the potential health risks associated with the use of this product and train them in the appropriate use of personal protective equipment and engineering controls, which will reduce their risks of exposure.

See also ASTM international standard practice E 1132-06, "Standard Practice for Health Requirements Relating to Occupational Exposure to Respirable Crystalline Silica."

See also the OSHA/NIOSH Hazard Alert Worker Exposure to Silica during Hydraulic Fracturing DHHS (NIOSH) Pub. No. 2012-166 which is available at: [http://www.osha.gov/dts/hazardalerts/hydraulic\\_frac\\_hazard\\_alert.pdf](http://www.osha.gov/dts/hazardalerts/hydraulic_frac_hazard_alert.pdf).

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure limits (respirable fraction) in air containing crystalline silica (quartz):

Standard	Exposure limits
MSHA/OSHA—PEL* (8 hour time-weighted average)	$\frac{10 \text{ mg/m}^3}{\% \text{SiO}_2 + 2}$
*This OSHA PEL was in effect through June 22, 2017 for the construction industry, and June 22, 2018 for general industry; refer to next OSHA—PEL below. The MSHA/OSHA PEL for dust containing crystalline silica (quartz) is based on the silica content of the respirable dust sample. The MSHA/OSHA PEL for crystalline silica as tridymite and cristobalite is one-half the PEL for crystalline silica (quartz).	
OSHA—PEL** (8 hour time-weighted average)	0.050 mg/m <sup>3</sup>
**This OSHA PEL became effective June 23, 2017 for the construction industry, and June 23, 2018 for general industry, as codified in 29 CFR 1926.1153 and 29 CFR 1910.1053, respectively. OSHA has also established an Action Level of 0.025 mg/m <sup>3</sup> as an 8 hour time-weighted average; refer to rules for additional monitoring, controls and other requirements, at <a href="https://www.osha.gov/silica">https://www.osha.gov/silica</a> . The OSHA PEL for dust containing crystalline silica (quartz) is based on the respirable crystalline silica concentration of the respirable dust sample.	
ACGIH—TLV*** (8 hour time-weighted average)	0.025 mg/m <sup>3</sup>

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (CONTINUED)

NIOSH—REL*** (10 hour time-weighted average, 40 Hr. Week)	0.05 mg/m <sup>3</sup>
***The ACGIH and NIOSH limits are for crystalline silica (quartz), independent of the dust concentration. The ACGIH TLV for crystalline silica as cristobalite is equal to the TLV for crystalline silica as quartz. In 2005, ACGIH withdrew the TLV for crystalline silica as tridymite. Refer to Section 10 for thermal stability information for crystalline silica (quartz).	

### Exposure limits in air for inert/nuisance dust:

Standard	Respirable dust	Total dust
MSHA/OSHA PEL (inert or nuisance dust)	5 mg/m <sup>3</sup>	15 mg/m <sup>3</sup>
ACGIH TLV (not otherwise specified)	3 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>

Note: The limits for inert dust are provided as guidelines. Nuisance dust is limited to particulates not known to cause systemic injury or illness.

Silica is classified as hazardous under Occupational Safety and Health Administration (OSHA) regulations; employer shall include respirable crystalline silica in the program established to comply with the hazard communication standard (29 CFR 1910.1200).

### California inhalation reference exposure limit (REL):

Standard	Exposure limits
California—REL*	3 µg/m <sup>3</sup>
*The California chronic REL for respirable crystalline silica is as of June 2014. A chronic REL is an airborne level of a chemical at or below which no adverse health effects are anticipated in individuals indefinitely exposed to that level. {Adoption of chronic REL for silica dated February 10, 2005}.	

### Canadian occupational exposure limits (OEL):

Location/Reference	OEL	Type
Canada Labour Code	0.025 mg/m <sup>3</sup>	respirable
Alberta, British Columbia	0.025 mg/m <sup>3</sup>	respirable quartz and cristobalite
Saskatchewan	0.05 mg/m <sup>3</sup> 0.05 mg/m <sup>3</sup> 0.1 mg/m <sup>3</sup>	respirable, cristobalite respirable, quartz respirable, tripoli, as quartz
Manitoba, Newfoundland, Prince Edward Island	0.025 mg/m <sup>3</sup>	respirable, crystalline silica
Ontario	0.05 mg/m <sup>3</sup> 0.1 mg/m <sup>3</sup>	respirable cristobalite quartz, tripoli
Quebec	0.05 mg/m <sup>3</sup> 0.1 mg/m <sup>3</sup>	respirable, cristobalite, tridymite quartz, tripoli
New Brunswick	0.1 mg/m <sup>3</sup> 0.05 mg/m <sup>3</sup>	quartz cristobalite
Nova Scotia	0.025 mg/m <sup>3</sup>	quartz, cristobalite
Yukon	300 particles/mL 150 particles/mL	quartz, and tripoli (measured with a konimeter) cristobalite and tridymite (measured with a konimeter)
Northwest Territories, Nunavut	0.05 mg/m <sup>3</sup> 0.1 mg/m <sup>3</sup>	respirable, cristobalite, tridymite respirable, quartz, tripoli

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (CONTINUED)

<b>Ventilation:</b>	Use local exhaust as required to maintain exposures below the occupational exposure limits; see also ACGIH, Industrial Ventilation—Recommended Practice (latest edition).
<b>Respiratory protection:</b>	<b>This product is not to be used for abrasive blasting.</b> Consult with OSHA regulations and NIOSH recommendations to determine the appropriate respiratory protection during use of this product. Use only NIOSH-approved respiratory protection equipment. Avoid breathing dust produced during the use and handling of this product. If the workplace airborne crystalline silica concentration is unknown for a given task, conduct air monitoring to determine the appropriate level of respiratory protection. Consult with a certified industrial hygienist, your insurance risk manager, or the OSHA consultative services group for detailed information. Ensure appropriate respirators are worn during the following the task, including clean up or whenever airborne dust is present, to ensure worker exposures remain below occupational health limits. Provisions should be made for a respiratory protection training program (see 29 CFR 1910.134—Respiratory Protection for Minimum Program Requirements); required under 29 CFR 1910.1053(g)(2). See also ANSI standard Z88.2 (latest revision), “American National Standard for Respiratory Protection,” 29 CFR 1910.134 and 1926.103, and 42 CFR 84.
<b>Gloves:</b>	Recommended in situations where abrasion from sand may occur.
<b>Eye:</b>	Use protection as appropriate for the task at hand.
<b>Other:</b>	Use protective clothing as appropriate for the work environment.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Light buff to white sand
<b>Odor:</b>	None
<b>Odor threshold:</b>	None
<b>Physical state:</b>	Granular solid
<b>Boiling point or range:</b>	2230°C (4046°F) for quartz
<b>Melting point or range:</b>	1710°C (3110°F) for quartz
<b>pH:</b>	Not applicable
<b>Vapor pressure:</b>	Not applicable
<b>Vapor density:</b>	Not applicable
<b>Flammability:</b>	Non-combustible solid
<b>Upper/lower explosive limit:</b>	Non-combustible solid
<b>Flashpoint:</b>	None
<b>Evaporation rate:</b>	Not applicable
<b>Partition coefficient: n-octanol/water:</b>	Not applicable
<b>Auto-ignition temperature:</b>	None
<b>Viscosity:</b>	Not applicable
<b>Solubility in water:</b>	Insoluble
<b>Specific gravity:</b>	2.65 (quartz)

## SECTION 10: STABILITY AND REACTIVITY

<b>Chemical stability:</b>	Stable.
<b>Thermal stability:</b>	If crystalline silica (quartz) is heated to more than 870°C (1598°F) it can change to a form of crystalline silica known as tridymite, and if crystalline silica (quartz) is heated to more than 1470°C (2678°F), it can change to a form of crystalline silica known as cristobalite.
<b>Materials to avoid:</b>	Strong oxidizing agents, such as fluorine, chlorine trifluoride, hydrogen fluoride, and oxygen difluoride.
<b>Hazardous decomposition:</b>	Silica will dissolve in hydrofluoric acid and produce a corrosive gas, silicon tetrafluoride.
<b>Hazardous polymerization:</b>	Will not occur.

## SECTION 11: TOXICOLOGICAL INFORMATION

**Primary route(s) of exposure:** inhalation, eye contact, skin contact.

### Inhalation:

**Acute effects:** One form of silicosis, 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.

**Chronic effects:** Lung disease, silicosis, cancer, autoimmune disease, tuberculosis, and nephrotoxicity are adverse, chronic health effects.

**Eye contact:** May cause abrasion of the cornea.

**Skin contact:** May cause abrasion to the skin.

**Ingestion:** No adverse effects expected for incidental ingestion. Ingestion of large amounts may cause gastrointestinal tract irritation.

**Medical conditions generally aggravated by exposure:** The condition of individuals with lung disease (e.g., bronchitis, emphysema, chronic obstructive pulmonary disease) can be aggravated by exposure.

**Signs and symptoms of exposure:** There are generally no signs or symptoms of exposure to crystalline silica (quartz). Often, chronic silicosis has no symptoms. The symptoms of chronic silicosis, if present, are shortness of breath, wheezing, cough and sputum production. The symptoms of acute silicosis are the same as those associated with chronic silicosis; additionally, weight loss and fever may also occur. The symptoms of scleroderma include thickening and stiffness of the skin, particularly in the fingers, shortness of breath, difficulty swallowing and joint problems.

**Danger:** Inhalation of respirable crystalline silica dust may not cause noticeable injury or illness even though permanent damage may be occurring. Inhalation of silica dust may have the following serious chronic health effects:

### A. Silicosis

The major concern is silicosis (lung disease), 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* is the most common form of silicosis, and can occur after many years of exposure to levels above the occupational exposure limits for 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).

## SECTION 11: TOXICOLOGICAL INFORMATION (CONTINUED)

*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 (cor pulmonale) secondary to the lung disease.

*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 the initial exposure. The progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except that the lung lesions appear earlier and the 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.

### **B. 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 not all industrial circumstances studied evidenced carcinogenicity. The monograph also stated that “[C]arcinogenicity 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, “Silica, Some Silicates...” (1997) and Volume 100C, “Silica Dust, Crystalline, in the Form of Quartz or Cristobalite” (2012).

*NTP*—The National Toxicology Program, in its eleventh annual report on carcinogens, concluded that respirable crystalline silica is known to be a human carcinogen, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to respirable crystalline silica and increased lung cancer rates in workers exposed to crystalline silica dust.

*OSHA*—Not regulated as a carcinogen.

The reader is encouraged to consult additional information. The following are examples of published articles: (1) “Lung cancer among industrial sand workers exposed to crystalline silica,” *Am J Epidemiol*, (153) 695-703 (2001); (2) “Crystalline silica and the risk of lung cancer in the potteries,” *Occup Environ Med*, (55) 779-785 (1998); (3) “Is Silicosis required for silica-associated lung cancer?,” *American Journal of Industrial Medicine*, (37) 252-259 (2000); (4) “Silica, silicosis, and lung cancer: A risk assessment,” *American Journal of Industrial Medicine*, (38) 8-18 (2000); (5) “Silica, silicosis, and lung cancer: A response to a recent working group report,” *Journal of Occupational and Environmental Medicine*, (42) 704-720 (2000); (6) “Occupational silica exposure and lung cancer risk: A review of epidemiological studies 1996-2005,” *Ann Oncol*, (17) 1039-50 (2006); and (7) “Dose-response meta-analysis of silica and lung cancer,” *Cancer Causes Control*, (20): 925-33 (2009).

### **C. Autoimmune Diseases**

There is evidence that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders,—scleroderma, systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. For a review of the subject, the following may be consulted: “Occupational Exposure to Crystalline Silica and Autoimmune Disease,” *Environmental Health Perspectives*, (107) Supplement 5, 793-802 (1999); “Occupational Scleroderma,” *Current Opinion in Rheumatology*, (11) 490-494 (1999); “Connective tissue disease and silicosis,” *Am J Ind Med*, (35), 375-381 (1999).

## SECTION 11: TOXICOLOGICAL INFORMATION (CONTINUED)

### **D. Tuberculosis**

Individuals with silicosis are at increased risk to develop pulmonary tuberculosis, if exposed to persons with tuberculosis. The following may be consulted for further information: *Occupational Lung Disorders*, Third Edition, Chapter 12, entitled "Silicosis and Related Diseases," Parkes, W. Raymond (1994); "Risk of pulmonary tuberculosis relative to silicosis and exposure to silica dust in South African gold miners," *Occup Environ Med*, (55) 496-502 (1998); "Occupational risk factors for developing tuberculosis," *Am J Ind Med*, (30) 148-154 (1996).

### **E. Kidney Disease**

There is evidence that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis is associated with the increased incidence of kidney diseases, including end stage renal disease. For additional information on the subject, the following may be consulted: "Kidney Disease and Silicosis," *Nephron*, (85) 14-19 (2000); "End stage renal disease among ceramic workers exposed to silica," *Occup Environ Med*, (56) 559-561 (1999); "Kidney disease and arthritis in a cohort study of workers exposed to silica," *Epidemiology*, (12) 405-412 (2001).

### **F. Non-Malignant Respiratory Diseases**

NIOSH has cited the results of studies that report an association between dusts found in various mining operations and non-malignant respiratory disease, particularly among smokers, including bronchitis, emphysema, and small airways disease. The results were not conclusive regarding an association among those with silicosis, only smokers, or the result of general mineral dust that does not contain silica. See *NIOSH Hazard Review—Health Effects of Occupational Exposure to Respirable Crystalline Silica*, published in April 2002, available from NIOSH, 4676 Columbia Parkway, Cincinnati, OH 45226, or at <http://www.cdc.gov/niosh/02-129A.html>.

## SECTION 12: ECOLOGICAL INFORMATION

Crystalline silica is not known to be ecotoxic.

## SECTION 13: DISPOSAL CONSIDERATIONS

**General:** If uncontaminated, crystalline silica may be landfilled. Material should be placed in covered containers to minimize generation of airborne dust.

**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.*

The above information applies to Hi-Crush silica sand only as sold. Product may be contaminated during use, and it is the responsibility of the user to assess the appropriate disposal method subject to all applicable local, state/provincial and federal regulations.

## SECTION 14: TRANSPORT INFORMATION

Crystalline silica (quartz) is not a hazardous material for purposes of transportation under U.S. Department of Transportation Table of Hazardous Materials, 49 CFR § 172.101, Canadian TDG, IMDGD or IATA Regulations. Label as required by the OSHA Hazard Communication Standard [29 CFR 1910.1200(f)], and applicable state and local regulations. Consult applicable international, national, state, provincial or local laws.

## SECTION 15: REGULATORY INFORMATION

### United States (federal and state):

*OSHA*: Crystalline silica is not listed as a carcinogen.

*SARA Title III*: Section 311 and 312: Immediate health hazard and delayed health hazard.

*TSCA*: 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 § 302.4.

*EPCRA (Emergency Planning and Community Right to Know Act)*: Crystalline silica (quartz) is not an extremely hazardous substance under 40 CFR Part 355, Appendices A and B, and is not a toxic chemical subject to the requirements of Section 313.

*Clean Air Act*: Crystalline silica (quartz) 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 (quartz) is classified as a known human carcinogen.

*California Proposition 65*: Crystalline silica (quartz) is classified as a substance known to the state of California to be a carcinogen.

*California Inhalation Reference Exposure Limit (REL)*: The California chronic REL for respirable crystalline silica is 3 µg/m<sup>3</sup>. 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*: Respirable crystalline silica is considered toxic per the Massachusetts Toxic Use Reduction Act.

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

### Canada:

*Domestic Substances List (DSL)*: Silica sand, as a naturally occurring substance, is on the Canadian DSL.

*National Pollutant Release Inventory (NPRI), CEPA subsection 16 (1)*: None.

*WHMIS Classification*: D-2A and D-2B.

### Other:

*EINECS No.*: 238-878-4 (for quartz).

*EEC Label (Risk/Safety Phrases)*: R 48/20, R 40/20, S22, S38.

*IARC*: Crystalline silica (quartz) is classified in IARC Group 1.

*NTP*: Respirable crystalline silica is classified as a known carcinogen.

National, state, provincial or local emergency planning, community right to know or other laws, regulations or ordinances may be applicable—consult applicable national, state, provincial or local laws.

## SECTION 16: OTHER INFORMATION

An electronic version of this SDS is available at [www.hicrush.com](http://www.hicrush.com). More information on the effects of crystalline silica exposure may be obtained from the Occupational Safety and Health Administration (OSHA) (phone number: 1-800-321-OSHA; website: <http://www.osha.gov>) or from the National Institute for Occupational Safety and Health (NIOSH) (phone number: 1-800-35-NIOSH; website: <http://www.cdc.gov/niosh>).

### HMIS:

Health:	See Section 2 and Section 11 of this SDS.
Flammability:	0
Reactivity:	0
Protective equipment:	E

### NFPA:

Health:	0
Flammability:	0
Reactivity:	0

**User's Responsibility:** The OSHA Hazard Communication Standard 29 CFR 1910.1200 require that this safety data sheet be made available to your employees who handle or may be exposed to this product. Educate and train your employees regarding applicable precautions. Instruct your employees to handle this product properly.

**Disclaimer:** The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for one's own particular use. Since the actual use of the product described herein is beyond our control, Hi-Crush Inc. and its affiliates assume no liability arising out of the use of the product by others. Appropriate warnings and safe handling procedures should be provided to handlers and users.