

# MATERIAL SAFETY DATA SHEET

**GRANITE**

P. O. BOX 50085  
WATSONVILLE, CA 95077-5085  
408/724-1011

PREPARED DATE: 09-19-02  
REPLACES: 10-01-94

## SECTION I MATERIAL IDENTIFICATION

<b>CHEMICAL NAME</b> Not Applicable	<b>CHEMICAL FORMULA</b> Mixture	<b>MOLECULAR WEIGHT</b> Not Applicable
<b>TRADE NAME(S)</b> Construction Aggregates		
<b>SYNONYMS</b> Crushed Stone, Sand and Gravel		<b>DOT IDENTIFICATION NO.</b> None

## SECTION II PRODUCT AND COMPONENT DATA

COMPONENT(S) CHEMICAL NAME	CAS REGISTRY NO.	% (APPROX.) (optional)	OSHA PEL	ACGIH TLV - TWA
Mineral Aggregates (crushed stone, sand and gravel) Silica, crystalline - Typically Quartz (content typically greater than 1% and can be higher than 20%) Other possible forms of crystalline silica Cristobalite Tridymite	None 14808-60-7  14464-46-1 15468-32-3	100 >1-20	NA See Section X  See Section X See Section X	NA 0.05 mg/m <sup>3</sup>  0.05 mg/m <sup>3</sup> 0.05 mg/m <sup>3</sup>

## SECTION III PHYSICAL DATA

<b>APPEARANCE AND ODOR</b> Angular particles, light/salt and pepper colored, ranging in size from pebbles to boulders. No odor.		<b>SOLUBILITY IN WATER</b> Negligible	
<b>BOILING POINT</b>	NA	<b>SPECIFIC GRAVITY (H<sub>2</sub>O = 1 @ 39.2 F)</b>	2.44 - 2.8
<b>VAPOR PRESSURE (mm Hg)</b>	NA	<b>MELTING POINT</b>	NA
<b>VAPOR DENSITY IN AIR (AIR = 1)</b>	NA	<b>EVAPORATION RATE (Butyl Acetate = 1)</b>	NA

## SECTION IV PHYSICAL HAZARDS (FIRE AND EXPLOSION HAZARD DATA)

<b>FLASHPOINT (METHOD USED)</b> Not flammable	<b>FLAMMABLE LIMITS IN AIR (% Vol. in air)</b> Not flammable	<b>LEL</b> NA	<b>UEL</b> NA
--	---	------------------	------------------

**EXTINGUISHING AGENTS**  
None required

**UNUSUAL FIRE AND EXPLOSION HAZARDS**  
Contact with powerful oxidizing agents may cause fire and/or explosions

## SECTION V REACTIVITY DATA

<b>STABILITY</b>	Unstable	NA	<b>CONDITIONS TO AVOID</b> Avoid contact with incompatible materials.
	Stable	X	

**INCOMPATIBILITY (MATERIALS TO AVOID)**  
Contact with powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trifluoride, oxygen difluoride, and hydrogen peroxide (etc.; acetylene, ammonia) may cause fire and explosion. Silica dissolves in hydrofluoric acid producing a corrosive gas - silicon tetrafluoride.

**HAZARDOUS DECOMPOSITION PRODUCTS**  
Silica-containing respirable dust particles may be generated by handling,

<b>HAZARDOUS POLYMERIZATION</b>	May Occur	NA	<b>CONDITIONS TO AVOID</b> Not Applicable
	Will Not Occur	NA	

## SECTION VI TOXICITY AND FIRST AID

PRIMARY ROUTE(S) OF EXPOSURE	Inhalation? Yes	Skin? No	Ingestion? No
------------------------------	-----------------	----------	---------------

### HEALTH HAZARDS (ACUTE AND CHRONIC)

Eye Contact: Direct contact with dust may cause irritation by mechanical abrasion

Skin Contact: Direct contact may cause irritation by mechanical abrasion

Skin Absorption: Not expected to be a significant exposure route.

Ingestion: Ingestion is unlikely, but large amounts ingested may cause gastrointestinal irritation and blockage.

Inhalation: Inhalation of dusts may irritate the nose, throat, and respiratory tract.

Crystalline silica is a naturally occurring substance found in rock formation and soil. The most common form of crystalline silica is quartz. Chronic exposure to respirable crystalline silica dust in excess of the appropriate exposure levels has been known to cause silicosis.

### CARCINOGENICITY

Mineral aggregate (crushed stone, sand and gravel) is not listed as a carcinogen by NTP, IARC or OSHA. Crystalline silica is listed by IARC. IARC has determined that there is evidence for carcinogenicity to animals exposed to crystalline silica and limited evidence for carcinogenicity to humans. Limited evidence means that a causal relationship is possible; however, other explanations such as chance, bias or confounding factors cannot adequately be excluded. NTP has listed crystalline silica as reasonably anticipated to be a human carcinogen (RAHC).

NTP  
Silica - RAHC

IARC  
Silica -  
Carcinogen  
(Group 1)

OSHA  
NE

### CALIFORNIA PROPOSITION 65

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

### STATE LISTED COMPONENT(S)

Crystalline silica

### SIGNS AND SYMPTOMS OF EXPOSURE

Coughing, sneezing, wheezing, shortness of breath and irritation of eyes may occur following exposures in excess of appropriate exposure limits.

Symptoms of silicosis (but not limited to): Shortness of breath, difficulty breathing with or without exertion, coughing, diminished work capacity, diminished chest expansion, reduction in lung volume, right heart enlargement or failure.

### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Inhaling respirable dust may aggravate existing respiratory system disease(s) and/or dysfunctions. Exposure to dust may aggravate existing skin and/or eye conditions.

### EMERGENCY AND FIRST AID

Eyes: Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelid(s) to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from the eye(s). Contact a physician if irritation persists or later develops.

Skin: Wash with soap and water. Contact a physician if irritation persists or later develops.

Ingestion: If person is conscious, give large quantity of water and induce vomiting; however, never attempt to make an unconscious person drink or vomit. Get immediate medical attention.

Inhalation: Move to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists or later develops.

For additional information contact: Director of Health and Safety

Granite Construction Incorporated

P. O. Box 50085

Watsonville, CA 95077-5085

408-724-1011

## SECTION VII PRECAUTIONS FOR SAFE HANDLING AND USE

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Spilled material may generate dust and overexpose janitorial personnel to respirable crystalline silica-containing dust. Wetting of spilled material and/or use of respiratory protective equipment may be necessary. Avoid dry sweeping. Prevent spilled materials from entering streams, drainages, or sewers.

### WASTE DISPOSAL METHOD

Dispose of waste materials only in accordance with applicable federal, state, and local laws and regulations.

### STORAGE AND HANDLING PRECAUTIONS

Respirable dust may be generated during processing, handling, and storage. The controls identified in Section VIII should be applied as appropriate.

Do not store near food and beverages or smoking material. Avoid incompatible materials.

### OTHER PRECAUTIONS

## SECTION VIII PERSONAL PROTECTION AND CONTROL MEASURES

### RESPIRATORY PROTECTION

If dust concentrations exceed the OSHA/MSHA PEL, wear NIOSH/MSHA-approved respiratory protection appropriate for the circumstances. Consult an industrial hygienist for evaluation of exposures. Follow applicable MSHA or OSHA respirator use, fitting, and training standards.

<b>VENTILATION</b> Local exhaust or general ventilation adequate to maintain exposures below appropriate exposure limits.	<b>Local Exhaust</b> As required	<b>Special</b>
	<b>Mechanical (General)</b> As required	<b>Other</b>
<b>PROTECTIVE GLOVES</b> Not Required	<b>EYE PROTECTION</b> Safety glasses with side shields should be worn as minimum protection. Dust goggles should be worn when excessively (visible) dusty conditions are present or anticipated.	

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT**  
Not Required

**HYGIENE**  
Use work practices which minimize generation of airborne dust. Use normal good hygiene practices. Wash dust-exposed skin with soap and water before eating, drinking, smoking, and using toilet facilities. Wash work clothes after each use.

**OTHER CONTROL MEASURES**  
Respirable dust levels should be monitored regularly. Dust levels in excess of appropriate exposure limits should be reduced by engineering controls such as wet suppression, ventilation, and process enclosure or enclosed employee work stations.

**SECTION IX TRANSPORTATION**

<b>DOT HAZARD CLASS</b> None	<b>PLACARD REQUIRED</b> None
---------------------------------	---------------------------------

**LABEL REQUIRED**  
Label as required by the OSHA and MSHA Hazard Communication standards [29 CFR 1910.1200 (f) and 30 CFR Part 42], and applicable state and local regulations.

**SECTION X EXPOSURE LIMITS**

<b>PARTICULATES (DUST)</b>	<b>MSHA PEL (Permissible Exposure Level)</b>	<b>OSHA PEL (Permissible Exposure Level)</b>	<b>NIOSH REL (Recommended Exposure Limit)</b>	<b>ACGIH TLV (Threshold Limit Value)</b>
<b>TWA</b> (Time-weighted Average)	10 mg/m <sup>3</sup>	15 mg/m <sup>3</sup> (Total) 5 mg/m <sup>3</sup> (Respirable)	NE	10 mg/m <sup>3</sup> (Inhalable) 3 mg/m <sup>3</sup> (Respirable)
<b>STEL</b> (Short-term Exposure Limit)		NA	NA	NA
<b>C</b> (Ceiling)		NA	NA	NA
<b>IDLH</b> (Immediate Dangerous to Life and Health)		NA	NA	NA
<b>OTHER EXPOSURE LIMITS/LEVELS: Cal/OSHA PEL – 10 mg/m<sup>3</sup> (Total), 5 mg/m<sup>3</sup> (Respirable)</b>				
<b>QUARTZ (CRYSTALLINE SILICA)</b>	<b>MSHA PEL (Permissible Exposure Level)</b>	<b>OSHA PEL (Permissible Exposure Level)</b>	<b>NIOSH REL (Recommended Exposure Limit)</b>	<b>ACGIH TLV (Threshold Limit Value)</b>
<b>TWA</b> (Time-weighted Average)	30 mg/m <sup>3</sup> / (%SiO <sub>2</sub> +2) total 10 mg/m <sup>3</sup> / (%SiO <sub>2</sub> +2) respirable	30 mg/m <sup>3</sup> / (%SiO <sub>2</sub> +2) total 10 mg/m <sup>3</sup> / (%SiO <sub>2</sub> +2) respirable	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>
<b>STEL</b> (Short-term Exposure Limit)		NA	NA	NA
<b>C</b> (Ceiling)		NA	NA	NA
<b>IDLH</b> (Immediate Dangerous to Life and Health)		NA	50 mg/m <sup>3</sup>	NA
<b>OTHER EXPOSURE LIMITS/LEVELS: Cal/OSHA PEL - 0.1 mg/m<sup>3</sup></b>				
<b>CRISTOBALITE AND TRIDYMITTE (CRYSTALLINE SILICA)</b>	<b>MSHA PEL (Permissible Exposure Level)</b>	<b>OSHA PEL (Permissible Exposure Level)</b>	<b>NIOSH REL (Recommended Exposure Limit)</b>	<b>ACGIH TLV (Threshold Limit Value)</b>
<b>TWA</b> (Time-weighted Average)		½[30 mg/m <sup>3</sup> / (%SiO <sub>2</sub> +2)] total ½[10 mg/m <sup>3</sup> / (%SiO <sub>2</sub> +2)] respirable	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>
<b>STEL</b> (Short-term Exposure Limit)		NA	NA	NA
<b>C</b> (Ceiling)		NA	NA	NA
<b>IDLH</b> (Immediate Dangerous to Life and Health)		NA	50 mg/m <sup>3</sup>	NA
<b>OTHER EXPOSURE LIMITS/LEVELS: Cal/OSHA PEL - 0.05 mg/m<sup>3</sup></b>				