



Material Safety Data Sheet

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1. CHEMICAL PRODUCT

Material Identity

Product Name: Valiant Quartz

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2. HAZARDOUS INGREDIENTS

CHEMICAL NAME	% COMPOSITION	CAS NUMBER
Crystalline Silica (quartz)	Around 90	14808-60-7
Polymeric Resin	7-14%	N/A
Piment and Trace Materials	~2%	N/A

Crystalline silica quartz dust has been identified as a carcinogen or probable carcinogen by IARC.

3. Physical/Chemical Characteristics

Boiling Point	ND
Vapor Pressure (mm Hg)	ND
Vapor Density (Air=1)	ND
Specific Gravity (Water =1)	2.2-2.5
Melting Point	ND
Solubility in Water	Insoluble
Appearance	Multi-colored engineered stone
Odor	None

4. – Fire and Explosion Hazard Data

Flash Point	450°C – At temperatures greater than 450°C, the product can auto ignite
Extinguishing Media	Foam, dry chemical, carbon dioxide, water spray
Special Fire Fighting Procedures	Fire fighters should wear self-contained breathing apparatus.
Unusual Fire & Explosion Hazards	None

Reference	Guideline or limit (ug/M3)
Occupation Safety and Health Administrations (www.osha.org)	OSHA Permissible exposure limit (PEL) for respirable crystalline silica (quartz) is 50 ug/M3 as an eight-hour time weighted average (TWA)
The National Institute of Occupational Safety and Health (NIOSH) (www.cdc.gov/niosh/)	Recommended Exposure Limited (REL) for respirable crystalline silica (quartz) is 50 ug/M3 of air as a TWA for up to a 10-hour work day of a 40-hour week.

5. – Reactivity Data

Stability	Stable
Conditions to Avoid	Water contamination to protect product quality
Incompatibility (Material to avoid)	Hydrofluoric acid, Strong bases, alcohols, metal compounds
Hazardous Decomposition	Oxides of carbon and nitrogen, traces of hydrogen cyanide. Reacts with hydrofluoric acid to form toxic silicon tetrafluoride gas.
Hazardous Polymerization	Will not occur

6. – Health Hazard Data

Routes of Entry

- Inhalation Unlikely unless heated or sprayed; vapors, when generated, can irritate the respiratory tract.
- Skin Contact Yes
- Ingestion Effects are unknown
- Eye Contact May cause irritation

Signs of exposure

Chronic silicosis signs and symptoms may include shortness of breath following physical exertion, severe cough, fatigue, loss of appetite, chest pain and fever.

Medical Condition Generally

Aggravated by exposure

None Known

Emergency & First Aid Procedures

Eye Contact

Flush with water for 15 minutes; seek medical attention

Skin Contact

Remove with water if redness or rash develops seek medical attention

Inhalation

Leave the area if breathing is labored seek medical attention

Ingestion

Do not induce vomiting unless instructed by physician, seek medical Attention

7. – Precautions for Safe Handling and Use

Steps to be taken in Case Material is spilled or released

Dike and contain; absorb or scrape up excess into a container for disposal

Waste Disposal Method

This material contains a hazardous constituent as identified in RCRA Title 40 CRF261 Appendix VIII and must be disposed of in accordance with local, state, and federal regulations

Precautions to be taken in Handling and Storing

Avoid prolonged or repeated skin contact; use with adequate ventilation; reseal partial containers; use good general housekeeping procedures

Other Precautions

When mixing with Part B follow precautions for handling isocyanates. Sanding of cured rigid urethanes creates dust which presents health, fire, and explosion hazard. Urethane dust irritates the eyes, nose and respiratory tract and dust from partially cured urethanes can cause the same symptoms as overexposure to isocyanates. Do not inhale dust. Respiratory protection is required. Remove all ignition sources from areas where dust is present. Maintain clean work area by vacuuming up dust. Avoid clean-up methods that generate clouds, as explosive levels for urethane dust can be generated.

8. – Control Measures

Respiratory equipment	Yes – Organic vapor respirator or self-contained breathing apparatus suggested if heated or sprayed.
Local exhaust ventilation	Recommended to remove heated vapors
Protective gloves	Rubber or plastic
Eye Protection	Safety goggles
Other protection, clothing Or equipment	Safety Toe Shoes where toes/feet are exposed to rolling falling object Clean log leg, long sleeve clothing
Work/Hygienic Practices	Wash thoroughly before eating, smoking, or applying make-up

Work Practices

Recognize where silica dust may be generated and plan ahead to eliminate or control the dust at the source. The best industrial ventilation system or any other type of well-engineered system designed to improve the working environment and reduce the amount of dust generated can easily be defeated by bad work practices of the employees. Each person's work practice is different by nature, experience, attitude, etc. the results of personal dust sample analysis carried out on two employees working side by side can be very different. It is very important when a dust control program is initiated in a fabricating plant or at a job site that the work practices of each employee be examined. The key to making employees "dust conscious" is information and training. Use a respirator approved for protection against crystalline silica-containing dust. Do not alter the respirator in any way. Note that beards or mustaches can interfere with the respirator's seal to the face. A respiratory protection program should be in place and work areas should be regulated with warning signs to avoid accidental contamination.

Housekeeping is the most important of all dust-control methods. Simply cleaning up all possible emission sources as quickly as possible is the most effective dust-suppression technique. Practices such as vacuuming with HEPA filter and wet floor cleaning prevent high dust levels and improve already clean environments. These two methods will reduce dust by 50% to 75%. Because these cleaning methods are labor-intensive rather than capital-intensive, they can easily be used at both the stone shop and the construction site.

Eating facilities: Do not eat, drink or use tobacco in areas where there is dust containing crystalline silica. Wash hands thoroughly prior to eating.

Clothing Change Area: consider changing into disposable or washable work clothes at the job site. Shower (where available) and change into clean clothing before leaving the job site to prevent contamination of cars, homes and other areas.

Category Descriptions

Category A Stones: All stones in this category contain silica in the form of silica dioxide. The terms “crystalline silica” and “quartz” refer to the same thing. Quartz is a natural constituent of the Earth’s crust and is not chemically combined with any other substance. Granite, quartz monzonite, and granodiorite contain 70% to 77% silica, 11% to 13% alumina, 3% to 5% potassium oxide, 3% to 5% soda, 1% lime, 2% to 3% total iron, and less than 1% of magnesia and tilania. These materials are known, to a lesser or greater degree, to be carcinogenic. Silica is the primary mineral. Exposure to silica-containing dust at any time poses a potential health hazard. The improper control and disposal of silica-containing dust today not only poses a hazard now, but it can continue to contaminate the work atmosphere as long as workers and equipment work or travel in the area. These stones should be worked under water to avoid creating dust. Dust produced from these stone can cause silicosis.

Category B Stones: These stones are composed primarily of calcite in the form of calcium carbonate or dolomite. Dolomite differs from calcite in the addition of magnesium ions. The magnesium ions are not the same size as calcium ions, and the two ions seem incompatible in the same layer. In calcite, the structure is composed of alternating layers of carbonate ions and calcium ions. In dolomite, the magnesium ions occupy one layer by themselves, followed by a carbonate layer which is followed by an exclusively calcite layer, and so on. This is why calcite stones react promptly with acids and vinegar, while dolomite does not. These stones may contain trace quantities of iron oxide, chlorite, epidote, or graphite, which give the stones their color. Some limestone may contain up to 5% silica, feldspar, clays and pyrite, while oolite limestone may contain chalk, coquina and other foraminiferan containing deposits.

Calcite is one of the most common minerals on the face of the Earth, comprising about 4% by weight of the Earth’s crust. For our purposes in completing OSHA Material Safety Data Sheets, these elements are combined into Category B. OSHA considers dust from Category B Stones to be nuisance particulate that can accumulate in the lungs. As Category B Stones contain less than 1% crystalline silica, they are not as heavily cautioned, and it is recommended that these stones be worked in a manner that avoids the production of dust.