



MATERIAL SAFETY DATA SHEET

Silica
#37001 #37100

SECTION I – PRODUCTION IDENTIFICATION

SILICA

Chemical Name & Synonyms: Silicon Dioxide	Chemical Family: Amorphous Silica	Product Identification # 04060E-35-21-00 08110E-35-21-00
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SECTION II – HAZARD INGREDIENTS/IDENTITY INFORMATION

The above products are considered "articles" according to OSHA hazard Communication Standard 29 CFR 1910.1200 and, as such, are exempt from the Material Safety Data Sheet provisions of 29 CFR 1910.1200(G)(6). As a service to the customer, Steiner Industries Inc. has prepared this Material Safety Data Sheet to provide appropriate safety and handling information. These products are considered non-hazardous when used according to accepted practices for the intended use.

<u>AS MANUFACTURED:</u>	<u>WT. %</u>	<u>TVL/PEL</u>
Silicon Dioxide SiO ₂	>94%	Not Listed
Proprietary Ingredients	3-3.5%	Not Listed
Amorphous Silica		ACGIH TLV: 10 mg/m ³
Total dust		ACGIH TLV: 10 mg/m ³
		OSHA PEL: 15 mg/m ³
Respirable dust		OSHA PEL: 5 mg/m ³

There is not an established threshold limit value (TLV) that is directly applicable to the Z-Sil family of silica materials. Chemically, Z-Sil and Silica Mat products are composed of amorphous silica with trace elements of aluminum, titanium and iron. The products are all continuous filament materials.

The individual filament sizes of the Silica fabrics are nominally 6.0 microns while the Silica Mats are produced from 6.0 to 9.0 micron filaments. Both are considered "non-respirable". Z-Sil and Silica Mats will partially transform to a cristabolite structure when subjected to steady state temperatures above 1850° F. In the event that the Z-Sil materials are subjected to continuous temperatures exceeding 1850° F appropriate caution should be exercised. SEE SECTION IX

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SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT	N/A	SPECIFIC GRAVITY (H ₂ O=1)	2.1
VAPOR PRESSURE (MM HG)	NA	MELTING POINT	N/A
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE	
PERCENT VOLATILE BY VOLUME		N/A (BUTYL ACETATE=1)	N/A
SOLUBILITY IN WATER	INSOLUBLE		
APPEARANCE AND ODOR			

Z-SIL FABRIC Vitreous silicate fibers six microns in diameter bound together in strands and woven into golden brown product with insignificant odor.

SILICA MAT Amorphous silicate fibers needled into mats of various thickness, white in color with no odor.

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED)	N/A	FLAMMABLE LIMIT	LEL: N/A UEL: N/A
EXTINGUISHING MEDIA		N/A	Will not burn
SPECIAL FIRE FIGHTING PROCEDURES	None		
UNUSUAL FIRE AND EXPLOSION HAZARDS	None Known		

SECTION V – REACTIVITY DATA

STABILITY	Stable
INCOMPATIBILITY	Z-Sil and Silica Mat materials are not compatible with the basic phosphates, hydrofluoric acids, some oxides and hydroxides; especially at elevated temperatures.
HAZARDOUS DECOMPOSITION OR BYPRODUCTS	In a sustained fire, the organic binders will decompose releasing minor quantities of decomposition products believed to be insufficient to be harmful.
HAZARDOUS POLYMERIZATION	Will not occur
CONDITIONS TO AVOID	See Incompatibility
CONDITIONS TO AVOID FOR HAZARDOUS POLYMERIZATION	None known

SECTION VI – HEALTH HAZARD DATA

ROUTES OF ENTRY	INHALATION No toxic effects are known to be associated with the inhalation of vapors from this material under normal conditions. Z-Sil and Silica Mats are made of non-respirable fibers.
	SKIN Short contact periods with human skin are not likely to produce skin irritation. Repeated/prolonged contact can induce mild irritation. This product is not likely to be absorbed through human skin.
	EYES May cause a physical irritation to the eye.

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SECTION VI – HEALTH HAZARD DATA (cont'd)

CARCINOGENICITY This product is not known as a carcinogen
HEALTH HAZARD (ACUTE & CHRONIC) None known
SIGNS AND SYMPTOMS OF EXPOSURE Minor irritation
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE Experimental studies have shown that chemically exfoliated vermiculite induces a lung response which is similar to that of mica exposure. After repeated, prolonged exposure to excessive concentrations of mica dust, some mica workers have developed an accumulation of dust in the lungs which is observed only by chest x-ray and is not considered hazardous to workers' health.
EMERGENCY FIRST AID PROCEDURES
SKIN Wash any material off skin with soap and cool water. If redness, itching or burning sensation develops, get medical attention.
EYES Flush with water for at least 15 minutes. If irritation develops, get medical attention.
INGESTION Not expected to occur.

SECTION VII – PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Material is a solid. Pick up big pieces and sweep up any scrapes.
WASTE DISPOSAL METHOD Dispose of as any other innocuous material. Discarded product is not a hazardous waste under RCRA 40 CFR 261.
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING For maximum comfort, avoid excessive contact with skin and use good personal hygiene.
OTHER PRECAUTIONS If excessive dust is generated, Use a respirator approved by MSHA or NIOSH for dust.

SECTION VIII – CONTROL MEASURES

RESPIRATOR PROTECTION (specify type) A NIOSH type TC-21C-Safety Brochure dust respirator is recommended if significant dust is created in handling or processing and should be required if necessary to prevent exposure above limits for total and respirable dust.
VENTILATION LOCAL EXHAUST Is not necessary. Use product in well ventilated areas.
SPECIAL None
MECHANICAL None
OTHER None
PROTECTIVE GLOVES Rubber or synthetic gloves are recommended when necessary to prevent prolonged or repeated skin contact
EYE PROTECTION As generally good practice, safety glasses can be worn.
OTHER PROTECTIVE CLOTHING OR EQUIPMENT None required.
WORK HYGIENIC PRACTICES Avoid excessive contact with skin.
Wash thoroughly with soap and water after handling of the material.

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SECTION IX – SPECIAL PROTECTION INFORMATION

Z-Sil and Silica Mats will partially transform to a cristabolite structure when subjected to steady state temperatures above 1850° F. In the event that the Z-Sil and Mat materials are subjected to continuous temperatures exceeding 1850° F appropriate caution should be exercised.

AFTER-SERVICE FIBERS/CHISTABOLITE

CONCENTRATION*

RESPIRATOR

Up to 5 fibers/cc or Up to 0.5 mg/m³
respirable cristabolite

Half-face, air-purifying respirator with high-
efficiency particulate air (HEPA) filter cartridges

5-25 fibers/cc or 0.5-2.5 mg/m³
respirable cristabolite

Full-face air- purifying respirator equipped with
high-efficiency particulate air (HEPA) filter
cartridges or powered air-purifying respirator
(PAPR) equipped with HEPA filter cartridges

Greater than: 25 fibers/cc or 2.5
mg/m³ respirable cristabolite

Full-face positive pressure supplied air respirator

** The information herein is given in good faith, but no warranty, expressed or implied is made and we assume no liability from its use.
Users should make their own investigations to determine the suitability of the information for their particular purposes.

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