



MATERIAL SAFETY DATA SHEET

MSDS014

SECTION I - PRODUCTION IDENTIFICATION

Z-SIL AR PRODUCTS

MANUFACTURER:

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Date: 01/14/2013

Prepared by: Newtex Quality Department

SECTION II - INGREDIENTS

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, Newtex 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>COMMON NAME:</u>	<u>CHEMICAL NAME:</u>	<u>CAS No.</u>	<u>WT.%</u>
Silica Fibers			99-100%
- SiO ₂			>94%
- Al ₂ O ₃			5%
Vermiculite Coating			<1%

SECTION III - HAZARD IDENTIFICATION

Emergency Overview

No unusual conditions are expected from this product.
Fiberglass may cause mechanical irritation to the skin, eye, and upper respiratory tract.

PRIMARY ROUTES OF ENTRY:

Inhalation: No effects are known to be associated with the inhalation of vapors from this material. Breathing dusts and fibers may cause short-term mechanical irritation of the nose, throat and upper respiratory tract.

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- Skin: Short contact with human skin is 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.
- Ingestion: Although not likely to occur in industrial applications, accidental ingestion may cause irritation of the mouth and gastrointestinal tract.

CHRONIC HEALTH EFFECTS:

There is no known chronic health effects associated with long term use or contact with this product. As manufactured, Z-SIL AR PRODUCTS are Non-respirable. Non-respirable fibers cannot reach the deep lung, because they have a diameter of greater than 3.5 microns. Fibers of this diameter cannot penetrate the narrow, bending passages of the human respiratory tract to reach the lower regions of the lung and thus, have no possibility of causing serious pulmonary damage. Instead they are deposited on the surface of the upper respiratory tract, nose, or pharynx. These fibers are then cleared through normal physiological mechanisms. Chopped, crushed or severely mechanically processed fiberglass may contain a very small amount of respirable fibers that could reach the deep lung. There is not an established threshold limit (TLV) that is directly applicable to Z-SIL AR PRODUCTS. Chemically, Z-SIL AR PRODUCTS are composed of amorphous silica with trace elements of aluminum, titanium and iron. The products are all continuous filament materials.

CARCINOGENICITY:

This product is not known as a carcinogen.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Respiratory or skin conditions that are aggravated by mechanical irritants may be at an increased risk for worsening from exposure to this product.

SECTION IV – FIRST AID

- INHALATION: Move the person to fresh air. Seek medical attention if irritation persists.
- SKIN: Wash any material off skin with mild soap and cool water. Do not rub or scratch irritated areas. This may force fibers into the skin. Seek medical attention if irritation persists.
- EYES: Flush with water for at least 15 minutes. Seek medical attention if irritation persists.
- INGESTION: Not expected to occur. Should ingestion take place, the person should be watched for several days to ensure intestinal blockage does not occur.

SECTION V - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED):	N/A
FLAMMABLE LIMIT:	LEL: N/A UEL: N/A
AUTO IGNITION TEMPERATURE:	N/A
UNUSUAL FIRE AND EXPLOSIVE HAZARDS:	None
EXTINGUISHING MEDIA:	Silica will not support combustion. In a sustained fire use an extinguisher appropriate for surrounding fire.
SPECIAL FIRE FIGHTING PROCEDURES:	Silica itself will not support combustion, but in a sustained fire, proper protection against products of combustion for the fuel and the sizing must be worn. Use self-contained breathing apparatus (SCBA) and full bunker turnout gear in a sustained fire.
HAZARDOUS COMBUSTION PRODUCTS:	In a sustained fire, the organic binders will decompose, releasing minor quantities of decomposition products believed to be insufficient to be harmful.

SECTION VI - SPILL OR LEAK PROCEDURES

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

<u>Land Spill:</u>	Material is a solid. Pick up the larger pieces and wet sweep or vacuum up any scrapes. Place in a suitable container for disposal as a non-hazardous waste.
<u>Water Spill:</u>	This material will sink and disperse along the bottom of waterways and ponds. Large pieces should be removed and placed in a suitable container for disposal. Smaller pieces cannot be easily removed after it is waterborne; however, the material is non-hazardous in water.
<u>Air Release:</u>	The material will settle out of the air where it can be cleaned as a land spill.

SECTION VII – HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING:	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 NIOSH for dust. This material is not



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an electrical conductor and may accumulate static charge.

STORAGE TEMPERATURE: N/A

STORAGE PRESSURE: N/A

GENERAL: No special storage procedures are required for this material.

SECTION VIII – EXPOSURE CONTROL/ PERSONAL PROTECTION

EXPOSURE LIMITS:

<u>COMMON NAME:</u>	<u>OSHA PEL</u> 8-hr TWA	<u>ACGIH TLV</u> 8-hr TWA
Silica Fibers		
- Amorphous Silica	Not Established	10 mg/m ³
- Total Dust	15 mg/m ³	10 mg/m ³
- Respirable Dust	5 mg/m ³	Not Established
Vermiculite Coating	Not Listed	Not Listed
Size	None Established	None Established

OSHA = Occupational Safety and Health Administration

ACGIH = American Conference of Governmental Industrial Hygienists

PEL = Permissible Exposure Limits

TLV = Threshold Limit Value

PNOC = Particles Not Otherwise Classified

As manufactured the continuous filament silica in this product is not respirable. Continuous filament glass products that are chopped, crushed or severely mechanically processed during manufacturing or use may contain a very small amount of respirable particulate, some of which may be glass shards.

VENTILATION: Use local exhaust or general room dilution to maintain employee exposures below occupational exposure limits.

LOCAL EXHAUST: Is not necessary. Use if required to keep employees exposure below occupational exposure limits during use or manufacturing.

SPECIAL: Z-SIL Products will partially transform to a cristabolite structure when subjected to steady state temperatures above 1850°F. In the event that the Z-SIL Products are subjected to continuous temperatures exceeding 1850 F, appropriate caution should be exercised.



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AFTER-SERVICE FIBERS/CRISTABOLITE

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

MECHANICAL: None

OTHER: None

RESPIRATORY PROTECTION: If the use or manufacturing of this product generates high dust levels, the level of glass fibers in the air exceeds the occupational exposure limits or if irritation occurs use a properly fitted NIOSH/MSHA approved disposable respirator such as 3M model 8210 (or 3M model 8271 in high humidity environments). Always use a respirator in accordance with your company's respiratory protection program, local regulations, and OSHA regulation 29CFR1910.134.

PROTECTIVE GLOVES: Not required, but gloves and barrier creams can be used to protect against mechanical irritation of the hands.

EYE PROTECTION: As generally good practice, safety glasses with side shields should be worn.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: None required. Good personal hygiene, barrier creams, caps, coveralls, loose fitting long sleeve shirt that covers to the base of the neck and long pants will maximize comfort. Skin irritation is known to occur chiefly at pressure points such as around the neck, wrist, waist, and between fingers.

WORK HYGIENIC PRACTICES: Handle using good industrial hygiene and safety practices. Wash thoroughly with mild soap and cool water after handling of the material. Remove material from clothing using vacuum equipment (never used compressed air). Always wash work cloths separately from other clothing. Wipe out washer or sink to prevent loose glass fibers from getting on other clothing. Keep the work area clean of dusts and fibers released during processing or fabrication. Use vacuum equipment to clean up product. Avoid dry sweeping or using compressed air as these

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techniques re-suspend dusts and fibers into the air. Have access to a shower and eye wash station.

SECTION IX - PHYSICAL DATA

BOILING POINT:	Not Applicable
MELTING POINT:	Not Applicable
FREEZING POINT:	Not Applicable
SPECIFIC GRAVITY RANGE (H ₂ O=1):	2.1
pH:	Not Applicable
VISCOSITY:	Not Applicable
SOLUBILITY IN WATER:	Insoluble
PERCENT VOLATILE BY VOLUME:	None
VAPOR DENSITY (Air=1):	Not Applicable
VAPOR PRESSURE (mm Hg):	Not Applicable
EVAPORATION RATE (Butyl Acetate=1):	Not Applicable
PHYSICAL STATE:	Solid
APPEARANCE AND ODOR:	Off-white yarns woven together into a fabric with no significant odor.

SECTION X - REACTIVITY DATA

STABILITY:	Stable
CONDITIONS TO AVOID:	See INCOMPATIBILITY
INCOMPATIBILITY:	Z-SIL AR PRODUCTS are not compatible with basic phosphates, hydrofluoric acids, some oxides and hydroxides; especially at elevated temperature

HAZARDOUS DECOMPOSITION OR BYPRODUCTS:

In a sustained fire, the binders will decompose releasing minor quantities of decomposition products believed to be insufficient to be harmful.

HAZARDOUS POLYMERIZATION: Will not occur

SECTION XI - TOXICOLOGICAL INFORMATION

CARCINOGENICITY: The table below indicates whether or not each agency has listed each ingredient as a carcinogen.

<u>INGREDIENT</u>	<u>ACGIH</u>	<u>IARC</u>	<u>NTP</u>	<u>OSHA</u>	<u>97/69/EC</u>
Silica Fibers	No	No	No	No	No
Vermiculite Coating	Yes	No	Yes	Yes	No
Size	No	No	No	No	No

ACGIH: A4 Not Classifiable as a Human Carcinogen

IARC: 3 Not Classifiable with respect to Human Carcinogenicity

Z-SIL Products will partially transform to a cristabolite structure, a crystalline form of silica when subjected to steady state temperatures above 1850° F. In the event that the Z-SIL Products are subjected to continuous temperatures exceeding 1850° F, appropriate caution should be exercised. The OSHA PEL for cristobalite is 0.05 mg/m³ (respirable).

SECTION XII - ECOLOGICAL INFORMATION

This material is not expected to cause harm to animals, plants or fish. No Special precautions are needed in case of a release or spill.

SECTION XIII – DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Waste material must be disposed of in accordance with federal, state, provincial and local environmental control regulations. Dispose of as any other innocuous material. Product is not a hazardous waste under RCRA 40 CFR 261.



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SECTION XIV - TRANSPORTATION INFORMATION

DOT SHIPPING NAMES:	Not regulated
HAZARD CLASS OR DIVISION:	None
SECONDARY:	None
IDENTIFICATION NUMBER:	None
PACKING GROUP:	None
LABEL(S) REQUIRED (if not excepted):	None
SPECIAL PROVISIONS:	None
PACKAGE EXCEPTIONS:	None
NON-BULK PACKAGING:	None
BULK PACKAGING:	None
EPA HAZARDOUS SUBSTANCES:	None
REPORTABLE QUANTITY:	Not Applicable
QUANTITY LIMITATIONS:	
PASSENGER AIRCRAFT:	None
CARGO AIRCRAFT:	None
MARINE POLLUTANTS:	None
FREIGHT DESCRIPTION:	None
HAZARDOUS MATERIAL SHIPPING DESCRIPTION:	None

TRANSPORTATION OF DANGEROUS GOODS – CANADA

DOT SHIPPING NAMES:	Not regulated
TDG HAZARD CLASSIFICATION	
PRIMARY:	None
SECONDARY:	None
IMO CLASSIFICATION:	None
ICAO/IATA CLASSIFICATION:	None
PRODUCT IDENTIFICATION NUMBER:	None
PACKING GROUP:	None
CONTROL TEMPERATURE:	None
EMERGENCY TEMPERATURE:	None
SCHEDULE XII QUANTITY RESTRICTIONS:	None
REPORTABLE QUANTITY FOR US SHIPMENTS:	None
IATA PACKAGING INSTRUCTIONS	
PASSENGER/CARGO:	None
CARGO ONLY:	None
LIMITED QUANTITY:	None
MAXIMUM NET QUANTITY PER PACKAGE	
PASSENGER/CARGO:	None
CARGO ONLY:	None
LIMITED QUANTITY:	None



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SPECIAL PROVISIONS: None

SECTION XV - REGULATORY INFORMATION

TSCA STATUS: Each ingredient is on the Inventory.

SARA TITLE III

Hazard Categories:

Acute Health:	Yes
Chronic Health:	No
Fire Hazard:	No
Pressure Hazard:	No
Reactive Hazard:	No

Reportable Ingredients:

Section 302/304:	None
Section 313:	None

CERCLA HAZARDOUS SUBSTANCE: Not listed

CALIFORNIA PROPOSITION 65

Chemical	CAS Number	Concentration Parts Per Billion (PPB) Maximum
1,4-Dioxane	123-91-1	< 5.0
Acetaldehyde	75-07-0	< 5.0
Ethylene Oxide	75-21-8	< 5.0
Formaldehyde	50-00-0	< 12.1

CLEAN AIR ACT: No ingredient is listed

NSR STATUS (CANADA): Each ingredient is on the DSL (Domestic substance list)

WHMIS (CANADA) STATUS: Not Controlled
 WHMIS Classification(s): None

Z-SIL AR PRODUCTS are considered articles, therefore are exempt from the following requirements:

- USA: TSCA – Toxic Substances Control Act
- EUROPE: EINECS – European Inventory of Existing Commercial Chemical Substances
- CANADA: DSL – Domestic Substance List
- AUSTRALIA: AICS – Australian Inventory of Chemical Substances
- KOREA: ECL (KECI) – Korean Existing Chemical Inventory
- JAPAN: MITI (ENCS) – Existing and New Chemical Substances
- PHILIPPINES: PICCS – Philippines Inventory of Chemicals and Chemical Substances



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SECTION XVI – OTHER INFORMATION

HMIS AND NFPA HAZARD RATINGS

<u>HMIS Rating</u>	<u>NFPA Rating</u>
Health (acute): 1	Health: 1
Flammability: 0	Flammability: 0
Reactivity: 0	Reactivity: 0
Personal Protection: *	Unusual Hazards: None

* Personal protective equipment requirements must be supplied by the user depending upon use.

OZONE-DEPLETING CHEMICALS (CFCs)

Z-SIL AR PRODUCTS do not contain, nor are manufactured with, Class I or Class II Ozone-Depleting Chemicals (CFCs) identified in the Clean Air Act Amendment, 1990 List of Ozone Depleting Chemicals.

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.