SDS Number: AXSF-1 **Revised/Reviewed: 08/15/2018** **Revised From: 06/30/2016**

SECTION 1 • PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME OR NUMBER:

- **ARMATEX®-SF, JETSTAR®** silicone coated and/or impregnated fiberglass textile products; cloth, tape, sleeving, rope, cordage, thread and mat. Note: Refer to Appendix A for more detailed product identification.
- **THERMOPAK®** custom fabricated products are made using one or more of the above listed product(s).

COMPANY:	Mid-Mountain Materials, Inc.		TELEPHONE:	206-762-7600
ADDRESS:	Office:	PO Box 800 2731 77th Ave. SE, Ste. 100 Mercer Island, WA 98040	EMERGENCY TELEPHONE NUMBER:	800-382-2208
			FAX:	206-762-7694
	Plant:	18825 67th Ave. NE Arlington, WA 98223		

SECTION 2 • HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

PRIMARY ROUTE(S) OF EXPOSURE: Inhalation

(Acute): Exposure to glass fibers sometimes causes irritation of the skin. Less frequently irritation of the eyes, nose, or throat may occur. Ingestion may cause short-term irritation of the stomach and intestines. See section 8 of SDS for exposure controls.

(Chronic): There are no known health affects connected with long term use or contact with this product. See section 11 of SDS for toxicological information.

SECTION 3 • COMPOSITION / INFORMATION ON INGREDIENTS

CHEMICAL / COMMON NAME	C.A.S. NUMBER	% BY WEIGHT (opt)
• Continuous Filament Fiberglass	65997-17-3	
• Polysiloxanes (Silicone)(Cured)	63148-53-8	
• Zinc Borate	10192-46-8	Trace

See section 8 of SDS for data on exposure limits.

SECTION 4 • FIRST-AID MEASURES

EMERGENCY/FIRST AID PROCEDURES

SKIN: Rinse contacted areas with room temperature to cool water, then wash gently with mild soap. If fiberglass becomes embedded, seek medical attention.

EYE: Remove contact lens. Flush eyes with clear water for at least 15 minutes - seek medical attention.

INHALATION: Move person to fresh air. Seek medical attention if irritation persists.

INGESTION: Ingestion of this material is not likely. If it does occur, watch for several days to make sure intestinal blockage does not occur. If there is blockage, seek medical attention.

SECTION 5 • FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: N/A

SPECIAL FIRE FIGHTING INSTRUCTIONS: In a sustained fire, self - contained breathing apparatus, (SCBA), should be worn.

SPECIAL EXPOSURE HAZARDS FROM FIRE: Hazardous decomposition products of combustion from sizing and binders may be released in a sustained fire. The larger part of the product is nonflammable E-glass. In a sustained fire, sizing and binders may decompose, releasing products of combustion including carbon dioxide, carbon monoxide, and water. Additionally, there are many chemicals that can evolve during any partial decomposition of chemical products. The amounts or identities cannot be predicted and can differ in each situation.

SECTION 6 • ACCIDENTAL RELEASE MEASURES

ACTION TO TAKE FOR SPILLS/LEAK: Wet and sweep or vacuum fibrous dust.

SECTION 7 • HANDLING AND STORAGE

PRECAUTIONS: Keep airborne dust concentrations below regulated levels. For optimum performance, store at 80°F (27°C) or less and relative humidity less than 65%. Not an electrical conductor. Can accumulate static charge.

SECTION 8 • EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS/WORK PRACTICES

VENTILATION: Local exhaust ventilation (if needed) to maintain appropriate airborne dust levels.

PERSONAL PROTECTIVE EQUIPMENT/PROTECTIVE MEASURES

RESPIRATORY PROTECTION: Some applications of these products may not require respiratory protection for fiberglass. However, if airborne fibrous glass concentrations exceed the OSHA permissible limits or if irritation occurs, use a properly fitted NIOSH approved N95 particulate filtering respirator, or better. Use respiratory protection in accordance with your company's respiratory protection program, local regulations, and OSHA regulations under CFR 1910.134.

PROTECTIVE CLOTHING: Loose-fitting long-sleeved shirt that covers to the base of the neck, with long pants and gloves. Skin irritation is known to occur chiefly at pressure points such as around neck, wrist, waist, and between fingers. Work clothing should be laundered separately from other clothing before reuse.

EYE PROTECTION: Safety glasses with side shields or goggles.

WORK/HYGIENIC PRACTICES: Wash thoroughly with soap and water after use.

EXPOSURE GUIDELINES

INGREDIENT

• Fiberglass Continuous Filament

ACGIH TLV: (8-hr TWA)	5 mg/m^3 inhalable fraction 1 f/cc respirable fibers
OSHA PEL: (8-hr TWA)	15 mg/m^3 total 5 mg/m^3 respirable

Note: OSHA does not prescribe a Permissible Exposure Limit (PEL), but relies on the PEL-TWA's for nuisance dust as noted.

AIR SAMPLING/ANALYTICAL METHODS: Gravimetric total dust NIOSH Sampling & Analytical Method 0500; the Gravimetric respirable dust NIOSH Method 0600 and the NIOSH 7400 B Fiber Counting Rules; and IOM Sampler for meeting ACGIH criteria for inhalable particulate mass.

SECTION 9 • PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Solid

COLOR AND ODOR: Various colors, see Appendix A. No odor.

pH: N/A

MELTING POINT: N/A

BOILING POINT: N/A

FLASH POINT: N/A

EVAPORATIVE RATE (n-Butyl Acetate = 1): N/A

FLAMMABILITY LIMITS: N/A

LOWER EXPLOSIVE LIMIT: None - does not support flame.

UPPER EXPLOSIVE LIMIT: None – does not support flame.

VAPOR PRESSURE: (mm Hg @ 20°C): N/A

PERCENT SOLUBILITY IN WATER: Insoluble

SPECIFIC GRAVITY (water = 1): ND

AUTO IGNITION TEMPERATURE: N/A

VISCOSITY: N/A

PERCENT VOLATILE BY VOLUME: N/A

POUR POINT: N/A

SECTION 10 • STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions of use.

INCOMPATIBILITY: None known.

HAZARDOUS POLYMERIZATION: Will not occur.

POSSIBLE HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, silicone dioxide, crystalline silica, fibers, and dust.

SECTION 11 • TOXICOLOGICAL INFORMATION

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

INGREDIENT	AGGIH	IARC	NTP	OSHA
• Fiber Glass Continuous Filament	A4	No	No	No
(See detailed information on fiber glass, below)				
• Polysiloxane (Silicone)	No	No	No	No
• Zinc Borate	No	No	No	No

ADDITIONAL INFORMATION – FIBER GLASS (Fiberglass): The following information pertains specifically to Fiber Glass: Factors in fiber toxicity include fiber dimensions, and durability and degree of exposure.

FIBER DIMENSIONS: Fibers are either non-respirable or respirable. Respirable fibers can penetrate to the "deep" lung. According to the World Health Organization (WHO), man made-mineral fibers with diameters equal to or greater than (≥) 3.0 microns are non-respirable (1). According to the National Institute for Occupational Safety and Health (NIOSH), fibers with diameters > 3.5 µm are non-respirable (2). The narrow, bending passages of the human respiratory system do not permit the relatively larger, non-respirable fibers to enter the "deep" lung. Instead, they deposit on the surfaces of the upper respiratory tract, nose, or pharynx. They are then cleared through normal physiological mechanisms. As manufactured, continuous filament glass fibers are not respirable (>3.5 micrometers in diameter). 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 respirable fibers. Mechanical processing may cause the filaments to fracture, producing small pieces (fibers and particles) of the larger continuous filaments. There is no evidence that these fibers break longitudinally into smaller diameters. Upon breakage, the fibers may break horizontally into smaller lengths but not longitudinally into smaller diameters. As with any sanding/grinding activity, respirable and non-respirable particles may be generated.

DURABILITY: The term "durability" refers to how long a fiber will remain in the lung. E-glass composition has been found to be durable in the human lung; however, if fibers are non-respirable their durability is unimportant.

DEGREE OF EXPOSURE: The results in terms of airborne concentrations of glass fibers and total dust would indicate that the workmen's exposure to these materials is negligible" (1). See Section 2 of SDS for effects resulting from exposure.

CARCINOGENICITY: (Fiberglass, Continuous Filament) The International Agency for Research on Cancer (IARC) in 2002, categorized fiberglass continuous filament as not classifiable with respect to human carcinogenicity (Group 3). The evidence from human as well as animal studies was evaluated by IARC with results being insufficient to classify fiberglass continuous filament as a possible, probable, or confirmed cancer-causing material.

The ACGIH A4 classification, not classifiable as a human carcinogen, for respirable continuous filament glass fibers is based on inadequate data in terms of its carcinogenicity in humans and/or

animals. For respirable continuous filament glass fibers, a TLV – TWA of 1 fiber/cc with an ACGIH A4 classification was adopted for non-respirable glass filament fiber, measured as inhalable dust, to prevent mechanical irritation of the upper respiratory tract.

Continuous filament fiberglass is not listed in the National Toxicology Program (NTP) 14th Annual Report on Carcinogens.

Route	Species	Exposure and Dose
Zinc Borate		
Oral	Rat	LD50 > 10 g/kg
Skin	Rabbit	LD50 > 10 g/kg

SECTION 12 • ECOLOGICAL INFORMATION

Fiberglass is generally considered to be an inert solid waste, and no special precautions should be taken in case it is released or spilled. These 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. Product is not expected to present an environmental hazard.

SECTION 13 • DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose solid waste in accordance with local, state, and federal regulations. Not considered a hazardous waste under RCRA regulations.

SECTION 14 • TRANSPORT INFORMATION

UN/NA CODE: None.

PROPER SHIPPING NAME: Not regulated.

HAZARD CLASS: Not considered hazardous waste under federal "RCRA" regulations.

DOT INFORMATION: Not regulated.

LABELS REQUIRED: None.

BILL OF LADING DESCRIPTION: None.

SECTION 15 • ADDITIONAL REGULATORY INFORMATION

UNITED STATES: EPA Toxic Substances Control Act (TSCA): Fiberglass carries no Chemical Abstracts Index name, CAS registry number or EPA code designation number. Fiberglass is an "article" as defined in Section 710.2(f). It is exempt from Sections 5 and 8(b) reporting requirements. PPG considers these products exempt from EPA SARA Title III reporting requirements as they do not meet its health or physical hazards definitions nor contain any SARA 313 chemical ingredients in excess of EPA's de minimis concentrations. OSHA Hazard Communication Standard: Subject to the applicable requirements of this regulation. Per this SDS revision date, these fiberglass products are not known to contain chemical ingredients listed by the Pennsylvania, New Jersey or Massachusetts Right to Know Law in excess of amounts requiring reporting on such substances' SDS or labels.

CALIFORNIA PROP 65: Labeling is required. According to the National Toxicology Program (NTP), there is sufficient evidence of carcinogenicity from studies in experimental animals of inhalable glass wool fibers as a class and evidence from studies of fiber properties indicate that only certain fibers within this class — specifically, fibers that are biopersistent in the lung or tracheobronchial region — are reasonably anticipated to be human carcinogens.

CANADA: Exempt from Canadian Environmental Protection Act (CEPA) reporting on the Domestic Substances Lists as these products are considered "articles". Exempt from Workplace Hazardous Materials Information System (WHMIS) labeling & SDS requirements. However, fibrous glass is on the Ingredient Disclosure List. It must be listed as an ingredient on SDS for "controlled products" with fiberglass concentrations greater than 1.0%.

EUROPEAN ECONOMIC COMMITTEE (EEC) LABELING CLASSIFICATION: Fiberglass does not meet the classification for a "dangerous substance" according to 67/548/EEC and 97/69/EC. The E-glass composition has been incorporated in the EINECS under CAS number 65997-17-3 as a glass oxide.

JAPAN: Chemical Substances Control Law: Fiberglass is exempt from this law.

SECTION 16 • OTHER APPLICABLE INFORMATION

HMIS and NFPA Hazard Rating:

CATEGORY	HMIS	NFPA
Acute Health	1	1
Flammability	0	0
Reactivity	0	0

NFPA Unusual Hazards: None .
HMIS Personal Protection: Supplied by user; dependent upon use.

APPENDIX A

ARMATEX silicone coated textile products are typically denoted SF, as in "ARMATEX SF". In this specific product line, the ARMATEX silicone coated products are also coated with ARMATEX Q-Mix black refractory coating. The color of the silicone-coated side of a specific product is denoted by the insertion of a code letter between the S and the F. Typical color denotations are as follows:

A	Aluminum (gray)	B	Black
DG	Dark Gray	G	Gray
N	Green	O	Orange
OD	Olive Drab	P	Pink
R	Red	S	Salmon
U	Blue	Y	Yellow

The corresponding number(s) refer to thickness of material, weight of fabric, dimensions of rope, tape, sleeving, etc.

EXAMPLES:

• ARMATEX SAF17-AL = **S**ilicone **A**luminum (color) **F**iberglass **17** ounce per square yard (finished weight w/o aluminum foil) **AL**uminized one side.

• ARMATEX SRF32-AL = **S**ilicone **R**ed **F**iberglass, **32** ounces per square yard (finished weight w/o aluminum foil) **AL**uminized one side.

DEFINITIONS

29 CFR 1910.134 & 1926.103:	OSHA Respiratory Protection Standards
29 CFR 1910.1200 & 1926.59:	OSHA Hazard Communication
ACGIH	American Conference of Governmental Industrial Hygienists
ADR	Carriage of Dangerous Goods by Road (International Regulation)
CAA	Clean Air Act
CAS	Chemical Abstract Services
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
DOT	Department of Transportation
DSL	Domestic Substances List (Canada)
EEC	European Economic Committee

EINECS	European Inventory of Existing Commercial Chemical Substances
EPA	Environmental Protection Agency
EU	European Union
HEPA	High Efficiency Particulate Air
HMIS	Hazardous Materials Information System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods Code
LC	Lethal Concentration
LD	Lethal Dose
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PIN	Product Identification Number
PNOC	Particulates Not Otherwise Classified
PNOR	Particulates Not Otherwise Regulated
RCRA	Resource Conservation and Recovery Act
RID	Carriage of Dangerous Goods by Rail (International Regulation)
SARA	Superfund Amendments and Reauthorization Act
STEL	Short Term Exposure Limit
TCLP	Toxic Chemical Leachate Program
TDG	Transportation of Dangerous Goods

TITLE III EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT – SECTION:

302	Extremely Hazardous Substances
303	Emergency Release
311	SDS/List of Chemicals
312	Emergency and Hazardous Inventory
313	Toxic Chemicals Release Reporting

TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
TWA	Time Weighted Average
WHMIS	Workplace Hazardous Materials Information System

µm	micrometer (micron)
mm	millimeter
cm	centimeter
m	meter
f/cc	fibers per cubic centimeter
in	inch
oz	ounce
lb	pound
µg	microgram
mg	milligram
g	gram
kg	kilogram
mg/m^3	milligrams per cubic meter of air
mppcf	million particles per cubic foot
ppm	parts per million

N/A	Not Applicable
ND	No Data/Not Determined
NE	Not Established
NR	Not Regulated

<<< End of SDS >>>