



SDS Number: AXFF-1

Revised/Reviewed: 02/13/2023

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SECTION 1 • PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME OR NUMBER:

- **ARMATEX® FIRESTAR™** Vermiculite coated fiberglass textiles - cloth, tape, paper, sleeving, and rope.
- **THERMOPAK®** custom fabricated products are made using one or more of the above listed products.

COMPANY:	Mid-Mountain Materials, Inc.	TELEPHONE:	206-762-7600
ADDRESS:	Office: PO Box 80266 5602 2 nd Ave S Seattle, WA 98108	EMERGENCY TELEPHONE NUMBER:	800-382-2208
	Plant: 18825 67th Ave. NE Arlington, WA 98223	FAX:	206-762-7694

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

<u>CHEMICAL / COMMON NAME</u>	<u>C.A.S. NUMBER</u>	<u>% BY WEIGHT (opt)</u>
• Continuous Filament Fiber Glass	65997-17-3	
(See section 8 of SDS for the data on the exposure limits for this component)		
• Vermiculite	1318-00-9	2-5%
• Quartz	14808-60-7	< 0.06%
• Sizing	N/A	<2%

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 imbedded, 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: Non-burning. Water is the preferred extinguishing media.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Not applicable except for Needled Mat for AZDEL, Inc., which has a surface binder containing organic peroxide and may burn in the absence of oxygen.

FIRE FIGHTING PROCEDURES: In any sustained fire, wear self-contained breathing apparatus (SCBA). Every company should have

a written fire/evacuation policy including training that is compliant with governmental regulations (e.g., NFPA/OSHA).

SPECIAL FIRE FIGHTING INSTRUCTIONS: Hazardous decomposition as a result of a sustained fire may release products of combustion from sizing and binders. The larger part of the product is nonflammable E-glass. There is a trace amount of sizing and binders that, in a sustained fire, may decompose, releasing combustion products 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/LEAKS: Wet and sweep or vacuum fibrous dust.

SECTION 7 • HANDLING AND STORAGE

HANDLING AND STORAGE PROCEDURES: No special precautions.



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: Respirable Quartz (Crystalline Silica) exposure may result in lung disease (i.e., silicosis and or lung cancer). A properly fitted NIOSH/MSHA approved disposable dust respirator such as the 3M model 8210 (formerly 8710) or model 9900 (in high humidity environments) or P-95 or equivalent should be used. Use respiratory protection in accordance with your company's respiratory protection program, local regulations, and OSHA regulations under CFR 1910.134.

AVAILABLE 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.

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.

EYE PROTECTION: Safety glasses with side shields or goggles.

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

EXPOSURE GUIDELINES:

Ingredient	OSHA PEL (8-hr TWA)	AGGIH TLV (8-hr TWA)
• Fiber Glass Continuous Filament	5 mg/m ³ (respirable dust)	5 mg/m ³ (inhalable fraction)
	15 mg/m ³ (total dust)	1 fiber/cc (respirable)
	1 fiber/cc (respirable)	
• Vermiculite	15mg/m3 total dust	10mg/m3 inhalable
	5mg/m3 Respirable	3mg/m3 respirable

SECTION 9 • PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Solid

COLOR AND ODOR: Black fibrous textile. 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: Non-burning.

LOWER EXPLOSIVE LIMIT: None - does not support flame.

UPPER EXPLOSIVE LIMIT: None - does not support flame.

VAPOR PRESSURE: (mm Hg @ 20°C): N/A

% SOLUBILITY IN WATER: Insoluble

SPECIFIC GRAVITY (water = 1): undetermined

AUTO IGNITION TEMPERATURE: N/A

VISCOSITY: N/A

% 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.

HAZARDOUS DECOMPOSITION PRODUCTS: Sizings or binders may decompose in a fire. Primary combustion products are carbon monoxide, carbon dioxide and water. Other undetermined compounds could be released in small quantities.

SECTION 11 • 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>
• Fiber Glass Continuous Filament	A4	No	No	No
(See detailed information on fiber glass, below)				
• Vermiculite	No	No	No	No
• Quartz	NA	Yes	Yes	Yes

ADDITIONAL INFORMATION - FIBER GLASS (Fiberglass): The following information pertains specifically to fiberglass: Factors in fiber toxicity include fiber dimensions along with 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 (\geq) 3.0 microns are non-respirable (1). According to the National Institute for Occupational Safety and Health (NIOSH), fibers with diameters $> 3.5 \mu\text{m}$ 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.

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. Keep debris minimal by locating waste disposal equipment near work area

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 • REGULATORY INFORMATION

UNITED STATES: EPA Toxic Substances Control Act (TSCA): Fiberglass carries no Chemical Abstracts Index (CAS) 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%.

SARA Title III Section 313

This product does not contain any chemicals in concentration subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (Title III of SARA) and of 40 CFR 372

Clean Air Act: No ingredient is listed.

WHMIS (Canada): Status not controlled and no classification.

NSR Status (Canada): Each ingredient is on the DSL.

TSCA Status: Each ingredient is on the inventory.

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.

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/m³ 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

To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy or completeness of such information. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible long-term adverse effects. To the extent that any hazards may have been mentioned in the publication, we neither suggest nor guarantee that such hazards are the only ones that exist. Final determination of the suitability of any information or product for the use contemplated by any user, the manner of that use, and whether there is any infringement of any patents is the sole responsibility of the user. We recommend that anyone intending to rely on any recommendation or to use any equipment, processing technique, or material mentioned in this publication should satisfy himself as to such suitability and that he can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the manufacturers' or suppliers' current instruction for handling each material they use.

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