Safety Data Sheet

Section 1: Identification

Product Identification:

Base Fabric: Fiberglass

Part Numbers:

Reflect-a-Cool	Heat Sheath	Heat Sheath	Heat Shroud	Heat Screen
010412	010418	010418B50	010405	010401
010460	010403	010403B50	010457	010401B
010461	010419	010419B50	010487	010399
010462	010404	010404B50	010405B50	010400
022004	010420	010420B50	010487B50	010090

Manufacturers Identification:

Design Engineering, Inc.
604 Moore Rd.
Avon Lake, OH 44140
440-930-7940

Aluminized Fiberglass Fabric is a fiberglass base fabric coated on one side with an aluminum film. This fabric is formulated for use for reflection of radiant heat and the shedding of molten metal.

Section 2: Hazard Identification

Classification:
Health, Respiratory or skin sensitization, 2 skin
Health, Skin Corrosion/irritation, 2

Signal Word: Warning

Hazard Pictogram:

GHS Phrases:
H317- may cause an allergic skin reaction
H315- causes skin irritation
H320- causes eye irritation
H335- may cause respiratory irritation

GHS Precautionary Statements:
P264 Wash thoroughly after handling
P333+313 is skin irritation or a rash occurs get medical advice
P337 if eye irritation persists:
P337+313 Get medical advice/ attention

Acute exposure:

Component	Wt%	CAS No.	ACGIH TLV (8hr TWA)	OSHA PEL (8hr TWA)
Fiberglass		65997-17-3		
Nonrespirable	>96%		5mg/m^3	15mg/m^3 total dust
Respirable	<1%		3mg/m^3, PNOC	5mg/m^3, respirable
Respirable particulate with fiber like dimensions (glass shards)	<0.002%		NE	1 fiber/cc; aspect Ratio >5:1

Dust from cutting and application may cause irritation to the respiratory tract and cause symptoms similar to bronchitis.

NFPA: Health=1, Fire=0, Reactivity=0

HMIS III: H*1/F0/PH0 Personal Protection: B , Safety Glasses and Gloves

Section 3: Composition and Information on Ingredients

Ingredients	*% w/w*	*CAS #*
Fiberglass	80-85%	65997-17-3
Aluminized Film	10-15%	7429-90-5 25038-59-9 63394-02-5

Other Ingredients: Items listed in this section are chemically or physically bonded to the fibrous glass textile and are deemed non-hazardous in the state that they are supplied.
Chemical and common name: Starches, PVA, lubricants, surfactants, and humectants (i.e. normal textile sizing) present on the base fabric <3%.

Section 4: First-Aid Measures

Inhalation: If irritation occurs, move to fresh air.
Skin Contact: If irritation occurs, wash with cool water and mild soap. Washcloth may be helpful in removing fibers. To avoid worsening irritations refrain from rubbing and scratching the affected areas.
Eye Contact: If irritation occurs, gently rinse the affected area with clean water for at least 15 minutes.

Ingestion: Rinse mouth with water and seek medical attention. Watch the person for several days to make sure that intestinal blockage does not exist.

Primary Routes of Exposure: eye contact, skin contact and inhalation of nuisance dust may cause temporary irritation.

Potential Health Effects:
Target Organ: respiratory system
Inhalation: Dusts and fibers from this product may cause mechanical irritation of the nose, throat and respiratory track.
Skin Contact: Dusts and fibers from this fabric may cause temporary mechanical irritation to the skin.
Eye Contact: Dusts and fibers from this product may cause temporary mechanical irritations to the eyes.
Ingestion: Unlikely, however, ingestion of product may produce gastrointestinal irritation and disturbances.

Section 5: Fire-fighting Measures

Suitable Extinguishing Media: dry chemical powder, foam, fog, carbon dioxide. Do not use direct water spray especially if fire began as an electrical fire.

Specific Hazards: not explosive. The product itself will not burn but its packaging may.
Flash point: n/a
Auto Ignition temp: n/a
Flammability limits: n/a
Hazardous Combustion Products: Primary combustion products are carbon monoxide, hydrogen, carbon dioxide, formaldehyde, silicon dioxide, and potentially other undetermined compounds could be released in small quantities from the various sizings and the aluminized coating.

Special Protective Equipment: Self-containing breathing apparatus, protective clothing, gloves and a helmet.

Section 6: Accidental Release Measures

Personal Precaution: Do not breathe in fiber dust; use a respirator if there is a lot of dust while processing. Be sure to have appropriate ventilation while processing fibers.

Emergency Procedures: n/a

Methods and Materials for Containment: This material will settle out of the air. If concentrated on the ground, it can be scooped up for disposal or vacuumed as a non-hazardous waste. This material will sink and disperse along the bottom of waterways. It cannot be easily removed after it has become waterborne; however, it is not considered hazardous to water.

Cleanup procedure: The most efficient cleanup is to vacuum the fibers, sweeping will release the dust particles back into the air.

Section 7: Handling and Storage

Precautions for Safe Handling: Avoid contact with eyes and skin. Wear suitable protective gear when cutting and working with the material. The use of respirators can reduce the risk of breathing in the dust during processing. Handle in accordance with good industrial hygiene and safety practices. It is recommended that one does not eat, drink or smoke in the area wear processing takes place.
For large rolls use appropriate mechanical devices.
Conditions for Safe Storage: Store in a cool, dry, well ventilated location

Section 8: Exposure Controls/ Personal Protection

Exposure Controls:

The amount of dust produced in processing should be reduced due to aluminized coating when comparing the amount to the processing of the base material alone.

Component	CAS No.	ACGIH TLV (8hr TWA)	OSHA PEL (8hr TWA)
Fiberglass	65997-17-3		
Nonrespirable		5mg/m^3	15mg/m^3 total dust
Respirable		3mg/m^3, PNOC	5mg/m^3, respirable
Respirable particulate with fiber like dimensions (glass shards)		NE	1 fiber/cc; aspect Ratio >5:1

Appropriate Engineering Controls: Ventilation- local exhaust ventilation should be provided as necessary to maintain exposures below occupational exposure limits.

Individual Protection Measures: The following precautions are advisable during cutting and fabrication or other operations that could generate dust while using this material.

A properly fitted NIOSH approved N 95 series disposable dust respirator is recommended, when high level of dust is present, the level is above the exposure limits or if an irritation occurs.
Eye protection: Safety glasses, goggles, or face shields, as necessary.
Protective clothing: wear loose fitting long sleeve shirt and pants to protect areas from exposure to dust. The use of barrier creams can, in some instances, be helpful.

Medical conditions aggravated by exposure: persons with a history of chronic respiratory or skin conditions that are aggravated by mechanical irritants may be at increased risk or worsening their condition from exposure to this product.

Work/Hygiene Practices:
Handle in accordance with good industrial hygiene and safety practices.
-avoid unnecessary exposure to dust
- remove fiber from skin after exposure
-rubbing and scratching can force the fibers into the skin. The use of barrier creams in some instances can be helpful.
-use vacuum equipment to remove fibers and dusts from clothing
-recommended to wash work clothes separately from other washables.

Section 9: Physical and Chemical Properties

Appearance: white, off-white- aluminized on one side
Odor: none
Odor Threshold: n/a
pH: n/a
Melting: >800ºC (1472ºF) (base material only)
Initial Boiling Point: n/a
Flash Point: n/a
Evaporation: n/a
Flammability: none flammable
Upper/Lower Flammability: n/a
Vapor Pressure: n/a
Vapor Density: n/a
Relative Density:~ 2.6 g/cm^3
Solubility: insoluble in water
Partition coefficient: n/a
Auto-ignition Temp: n/a
Viscosity: n/a
Decomposition Temperature: 300ºC (572ºF) due to coating

Section 10: Stability and Reactivity

Chemical Stability: Stable under normal conditions

Possibility of Hazardous Reaction: none reasonably foreseeable

Conditions to Avoid: none reasonably foreseeable

Incompatible Materials: Phosphoric acid, hydrofluoric acid, strong hydroxides.

Hazardous Decomposition Products: Thermal decomposition may release carbon dioxide, carbon monoxide, formaldehyde, silicon dioxide and low molecular weight hydrocarbons. The decomposition of the sizing, binders and coding are possible in a fire.
Hazardous Polymerization: Will not occur.

Section 11: Toxicological Information

Acute Effects: Dust may cause mechanical irritation of the eyes and skin. Ingestion may cause transient irritation of throat, stomach, and gastrointestinal tract. Inhalation may cause coughing, nose and throat irritation, and sneezing. People with pre-existing respiratory issues may experience more irritation.

Primary Routes of Exposure: eye contact, skin contact and inhalation of nuisance dust may cause temporary irritation.

Potential Health Effects:
Target Organ: respiratory system
Inhalation: Dusts and fibers from this product may cause mechanical irritation of the nose, throat and respiratory track.
Skin Contact: Dusts and fibers from this fabric may cause temporary mechanical irritation to the skin.
Eye Contact: Dusts and fibers from this product may cause temporary mechanical irritations to the eyes.
Ingestion: Unlikely, however, ingestion of product may produce gastrointestinal irritation and disturbances.

Carcinogenicity:
Fiberglass ACGIH- NO IARC-NO NTP-NO OSHA-NO

In June 1987, the international Agency for Research on Cancer (IARC) categorized fiberglass continuous filaments as not classifiable with respect to human carcinogenicity. The evidence from human, as well as animal studies was evaluated by IARC as insufficient to classify fiberglass continuous filaments as possible, probable, or confirmed cancer causing material.

One of the concerns that people still have about fiberglass and cancer are studies such as the 1997 study from the Institute of Occupational Medicine (IOM) in Edinburgh, Scotland. This study found that animals exposed to an extremely high dose of a durable E-glass microfiber, with average diameters less than 1 micron, developed lung scaring and tumors, including cancer of the lining of the lungs (mesothelioma). The IOM Study results are consistent with previous published research indicating that high doses of durable, fine diameter fibers can cause disease in experiment animals.

Although our continuous filaments are an E-glass, they are not the same as the micro-fibers tested in this study. The exposure of durable E-glass microfiber, with an average diameter of less than 1 micron would not be significant in using and processing this product.

Section 12: Ecological Information

Ecotoxicity: n/a
Persistence and Degradability: n/a
Bioaccumulative potential: n/a
Mobility in Soil: n/a

This product is not considered harmful to aquatic organisms nor to cause long-term adverse effects to the environment.

Section 13: Disposal Considerations

Disposal should be in accordance with relevant national and local regulations pertaining to the disposal of non-hazardous waste. Do not dump dust particles into sewers or anybody of water.

Section 14: Transport Information

UN Number: n/a
Shipping Information: Not regulated for transport.

Section 15: Regulatory Information

n/a

Section 16: Other information

Last Revised: 5/21/2015

All information and recommendations are presented in good faith and are believed to be correct but no warranty, expressed or implied is made. All materials should be handled with reasonable caution.