

FyreRoc-G
MATERIAL SAFETY DATA SHEET

SECTION 1.0 IDENTIFICATION

MANUFACTURED BY:



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HAZARD RATING INFORMATION:

NFPA

Health 2
Fire 0
Reactivity 0

HMIS

Health 2
Fire 0
Reactivity 0
Personal Protection G

LABEL INFORMATION:

GLASS REINFORCED

Primary Uses: Fiberglass – Because of its physical properties such as being lightweight, thermal resistance, inert, and relatively strong makes it ideal for use in the construction of homes, buildings, and aircraft as thermal and acoustical insulation; as a matting for reinforcement in fiberboard and plastics; as high-efficiency air filtration systems; and in the textile industry as components in lampshades, drapery, and garments.

SECTION 2.0 CHEMICAL COMPOSITION/INGREDIENTS

Component Name Synonym/Trade Name	CAS No.	% Composition	OSHA PEL	ACGIH TLV	Other NIOSH
Cured Fiberglass	65997-17-3	Cured Product 50	15 mg/m ³ as Total dust; 5 mg/m ³ as respirable fraction (PNOR). Proposed PEL/TWA for fiberglass 1 fiber/cc	10 mg/m ³ (PNOC)	5 mg/m ³ as total fiberglass dust with a 3 fibers/cc limit for fibers having a diameter ≤ 3.5 μm and length ≥ 10 μm
Cementitious material		Cured Product 50	Same as above	Same as above	Same as above

EMERGENCY OVERVIEW:

This material is a cured product (article) not anticipated to pose any exposure potential in its finished configuration or state. Potential exposure characteristics associated with this product will result through alteration of its finished form. Alteration may include sawing, grinding, sanding, and other forms of modification to the finished configuration. Contact from airborne fibrous glass fibers or particulates may be moderately irritating to the skin, eyes, and mucous linings of the respiratory and gastrointestinal tract.

SECTION 3.0 HAZARDS IDENTIFICATION**POTENTIAL HEALTH EFFECTS**

Relevant Routes of Exposure: Inhalation, ingestion, eye and skin contact

INHALATION: Symptoms experienced from overexposure to airborne concentrations of this substance may result in

- irritation to the mucous linings of the upper respiratory tract
- shortness of breath
- coughing
- wheezing or rales when breathing
- possible nosebleeds

NOTE: It is of interest that glass fibers have a tendency to break transversely (across), as opposed to longitudinally (splitting along the length) creating smaller thicker fibers, or particulates. Respirable fibers (for fiberglass) are physically defined as a fiber, if they are 3.5 μm or less in diameter with a length $\geq 10 \mu\text{m}$. Physical dimensions of fibers express a length to diameter aspect ratio of 3 to 1 or greater. Fibers less than 1 μm stand the greatest chance of reaching deeper into the lungs (alveolar regions) than larger fibers.

Chronic exposures: Repeated or long term exposures through inhalation may cause an increased incidence of bronchitis.

Fiberglass has been classified as an IARC (International Agency for Research on Cancer) Group 2B; human evidence – inadequate, animal evidence sufficient carcinogen. The resulting cancer classification is based on direct implantation of fine diameter fibers and does not represent the response of fibrous glass inhalation.

One explanation given as to the capacity of fiberglass to cause cancer is that the characteristics of a physical carcinogen requires that the fibers be of a certain dimension to enable it to reach the target organ(s), secondly it must reach the organ(s) in an adequate dose, and lastly the fiber must remain or persist to induce a carcinogenic response. Fiberglass due to its inherent nature is impacted in all three categories.

Silicates, The dust of certain silicates, such as hydrated magnesium silicate can produce fibrotic changes in the lungs and are implicated as experimental carcinogens.

Medical conditions aggravated by exposure: Any previously existing lung or pulmonary (breathing) condition.

Note: Smoking may negatively impact the body's ability to expel fibers which have been drawn deeper into the lungs. This is due to the paralyzing effect on the mucociliary tract, a protective mechanism used to dislodge and discharge particulates, fibers and other foreign matter from the lungs.

INGESTION: Symptoms experienced from swallowing this material may include

- irritation to the mucous lining of the gastrointestinal tract.

Chronic exposure: None anticipated

Medical conditions aggravated by exposure: Possible skin and lung irritation.

SKIN CONTACT & ABSORPTION: Symptoms experienced resulting from skin contact with this material may include:

- skin irritation may occur from mechanical means.
- intense itching and redness

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Skin response or reactions are usually produced when the fibers are greater than 5 μm in size.

Chronic exposures: Fiberglass warts and inflammation around the nails may result due to embedded fibers. Allergic sensitivities have been reported, however, these are considered rare. It is assessed that this response may be associated with the binder instead of the fiberglass.

Skin irritation is typically experienced by individuals newly exposed, but may actually diminish after several days exposure.

Medical conditions aggravated by exposure: Any previously existing skin condition may be further aggravated through exposure.

EYE CONTACT & ABSORPTION: Symptoms experienced resulting from contact with the eyes may include:

- moderate to severe irritation
- may cause transient conjunctivitis
- excessive tearing of the eyes

Irritation derived through exposure is considered to be mechanically generated and will pass once the irritant source is removed.

Chronic exposures: None anticipated. Irritation to the eyes is considered both infrequent and acute as the source is normally removed, due to the discomfort associated with contact of the eyes.

Medical conditions aggravated by exposure: No information available.

Note: It should be noted, as a precautionary measure, that these temporary effects to the eyes may directly impact an individuals ability to locate Emergency Exits and/or Eyewash stations to render first-aid.

Health effects described above are inclusive of the scientific information available for review, and evaluated on behalf of this product. Actual signs and symptoms experienced may vary due to impacting conditions at the time of exposure.

SECTION 4.0 FIRST AID MEASURES

Inhalation:

- Remove victim to fresh air.
- Support breathing, if necessary.
- Blow nose to evacuate fibers.
- Seek medical attention, as necessary, if symptoms develop or persist.

NOTE: One study suggests that cough suppressants should not be used. Cough syrups will suppress the victims ability to expel the fibers through coughing.

Ingestion:

- If victim is conscious and alert,
- Wash out mouth with water
 - Seek medical attention.
 - Do not induce vomiting

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Eye: Holding eyelids open,

- Gently flush eyes for 15 minutes with large quantities of water.
- Consult medical attention immediately.

Skin: Remove contaminated clothing

- Rinse affected areas with flooding amounts of water.
- Wash area with soap and water.
- Seek medical attention if irritation persists.

Notes to the Physician: Use of antihistamines may control itching and redness. Fiberglass is considered chemically inert and is not anticipated to produce toxic effects through ingestion.

SECTION 5.0 FIREFIGHTING MEASURES

Flash Point: None Reported	Flammability range	LEL(%): None Reported
Auto Ignition Temperature: None Reported		UEL(%): None Reported

Extinguishing Media: This material is non-combustible, use appropriate extinguishing media for surrounding fire.

Special Firefighting Procedures : None

Hazardous Decomposition Byproducts : None

Unusual Fire & Explosion Hazards: None

SECTION 6.0 ACCIDENTAL RELEASE MEASURES

Actions to Take for Spills: Where excessive concentrations of this material exists in a dust, particulate, or fiber form as a result of sawing, grinding, sanding, or some other material removal activity, cleanup personnel should

- protect against skin, eye, and inhalation hazards through use of the prescribed protective equipment (See Section 8.0).
- limit foot and vehicular traffic to minimize mechanical dispersions.
- employ vacuums equipped with High Efficiency Particulate Air (HEPA) filters or wet mopping to minimize dust generation. HEPA VACs are the preferred method of collection as this devices can be used for cleanup of the work area, personnel, and equipment.

Containment: Substance can be cleaned up by vacuuming (with an appropriate filter) or wet mopping to minimize particle dispersion. This is a solid material and will not travel far from the spill location unless mechanically agitated.

Collection Containers: This material is compatible with any type of container selected including bags, fiber, steel, or plastic drums. Once in the container, reseal to avoid dust generation.

Disposal Criteria: This material in its present form is not a regulated waste, and may be disposed of as regular refuse.

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SECTION 7.0 HANDLING AND STORAGE

- Handling:** When cutting, grinding, or sanding FyreRoc all personnel are directed to:
- wear all specified elements of Personal Protective Equipment (PPE) as directed by this document (See Section 8.0) or under location specific requirements, which ever is most conservative.
 - employ active dust, particulate, and fiber collection techniques such as cutting and sanding tools equipped with vacuum collection systems. Where possible employ local or general ventilation to support dust collection and control of airborne concentrations.
 - after handling this product, individuals are directed to properly segregate clothing to be washed separately. Do **NOT** wash these items at home. Clothing brought home with embedded fiberglass fibers and particulates may contaminate household laundry. The transfer of contamination from associated work garments to other clothing items may cause irritation to the individuals (other family members) wearing these articles. Wash or replace protective clothing articles before the next use.
 - wash thoroughly with a mild soap and generous amounts of water to flush potential fibers from the skin.
 - do not eat, drink, or use tobacco products in areas of product use, storage, or handling, as this activity may introduce particulates and fibers to a potential route of exposure.
 - employ good housekeeping of the work area. Provide waste bins to collect and contain excess unused fiberglass.
- Storage:** Store, handle, and use Cured Fiberglass in a manner that limits the production of airborne particulates in the workplace.
- Store in a cool dry location. Direct exposure to harsh environmental elements may cause premature aging and degradation of the unit. Finer fibers employed in some applications are particularly prone to environmental influence, and will show signs of degradation much faster.
 - Avoid physical damage, do not store in areas prone to accidental damage (i.e. excessive forklift traffic).

SECTION 8.0 PERSONAL PROTECTION

Engineering Controls: These control measures have been assigned based on the ability to control potential exposures and health effects during product use and handling.

Ventilation: Local mechanical ventilation is preferred to control airborne particulates below permissible exposure limits (See Section 2.0). Avoid dust generating conditions.

EMPLOYEE PROTECTIVE MEASURES

Respiratory Protection: Cutting, sanding, or grinding this product requires the use of the following NIOSH/MSHA approved respiratory protection:

- Air Purifying Respirator (APR) with a HEPA cartridge is recommended for use. A Full-face APR should be used for extensive cutting, grinding, or sanding. This is anticipated for concentrations of up to 1000 mg/m³ or where the potential for eye contact and irritation is directly impacted. A Half-face APR may be employed for incidental work providing it is used in conjunction with suitable eye protection.

These respirators are to be employed for concentrations exceeding the Permissible Exposure Limits, recommended Threshold limits Values (See Section 2.0), or where the airborne concentration is unknown.

- Self-Contained Breathing Apparatus (SCBA) is recommended for:
 - IDLH concentrations
 - Oxygen deficient atmospheres
 - Confined space operations
 - Fire/explosive situations
 - In situations where the conditions for using APRs are unacceptable

Utilization of respiratory equipment should be in accordance with 29 CFR 1910.134. All participants employing respiratory protection should be active participants in a Respiratory Protection Program.

Chemical Protective Clothing/Gloves: Cotton or disposable coveralls are recommended to prevent contamination of street clothing. Reusable coveralls should be laundered after use to avoid possible skin irritation of embedded fibers.

Leather or cotton work gloves as appropriate for the operation. **Note:** Some operations will not permit the use of gloves due to tactility, or possible entanglement hazards. Where this is the case, location required safety measures are recommended.

Eye/Face Protection: Impact rated safety glasses with side shields under a full-face shield are to be used when cutting, sanding, or grinding this product. These items will not be used when a full-face APR is selected to achieve respiratory and eye and face protection.

Head and Feet: Hard hats are recommended where overhead hazards exist. Steel toe/steel shank protective footwear are recommended where foot hazards exist. Both items may be location specific requirements, which will take precedence.

Other: An emergency eye wash is recommended for the work area to offer first-aid procedures for contact with eyes. Workers should have access to areas to wash up after handling this product.

Break areas, lunch rooms, and other areas used for food consumption, or use of tobacco products, should be physically separated from the area of operation.

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Work Hygiene Practices: To control potential exposures

- Avoid contact where possible.
- Do NOT eat, drink, smoke, or perform any other hand to mouth activity in areas of product use or handling.
- Wash thoroughly after handling this product.

SECTION 9.0 CHEMICAL AND PHYSICAL PROPERTIES

Boiling Point:	N.A.	Vapor Pressure (mmHg):	N.A.	
Freezing Point:	N.A.	Vapor Density (Air = 1):	N.A.	
Melting Point:	~1,000 - 2,000°F; 538 - 1,093°C (Relative to type and fiber construction)		Evaporation Rate:	N.A.
Solubility in Water:	Negligible	Percent Volatility:	Cured product	
Coefficient Water/Oil Distribution:	N.A.	Specific Gravity (Water = 1):	~1.5 to 2.5	
Odor/Odor Threshold:	Odorless in its cured state	pH:	N.A.	

Appearance: Fibers of different sizes relative to use: Insulations 5 to 15 μ m; lightweight aircraft insulation, life preservers 1 to 1.5 μ m; air/liquid filtration 0.5 to 3.8 μ m; fabrics 4 to 6 μ m; molded pipe insulation 7 to 9 μ m; reinforcement materials 9 to 11 μ m are molded into batts or sheets, filament or chopped fibers. These fibers in this case, are mixed with a resin system which is designed to cure or polymerize into a specific design or shape.

SECTION 10.0 STABILITY AND REACTIVITY

Chemical Stability:	Stable	Conditions to Avoid:	Physical damage. Smaller diameter fiberglass is more susceptible to environmental conditions and effects.
Incompatibility (materials to avoid):	Hot alkaline solutions, hydrofluoric, fluosilicic, and phosphoric acids.	Hazardous Polymerization:	Will not occur.

SECTION 11.0 TOXICOLOGICAL INFORMATION

Occupationally Relevant Routes of Exposure

Inhalation: Rat;TCLo, 5mg/m ³ /7hours/90-WI (Nonmalignant Tumors)	Skin: Not Available
Ingestion: No information Available	Eye: Not Available

Non-occupation Route of Exposure/Concerns

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Acronyms:

ACGIH TLV American Conference of Governmental Industrial Hygienist Threshold Limit Value
 CAS No. Chemical Abstracts Services Number
 CERCLA Comprehensive Environmental Response, Compensation, & Liability Act
 CFR Code of Federal Regulations
 °C degrees Celsius
 °F degrees Fahrenheit
 IDLH Immediately Dangerous to Life or Health
 L liter
 LD₅₀ Lethal Dose 50%
 LDLo Lethal Dose Low
 CADS Lower Explosive Limit
 mg/kg milligrams per kilograms
 mg/m³ milligrams per cubic meter
 mmHg millimeters of mercury
 MSHA Mine Safety & Health Administration

N.A. Not Applicable
 N.E. None Established
 NIOSH National Institute of Occupational Safety & Health
 OSHA PEL Occupational Safety & Health Administration Permissible Exposure Limit
 PNOC Particulates Not Otherwise Classified
 PNOR Particulates Not Otherwise Regulated
 PPM Parts per million

RQ Reportable quantity
 SARA Superfund Amendment Reauthorization Act
 UEL Upper explosive limit
 µg microgram
 µm micrometer = 1/25,000 of an inch
 UN United Nations
 US EPA United States Environmental Protection Agency

References:

ACGIH Documentation of TLVs and BEIs 6th Edition
 ANSI Z400.1 1993
 Casserett and Doull (1986)
 Clinical Toxicology of Commercial Products 5th Edition
 Dupont TyFax Data Service
 Hamilton and Hardy's Industrial Toxicology 4th Edition
 NTP 7th Annual Report 1994
 OSHA 29 CFR 1910.1200
 Patty's Industrial Hygiene and Toxicology 3rd edition(1981), and 4th edition (1991)
 Rapid Guide to Hazardous Chemicals in the Workplace 2nd Edition
 RTECS Date: July 1993
 SAX Dangerous Properties of Industrial Materials, 7th edition(1989)
 Suspect Chemical Source Book
 Suppliers MSDS/Product MSDS

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accurate, and represents the most up-to-date information available to us, however, does not infer to be all inclusive. It is therefore recommended that this document be used as a guide. Goodrich Corp. shall not be held liable for any damage or injury resulting from use of such information. Goodrich Corp. further encourages users of this product to investigate and determine the potential hazards and the suitability of this information with respect to their application.

Prepared by: _____

Date:

Title: