



# SAFETY DATA SHEET

## 1. Identification

**Product identifier** Ceramic Fiber  
**Recommended use** For Industrial Use Only  
**Recommended restrictions** None Known.

### Manufacturer/Supplier information

**Company name:** FRC Global  
**Address:** 1000 N. West St.  
Suite 1200 #3008  
Wilmington, DE 19801  
**Product Support/Technical Services**  
Phone: (514) 931-5711  
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Contact E-Mail: [LadleDr@FRCglobal.com](mailto:LadleDr@FRCglobal.com)

## 2. Hazard(s) identification

|                              |                 |             |
|------------------------------|-----------------|-------------|
| <b>Physical hazards</b>      | Not classified  |             |
| <b>Health hazards</b>        | Carcinogenicity | Category 1A |
| <b>Environmental hazards</b> | Not classified  |             |
| <b>OSHA defined hazards</b>  | Not classified  |             |
| <b>Label Elements</b>        |                 |             |



|                                |  |
|--------------------------------|--|
| <b>Signal Word</b>             | Danger.  |
| <b>Hazard Statement</b>        | May cause cancer.  |
| <b>Precautionary statement</b> |  |
| <b>Prevention</b>              | Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection. |
| <b>Response</b>                | If concerned: Get medical advice/attention.  |
| <b>Storage</b>                 | Store locked up.   |
| <b>Disposal</b>                | Dispose of contents/container in accordance with local/regional/national/international regulations.  |

**Hazard(s) not otherwise Classified (HNOC)**  
None Known.

## Supplemental information

This product contains Refractory Ceramic Fibers (RCF) or an RCF wrap or mat. IARC has classified RCFs as a possible human carcinogen, Group 2B based on sufficient evidence of carcinogenicity in animals and no available data in humans. NTP classified respirable RCFs as reasonably anticipated carcinogens. HWI recommends that safe handling methods are followed, including air monitoring in areas where the potential exists for airborne fibers, minimizing airborne exposures through the use of NIOSH-approved respirators, and wearing protective clothing, gloves, and eye protection.

## 3. Composition/information on ingredients

### Mixtures

| Chemical Name                            | Common Name/Synonyms   | CAS Number  | % |
|--|--|-------------|---|
| Aluminum Oxide (Non-Fibrous)             |  | 1344-28-1   | * |
| Aluminosilicate Refractory Ceramic Fiber | REFRACTORY CERAMIC FIBERS<br>REFRACTORY CERAMIC FIBER (RCF)<br>SYNTHETIC VITREOUS FIBERS (SVF)<br>REFRACTORY CERAMIC FIBRES<br>Refractories, fibers, aluminosilicate<br>Man-Made Mineral Fiber (MMMF)<br>Man-Made Vitreous Fiber (MMVF)<br>Alumino Silicate Wool (ASW) | 142844-00-6 | * |
| Glass, Oxide, Chemicals                  |  | 65997-17-3  | * |

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

### Composition comments

This product contains Refractory Ceramic Fibers (RCF) or an RCF wrap or mat. IARC has classified RCFs as a possible human carcinogen, Group 2B. This classification was based on sufficient evidence of carcinogenicity in animals and no available data in humans. NTP classified respirable RCFs as reasonably anticipated carcinogens. Recent industry ongoing epidemiology studies show the general health of workers in the RCF industry was similar to that of workers in other dusty work environments. There have been no reports of mesothelioma, and the lung cancer rate appears similar to background rates, but the number of workers with a long latency period are too few for definitive conclusions. There was a small number of employees with an increased risk of developing pleural plaques (shadows along the inside of the chest wall). These plaques, however, are not known to cause symptoms or disability. ANH recommends that safe handling methods are followed, including air monitoring in areas where the potential exists for airborne fibers,

minimizing airborne exposures through the use of NIOSH-approved respirators, and wearing protective clothing, gloves, and eye protection.

## 4. First-aid measures

|   |   |
|---|---|
| <b>Inhalation</b>   | Move to fresh air. Call a physician if symptoms develop or persist.   |
| <b>Skin contact</b>   | Wash off with soap and water. Get medical attention if irritation develops and persists.  |
| <b>Eye contact</b>  | Rinse with water. Get medical attention if irritation develops and persists.  |
| <b>Ingestion</b>  | Rinse mouth. Get medical attention if symptoms occur.   |
| <b>Most important symptoms/effects, acute and delayed</b>                     | Direct contact with the eyes may cause temporary irritation.  |
| <b>Indication of immediate medical attention and special treatment needed</b> | Provide general supportive measures and treat symptomatically. Keep the victim under observation. Symptoms may be delayed.                        |
| <b>General information</b>  | If concerned: Get medical advice. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. |

## 5. Fire-fighting measures

|  |   |
|--|---|
| <b>Suitable extinguishing media</b>                                  | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).                      |
| <b>Unsuitable extinguishing media</b>                                | Do not use a water jet as an extinguisher, as this will spread the fire.                      |
| <b>Specific hazards arising from the chemical</b>                    | During a fire, gases hazardous to health may be formed.                                       |
| <b>Special protective equipment and precautions for firefighters</b> | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. |
| <b>Firefighting equipment/instructions</b>                           | Use water spray to cool unopened containers.  |
| <b>Specific methods</b>  | Use standard firefighting procedures and consider the hazards of other involved materials.    |
| <b>General fire hazards</b>  | No unusual fire or explosion hazards were noted.  |

## 6. Accidental release measures

|   |  |
|---|--|
| <b>Personal precautions, protective equipment, and emergency procedures</b> | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. |
|---|--|

## Methods and materials for containment and cleaning up

Stop the flow of material if this is without risk. Following product recovery, flush the area with water.  
For waste disposal, see section 13 of the SDS.

## Environmental precautions

Avoid release to the environment. Avoid discharge into drains, water courses, or onto the ground.

## 7. Handling and storage

### Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid prolonged exposure. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

### Conditions for safe storage, including any incompatibilities

Store locked up. Store in the original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| <i>Components</i>                               | <i>Type</i> | <i>Value</i>        | <i>Form</i>          |
|---|-------------|---------------------|----------------------|
| Aluminum Oxide (Non-Fibrous)<br>(CAS 1344-28-1) | PEL         | 5 mg/m <sup>3</sup> | Respirable fraction. |
|   |             | 15mg/m <sup>3</sup> | Total dust.          |

#### US ACGIH Threshold Limit Values

| <i>Components</i>                               | <i>Type</i> | <i>Value</i>        | <i>Form</i>          |
|---|-------------|---------------------|----------------------|
| Aluminum Oxide (Non-Fibrous)<br>(CAS 1344-28-1) | TWA         | 1 mg/m <sup>3</sup> | Respirable fraction. |

#### US NIOSH: Pocket Guide to Chemical Hazards

| <i>Components</i>  | <i>Type</i> | <i>Value</i>             | <i>Form</i>         |
|--|-------------|--------------------------|---------------------|
| Aluminosilicate Refractory<br>Ceramic Fiber<br>(CAS 142844-00-6) | TWA         | 3 fibers/cm <sup>3</sup> | Dust.               |
|  |             | 3 fibers/cm <sup>3</sup> | Fiber.              |
|  |             | 5 mg/m <sup>3</sup>      | Fibers, total dust. |
|  |             | 5mg/m <sup>3</sup>       | Fiber, total.       |
| Glass, Oxide, Chemicals Fiber.<br>(CAS 65997-17-3)               | TWA         | 3 fibers/cm <sup>3</sup> | Dust.               |
|  |             | 3 fibers/cm <sup>3</sup> | Fiber.              |
|  |             | 5 mg/m <sup>3</sup>      | Fibers, total dust. |
|  |             | 5mg/m <sup>3</sup>       | Fiber, total.       |

### Biological limit values

No biological exposure limits were noted for the ingredient(s).

### Exposure guidelines

\*Except for the state of California, where the PEL for RCF is 0.2 f/cc 8-hr TWA, there is no specific regulatory

standard for RCF in the U.S. OSHA’s “Particulate Not Otherwise Regulated (PNOR)” standard (29 CFR 1910.1000, Subpart Z, Air Contaminants) applies generally - Total Dust 15 mg/m<sup>3</sup>; Respirable Fraction 5 mg/m<sup>3</sup>. OTHER OCCUPATIONAL EXPOSURE LEVELS (OEL) RCF-related occupational exposure limits vary internationally. Regulatory OEL examples include California, 0.2 f/cc; Canadian provincial OELs ranging from 0.2 to 1.0 f/cc. The objectives and criteria underlying each of these OEL decisions also vary. The evaluation of occupational exposure limits and the determination of their applicability to the workplace are best performed, on a case-by-case basis, by a qualified Industrial Hygienist.

**Appropriate engineering controls**

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and an emergency shower must be available when handling this product.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

If contact is likely, safety glasses with side shields are recommended.

**Skin protection**

- Hand protection
- Other

Wear appropriate chemical-resistant gloves.  
Wear appropriate chemical-resistant clothing. Use of an impervious apron is recommended.

**Respiratory protection**

Use a NIOSH/MSHA-approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

**Thermal hazards**

Wear appropriate thermal protective clothing, when necessary

**General Hygiene Considerations**

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**9. Physical and chemical properties**

**Appearance**

- Physical state      Solid.
- Form                    Solid.
- Color                    Not available.

**Odor**                    Not available.

**Odor threshold**      Not available.

|  |                |
|--|----------------|
| pH   | Not available. |
| Melting point/freezing point                 | Not available. |
| Initial boiling point and boiling range      | Not available. |
| Flash point                                  | Not available. |
| Evaporation rate                             | Not available. |
| Flammability (solid, gas)                    | Not available. |
| Upper/lower flammability or explosive limits |                |
| Flammability limit - lower (%)               | Not available. |
| Flammability limit - upper (%)               | Not available. |
| Explosive limit - lower (%)                  | Not available. |
| Explosive limit - upper (%)                  | Not available. |
| Vapor pressure                               | Not available. |
| Vapor density                                | Not available. |
| Relative density                             | Not available. |
| Solubility(ies)                              |                |
| Solubility (water)                           | Not available. |
| Partition coefficient (n-octanol/water)      | Not available. |
| Auto-ignition temperature                    | Not available. |
| Decomposition temperature                    | Not available. |
| Viscosity                                    | Not available. |

## 10. Stability and reactivity

|                                    |   |
|------------------------------------|---|
| Reactivity                         | The product is stable and non-reactive under normal conditions of use, storage, and transport.  |
| Chemical stability                 | Material is stable under normal conditions.   |
| Possibility of hazardous reactions | No dangerous reaction is known under conditions of normal use.  |
| Conditions to avoid                | Contact with incompatible materials.  |
| Incompatible materials             | Acids. Chlorine.<br>Incompatibility is based strictly upon potential theoretical reactions between chemicals and may not be specific to industrial application exposure. Contact your sales representative for clarification. |
| Hazardous decomposition products   | No hazardous decomposition products are known.  |

## 11. Toxicological information

### Information on likely routes of exposure

|              |  |
|--------------|--|
| Inhalation   | Prolonged inhalation may be harmful.                     |
| Skin contact | No adverse effects due to skin contact are expected.     |
| Eye contact  | Direct contact with eyes may cause temporary irritation. |

|   |  |
|---|--|
| <b>Ingestion</b>  | Expected to be a low ingestion hazard.   |
| <b>Symptoms related to the physical, chemical, and toxicological characteristics:</b> | Direct contact with the eyes may cause temporary irritation.   |
| <b>Information on toxicological effects</b>   |  |
| <b>Acute toxicity</b>   | Not available.   |
| <b>Skin corrosion/irritation</b>  | Prolonged skin contact may cause temporary irritation.   |
| <b>Serious eye damage/eye irritation</b>  | Direct contact with the eyes may cause temporary irritation.   |
| <b>Respiratory or skin sensitization</b>  |  |
| <b>Respiratory sensitization</b>  | Not a respiratory sensitizer.  |
| <b>Skin sensitization</b>   | This product is not expected to cause skin sensitization.  |
| <b>Germ cell mutagenicity</b>   | No data is available to indicate product, or any components present at greater than 0.1% are mutagenic or genotoxic. |
| <b>Carcinogenicity</b>  | May cause cancer.  |
| <b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>                         | Aluminosilicate Refractory Ceramic Fiber (CAS 142844-00-6)<br>2B Possibly carcinogenic to humans.                    |
| <b>US National Toxicology Program (NTP) Report on Carcinogens</b>                     | Glass, Oxide, Chemicals (CAS 65997-17-3)<br>Reasonably Anticipated to be a Human Carcinogen.                         |
| <b>US OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b>              | Not Listed.  |
| <b>Reproductive toxicity</b>  | This product is not expected to cause reproductive or developmental effects.   |
| <b>Specific target organ toxicity - single exposure</b>                               | Not classified.  |
| <b>Specific target organ toxicity - repeated exposure</b>                             | Not classified.  |
| <b>Aspiration hazard</b>  | Not an aspiration hazard.  |
| <b>Chronic effects</b>  | Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.                                   |

## 12. Ecological information

|                                      |  |
|--------------------------------------|--|
| <b>Ecotoxicity</b>                   | The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. |
| <b>Persistence and degradability</b> | No data is available on the degradability of this product.   |
| <b>Bio-accumulative potential</b>    | No data available.   |
| <b>Mobility in soil</b>              | No data available.   |
| <b>Other adverse effects</b>         | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential,  |

endocrine disruption, global warming potential) are expected from this component.

### 13. Disposal considerations

|  |  |
|--|--|
| <b>Disposal instructions</b>                 | Collect and reclaim or dispose of in sealed containers at a licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.                  |
| <b>Hazardous waste code</b>                  | The waste code should be assigned in discussion between the user, the producer, and the waste disposal company.  |
| <b>Waste from residues / unused products</b> | Dispose of it in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of safely (see: Disposal instructions).      |
| <b>Contaminated packaging</b>                | Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after the container is emptied. |

### 14. Transport information

|   |                                   |
|---|-----------------------------------|
| <b>DOT</b>  | Not regulated as dangerous goods. |
| <b>IATA</b>   | Not regulated as dangerous goods. |
| <b>IMDG</b>   | Not regulated as dangerous goods. |
| <b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b> | Not applicable.                   |

### 15. Regulatory information

|  |   |
|--|---|
| <b>US federal regulations</b>  | This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. One or more components are not listed on TSCA. Toxic Substances Control Act (TSCA) Section 12(b) - RCF has been assigned a CAS number; however, it is an "article" under TSCA and therefore exempt from listing on the TSCA inventory. All chemical substances in this product are listed on the TSCA chemical substance inventory where required. |
| <b>TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)</b>     | Not regulated.  |
| <b>CERCLA Hazardous Substance List (40 CFR 302.4)</b>                    | Not listed.   |
| <b>SARA 304 Emergency release notification</b>                           | Not regulated.  |
| <b>US OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b> | Not listed.   |



## Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories      Immediate Hazard - No  
                                 Delayed Hazard - Yes  
                                 Fire Hazard - No  
                                 Pressure Hazard - No  
                                 Reactivity Hazard - No

### SARA 302 Extremely hazardous substance

Not listed.

### SARA 311/312 Hazardous Chemical

No

### SARA 313 (TRI reporting)

| <i>Chemical Name</i>         | <i>CAS number</i> | <i>% by wt.</i> |
|------------------------------|-------------------|-----------------|
| Aluminum Oxide (Non-Fibrous) | 1344-28-1         | *               |

## Other federal regulations

### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not Regulated

### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

### Safe Drinking Water Act (SDWA)

Not regulated.

## US state regulations

### US California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

### US Massachusetts RTK - Substance List

Aluminum Oxide (Non-Fibrous) (CAS 1344-28-1)

Aluminosilicate Refractory Ceramic Fiber (CAS 142844-00-6)

Glass, Oxide, Chemicals (CAS 65997-17-3)

### US New Jersey Worker and Community Right-to-Know Act

Aluminum Oxide (Non-Fibrous) (CAS 1344-28-1)

Aluminosilicate Refractory Ceramic Fiber (CAS 142844-00-6)

Glass, Oxide, Chemicals (CAS 65997-17-3)

### US Pennsylvania Worker and Community Right-to-Know Law

Aluminum Oxide (Non-Fibrous) (CAS 1344-28-1)

Aluminosilicate Refractory Ceramic Fiber (CAS 142844-00-6)

Glass, Oxide, Chemicals (CAS 65997-17-3)

### US Rhode Island RTK

Aluminum Oxide (Non-Fibrous) (CAS 1344-28-1)

### US California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

### US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Glass, Oxide, Chemicals (CAS 65997-17-3) Listed: July 1, 1990

## International Inventories

| <i>Country(s) or region</i>            | <i>Inventory name</i>  | <i>On inventory (yes/no) *</i> |
|--|--|--------------------------------|
| <b>Australia</b>                       | Australian Inventory of Chemical Substances (AICS)                     | No                             |
| <b>Canada</b>                          | Domestic Substances List (DSL)   | No                             |
| <b>Canada</b>                          | Non-Domestic Substances List (NDSL)                                    | No                             |
| <b>China</b>                           | Inventory of Existing Chemical Substances in China (IECSC)             | Yes                            |
| <b>Europe</b>                          | European Inventory of Existing Commercial Chemical Substances (EINECS) | No                             |
| <b>Europe</b>                          | European List of Notified Chemical Substances (ELINCS)                 | No                             |
| <b>Japan</b>                           | Inventory of Existing and New Chemical Substances (ENCS)               | No                             |
| <b>Korea</b>                           | Existing Chemicals List (ECL)  | Yes                            |
| <b>New Zealand</b>                     | New Zealand Inventory  | Yes                            |
| <b>Philippines</b>                     | Philippine Inventory of Chemicals and Chemical Substances (PICCS)      | No                             |
| <b>United States &amp; Puerto Rico</b> | Toxic Substances Control Act (TSCA) Inventory                          | No                             |

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s). A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

This information is supplied to be informative and to alert the user of the material. The ultimate compliance with federal, state, and/or local regulations concerning the use of this material, or compliance with respect to product liability, rests solely upon the purchaser thereof.

**Prepared by:** FRC Global  
**Date:** October 2020

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**End of Safety Data Sheet**