



## SAFETY DATA SHEET

### Section 1: Identification

**Product Identifier:** Refractory Hardboard Type FRA-600. FRA-600

**Other means of identification:** Thin, rigid, reinforced alumina refractory boards and structures.

**Recommended use:** Thermal, structural and electrical insulation generally used in high temperature applications.

**Manufacturer:**

ZIRCAR Ceramics, Inc.  
P.O. Box 519  
Florida, NY 10921  
[www.zircarceramics.com](http://www.zircarceramics.com)  
[sales@zircarceramics.com](mailto:sales@zircarceramics.com)  
(845) 651-6600

**Emergency Telephone Number:**

CHEMTREC: (800) 424-9300 (USA/Canada), (703) 527-3887 (International)

### Section 2: Hazards Identification

**Hazard Classification(s):** Acute Toxicity, category 5, Skin Irritation, Eye Effects, category 2 Respiratory Sensitizer.

**Signal Word:** Warning.



**Precautionary Statement(s):** May cause skin, eye and respiratory irritation.

**CAUTION:** Handling or machining of this product may produce respirable dust particles. Dust may irritate eyes, skin and respiratory tract.

**Inhalation:** Dust may cause irritation or soreness of throat and nose.

**Eye Contact:** Dust may cause temporary irritation or inflammation.

**Skin Contact:** May cause temporary dryness, irritation or rash.

**Ingestion:** Ingestion is unlikely. May cause gastrointestinal disturbances. Never induce vomiting without the advice of a physician.

**Medical Conditions Aggravated by Exposure:** Respiratory effects may be aggravated by smoking. Pre-existing respiratory problems may be aggravated by dust.

### Section 3: Composition / Information on Ingredients

#### Chemical and common names, CAS numbers and concentration

Chemical Name	Common Name	CAS Number	% by weight
Aluminium Oxide	Alumina	1344-28-1	85
Glass Filament	Fiberglass	65997-17-3	15

### Section 4: First Aid Measures

**Inhalation:** Remove to fresh air. Rinse mouth to clear throat and expel dust. Blow nose to evacuate dust. Consult a physician if irritation persists.

**Eye Contact:** Products can be physical irritants to eyes. Do not rub eyes. Keep hands or contaminated body parts away from eyes. Remove contact lenses. Flush with water. If irritation persists, consult a physician.

**Skin Contact:** Products can be physical irritants to skin. Wash with soap and water. For dryness, a skin cream may be helpful. Do not apply anything to a rash. Consult a physician if irritation persists.

**Ingestion:** Drink plenty of water. Do not induce vomiting without advice of a physician. Seek medical attention.

**NOTES TO PHYSICIANS** Skin and respiratory effects are the result of temporary, mild mechanical irritation; exposure does not result in allergic manifestations.

### Section 5: Fire Fighting Measures

**Material is not combustible.** Use extinguishing media suitable for type of surrounding fire.

## Section 6: Accidental Release Measures

**Spill Procedures:** Clean up procedures should minimize formation of airborne dusts. Remove dust by vacuuming using HEPA filtration where possible.

**Release into Air:** Prevent release of airborne particulates where possible. Do not blow dust around. Not a regulated hazardous substance. See Section 8 for appropriate engineering controls.

**Release into Water:** Release into water is not appropriate. Not a regulated hazardous substance.

## Section 7: Handling and Storage

**Storage:** This material is stable and may be stored in a dry place indefinitely. Physical abrasion may produce small amounts of respirable dusts. See precautions/exposure limits under Section 8.

**Normal Use:** Material is stable under normal use and not expected to produce significant hazardous by-products or emissions.

**Machining and Cutting:** This material may produce respirable and nuisance dusts when machined or cut. See Section 8 for exposure controls and personal protection during machining or installation procedures.

**High Temperature Conditions:** Service significantly above the product design temperature may increase friability and the possibility of generating airborne fibers or particulates. While not considered problematic during use, airborne fibers may complicate removal activities. It is recommended that product use be carefully matched to design parameters.

**After Service:** Appropriate ventilation and respiratory protection should be provided in compliance with OSHA standards. Strict adherence to recommended safe work practices is advised. Product removal must consider possible pickup of contaminants found where used and the possibility of usage above design temperatures. See Section 8 for appropriate respiratory protection during removal of material the subject of this SDS.

## Section 8: Exposure Controls / Personal Protection

### Exposure Limits

Aluminum Oxide	
OSHA PEL as 8 hr TWA	15/5 mg/m <sup>3</sup> Total dust/Respirable Fraction
ACGIH PEL as 8 hr TWA	10 mg/m <sup>3</sup> Inhalable particulate with no asbestos and <1% crystalline silica
Canadian PEL as TWA	5 mg/m <sup>3</sup>

Fiberglass	
OSHA PEL as 8 hr TWA	15/5 mg/m <sup>3</sup> Total dust/Respirable Fraction
ACGIH PEL as 8 hr TWA, continuous filament	10/3 mg/m <sup>3</sup> Total dust/Respirable Fraction

**Appropriate Engineering Controls:** Use dust suppression controls. Local exhaust ventilation, point of generation dust collection and/or down-draft work stations to minimize airborne dust generation are recommended when machining product.

**Recommendations for Personal Protective Measures**

Respiratory Protection:	Use appropriate protection pursuant to OSHA 29CFR 1910.134 and 29CFR 1926.103. The following information is provided as a guide and reflects industry recommendations for control of dust.
PPE < 1.0 f/cc	No specific recommendation, use personal protective equipment based on local conditions.
PPE 1.0 f/cc to 5.0 f/cc	Half-face, air purifying respirator equipped with a high efficiency particulate air (HEPA) filter cartridge.
PPE 5.0 to 25 f/cc	Full-face, air purifying respirator equipped with a high-efficiency particulate air (HEPA) filter cartridge
PPE > 25 f/cc	Full-face, positive pressure, supplied air respirator.
PPE Other	Work clothes should be washed separately and the washing machine rinsed following use. If possible, do not take work clothes home following machining or removal activities that produce significant amounts of dust.
Skin Protection	Wear gloves, head coverings and full body clothing to prevent skin irritation. Disposable clothing may be used. Store work clothes and street clothes separately.
Eye Protection	Wear safety glasses or chemical goggles to prevent eye contact. Do not wear contact lenses without goggles. Do not get dust or liquids into eyes. Have eye washing facilities available when using products.
This product is generally not hazardous during normal use. These guidelines are provided for special circumstances involved in machining use and or after service removals. See Section 7 for after service and Section 13 for disposal recommendations.	

## Section 9: Physical and Chemical Properties

### Physical and Chemical Properties

Appearance		Odor	pH	Melting Point	Specific Gravity
Physical State	Color				
Thin rigid structures	White to tan	Odorless	N/A	>1760°C (3200°F)	2.1

Note: Freezing point, initial boiling point and boiling range, flash point, evaporation rate, flammability, upper/lower flammability or explosive limits, vapor pressure, vapor density, partition coefficient: n-octanol/water, auto-ignition temperature, decomposition temperature and viscosity are irrelevant, not applicable and/or unavailable to/for this material.

## Section 10: Stability and Reactivity

**Chemical Stability:** Material is stable with no possibility of hazardous reactions or polymerization.

**Chemical Incompatibilities:** Powerful oxidizers; fluorine, chlorine trifluoride, manganese trioxide, oxygen difluoride, etc.

**Hazardous Decomposition Products:** None

## Section 11: Toxicological Information

### Exposure Routes and Effects

**Inhalation:** Dust may cause temporary irritation or soreness of throat and nose. Dust generated during machining of this product should not be inhaled as it may cause permanent lung injury (silicosis). As supplied, this product contains long nonrespirable glass fibers with diameter greater than 3.5 micron.

**Eye Contact:** Dust may cause temporary irritation or inflammation.

**Skin Contact:** May cause temporary dryness, irritation or rash.

**Ingestion:** Ingestion is unlikely. May cause gastrointestinal disturbances. Never induce vomiting without the advice of a physician.

**Medical Conditions Aggravated by Exposure:** Respiratory effects may be aggravated by smoking. Pre-existing respiratory problems may be aggravated by dust.

Toxicology

Aluminum Oxide	
Acute Toxicity Estimate	LD <sub>50</sub> : 4320 mg/kg
Carcinogenicity by ACGIH	Group A4: Not classifiable as a human carcinogen
Fiberglass	
Acute Toxicity Estimate	LD <sub>50</sub> : 5000 mg/kg
Carcinogenicity by IARC	Group 3: Not classifiable as to its carcinogenicity to humans

**Description of Symptoms:** See Exposure Routes and Effects, Hazard Statement(s) and Precautionary Statement(s) sections above.

Section 12: Ecological Information

**Eco toxicological Information:** No information available.

**Distribution:** The raw materials used to manufacture this material are naturally occurring and are widely distributed in igneous rock. Secondary deposits in sedimentary rock may be found.

**Chemical Fate Information:** The relative inertness of these materials indicates that they may be highly persistent in the environment. No information regarding any negative effects of this persistence has been noted.

Section 13: Disposal Consideration

**Disposal:** Consult with local, state and federal regulations. In most cases this material may be land filled safely. Refer to Section 8 for instructions regarding Exposure Controls/Personal Protection.

**Hazardous Waste Classification:** Material is not a regulated hazardous material.

**Empty Containers:** Empty containers may contain product dust or residue. Do not re-use.

Section 14: Transportation Information

Material is not regulated hazardous substances, no specific regulations apply.

## Section 15: Regulatory Information

**Safety, health and environmental regulations specific for this product.**

**EPA: Superfund Amendments and Reauthorization Act (SARA) Title III-** This product does not contain toxic chemicals reportable under Section 313 (40 CFR 372). Sections 311 and 312 (40 CFR 370) apply (delayed hazard).

**Toxic Substances Control Act (TSCA)** - Not required to be listed on the TSCA inventory.

**Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) the Clean Air Act (CAA)** - This product contains fibers with an average diameter greater than one micron and thus is not considered a hazardous air pollutant.

**OSHA:** Comply with **Hazard Communication Standards** CFR 1910.1200 and 29 CFR 1926.59 and the **Respiratory Protection Standards** CFR 1910.134 and 29 CFR 1926.103.

**California:** Product is NOT listed in **Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986**

**Other States:** The materials contained in this product are not known to be regulated by states other than New Jersey; however, state and local OSHA and EPA regulations may apply to these products. If in doubt, contact your local regulatory agency.

**New Jersey Right to Know Act:** Aluminum oxide (CAS No. 1344-28-1) is found on the New Jersey Hazardous Substance list and is subject to reporting under SARA and the New Jersey Worker and Community Right to Know Act.

**Canada: Canadian Workplace Hazardous Materials Information System (WHMIS)** - Aluminum oxide (CAS No. 1344-28-1) is subject to disclosure under the Hazardous Products Act.

**Canadian Environmental Protection Act (CEPA)** - All substances in this product are listed, as required, on the Domestic Substance List (DSL).

**Europe:** The assessment of all available toxicological test data during the REACH registration process resulted in a “no classification” conclusion.

Section 16: Other

Disclaimer:

The information contained herein is based on data considered to be accurate as of the preparation or revision date. It is provided in good faith and in compliance with state and federal regulations. No warranty or representation, express or implied is made as to the accuracy or completeness of this information. Other national, state and/or local regulations may apply.