

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name: **AmorSil Silica Fiber Products**

Chemical Name: Mixture of Amorphous Silica Fibers

Grade(s): AmorSil (All Grades)

Manufacturer/Supplier: **Refractory Specialties, Inc. P.O. Box 189, OH U.S.A. 44672-0189**

Emergency: 1-330-938-2101 (Monday - Friday 8:00 a.m. - 5:00 p.m.)
1-330-821-4051 330-692-3149 or 330-692-0247 (After Hours)

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>COMPONENTS</u>	<u>CAS NUMBER</u>	<u>% BY WEIGHT</u>
Amorphous Silica Fiber	7631-86-9	>20
Silica (amorphous)	7631-86-9	0-40
Starch	56780-58-6	0-20

(See Section 8 "Exposure Controls / Personal Protection" for exposure guidelines)

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING! MAY CAUSE SKIN, EYE, AND RESPIRATORY TRACT IRRITATION. MAY BE HARMFUL IF INHALED.

HAZARD RATINGS

HAZARDOUS MATERIALS INFORMATION SYSTEM (HMIS) RATINGS:

Health: 1, Flammability: 0, Reactivity: 0, Personal Protection Index: X

POTENTIAL HEALTH EFFECTS

INHALATION:

If inhaled in sufficient quantity, may cause respiratory tract irritation. Symptoms may include scratchiness of the nose or throat, cough or upper respiratory discomfort.

EYE CONTACT:

Slightly to moderately irritating. Fibers may be abrasive; prolonged contact may cause damage to the outer surface of the eye.

SKIN CONTACT:

Slightly to moderately irritating. Exposure may result in irritation, inflammation, rash or itching.

INGESTION:

If ingested in sufficient quantity, may cause gastrointestinal disturbances. Symptoms may include nausea, vomiting, or abdominal pain.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Pre-existing medical conditions, including dermatitis, asthma or chronic lung disease may be aggravated by exposure; individuals who are atopic (with a history of allergies) may experience greater amounts of skin and respiratory irritation.

HAZARD CLASSIFICATION:

The **International Agency for Research on Cancer (IARC)** has determined that there is inadequate evidence for the carcinogenicity of glass filaments in humans and experimental animals (IARC-Class 3)

4. FIRST AID MEASURES

FIRST AID PROCEDURES

INHALATION:

If respiratory tract irritation occurs, relocate individual to a dust free environment. Get medical attention if irritation persists. See Section 8 for additional measures to reduce or eliminate exposure.

EYE CONTACT:

If eyes become irritated, flush immediately with large amounts of lukewarm water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Do not rub eyes. Get medical attention if irritation persists.

SKIN CONTACT:

If skin becomes irritated, remove contaminated clothing. Do not rub or scratch exposed skin. Wash area of contact thoroughly with soap and water. Using a skin cream or lotion after washing may be helpful.

INGESTION:

If gastrointestinal irritation occurs, relocate individual to a dust free environment. Seek medical attention if symptoms persist.

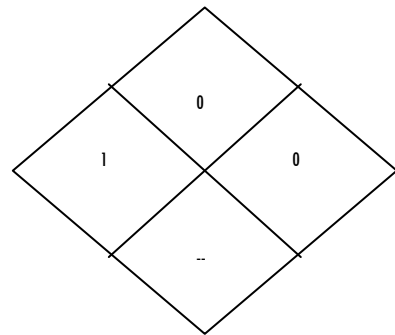
NOTES TO PHYSICIANS:

Skin and respiratory effects are the result of mechanical irritation; fiber exposure does not result in allergic manifestations.

5. FIRE FIGHTING MEASURES



4 -- EXTREME
 3 -- HIGH
 2 -- MODERATE
 1 -- LIGHT
 0 -- INSIGNIFICANT



NFPA Unusual Hazards: None

Flammable Properties:

Flashpoint: None.
 Method: N. A.

Flammable Limits:

Lower Flammable Limit: N. A.
 Upper Flammable Limit: N. A.

Autoignition Temperature: None.

Hazardous Decomposition Products:

Decomposition products may include carbon dioxide, carbon monoxide, water and smoke.

Extinguishing Media:

Use extinguishing media suitable for type of surrounding fire.

Fire Fighting Instructions:

See "Extinguishing Media" above.

Unusual Fire and Explosion Hazard:

None.

6. ACCIDENTAL RELEASE MEASURES

In this product's new condition it is not listed as a hazardous waste. Check with local authorities for specific regulations, particularly after use. New product may be cleaned up and contained using HEPA vacuum and damp clean up. Avoid creating dust.

SPILL PROCEDURES

Use vacuum suction with HEPA filters to clean up spilled material. Use wet sweeping or a dust suppressant where sweeping is necessary.

7. HANDLING AND STORAGE

HANDLING AND STORAGE

Handle material with caution. Minimize airborne dusts by avoiding the unnecessary disturbance of materials. Depending on the product's use, other contaminants may also be present. During removal, the exposed material should be frequently misted with water to minimize airborne dust. A surfactant may be added to the water to improve the wetting process. Use only enough water to wet the insulation. Do not allow water to accumulate on floors.

Clean Up

Dust suppressing cleaning methods such as wet sweeping or vacuuming should be used to clean the work area. If vacuuming is used the vacuum must be equipped with a HEPA filter. Compressed air or dry sweeping should not be used for cleaning. Dust suppressing compounds may be used to clean up light dust. For additional information regarding the use and handling of this material, contact Refractory Specialties, Inc. at 1-330-938-2101.

EMPTY CONTAINERS

Product packaging may contain residue. Do not reuse.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES

<u>Components</u>	<u>OSHA (PEL)</u>	<u>ACGIH (TLV)</u>	<u>SUPPLIER</u>
Amorphous Silica Fiber	3 mg/m ³ PEL (resp dust) 6 mg/m ³ PEL (total dust)	10 mg/m ³	None Established
Silica (amorphous)	3 mg/m ³ PEL (resp dust) 6 mg/m ³ PEL (total dust)	10 mg/m ³	None Established
Starch	5 mg/m ³ PEL (resp. dust) 15 mg/m ³ PEL (total dust)	10 mg/m ³ TLV (total dust)	None Established

ENGINEERING CONTROLS

Dust suppressing control technologies such as local exhaust ventilation, point of generation dust collection, down draft work stations, emission controlling tool designs, and materials handling equipment are effective means of minimizing airborne emissions. For additional information, contact Refractory Specialties, Inc. at 1-330-938-2101.

PERSONAL PROTECTION EQUIPMENT**RESPIRATORY PROTECTION:**

When engineering and/or administrative controls are insufficient, the use of appropriate respiratory protection, pursuant to the requirements of OSHA 1910.134 AND 29 CFR 1926.103, is recommended. The evaluation of workplace hazards and the identification of appropriate respiratory protection is best performed, on a case by case basis, by a qualified Industrial hygienist.

SKIN PROTECTION:

Wear gloves, head coverings and full body clothing as necessary to prevent skin irritation. Washable or disposable clothing may be used. If possible, do not take unwashed clothing home. Work clothes should be washed separately from other clothing and the washing machine rinsed thoroughly following use. Inform the launderer of the proper procedures. Store work clothes and street clothes separately to prevent contamination.

EYE PROTECTION:

Wear safety glasses or chemical goggles to prevent eye contact. Do not wear contact lenses unless chemical goggles are also worn. Do not touch eyes with contaminated body parts or materials. Have eye-washing facilities readily available where eye contact can occur.

9. PHYSICAL AND CHEMICAL PROPERTIES
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Odor and Appearance: White or off-white, odorless ceramic shape. Boiling Point: N. A. Melting Point: 3000 F minimum Vapor Pressure: N. A. Vapor Density (Air = 1): N. A. Molecular Weight: N. A.	Chemical Family: Vitreous Silica Fiber % Solubility in Water: N. A. Specific Gravity: 2.10 pH: N. A. % Volatile: N. A. Molecular Formula: N. A.
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10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:	Stable under conditions of normal use.
INCOMPATIBILITY:	Incompatible with fluorine, oxygen difluoride, chlorine vif luoride, and alkalis
CONDITIONS TO AVOID:	None.
HAZARDOUS DECOMPOSITION PRODUCTS:	Decomposition products may include carbon monoxide, carbon dioxide, and smoke.
HAZARDOUS POLYMERIZATION:	Not Applicable.

11. TOXICOLOGICAL INFORMATION

None of the components of this product are listed as carcinogens by the International Agency for Research on Cancer (IARC).

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

No data available.

Distribution:

No data available.

Chemical Fate Information:

No data available.

13. DISPOSAL CONSIDERATIONS

DISPOSAL

Amorphous silica fiber is not classified as a hazardous waste according to Federal regulations (40 CFR 261). Check local, regional, state or provincial regulations for applicable requirements for disposal. Any processing, use, alteration or chemical additions to the product, as purchased, may alter the disposal requirements. Under Federal regulations, it is the waste generator's responsibility to properly characterize a waste material, to determine if it is a "hazardous" waste.

EMPTY CONTAINERS: Product packaging may contain product residue. Do not reuse.

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT)

BILL OF LADING DESCRIPTION (49 CFR 172.202): AMORSIL FIBER PRODUCTS (NON-REGULATED)

UNITED NATIONS (UN) NUMBER: NOT APPLICABLE

NORTH AMERICA (NA) NUMBER: NOT APPLICABLE

15. REGULATORY INFORMATION

Key statutory and regulatory classifications or listings for the product, as manufactured, which may impact product storage, use, handling or disposal:

U.S. FEDERAL REGULATIONS

Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA)

Constituents regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA 40 CFR 302):

NONE

Most Amorphous Silica Fiber products, including this product, are composed of Amorphous Silica Fiber with an average diameter greater than 10 micron, and therefore are not considered CERCLA hazardous substances.

Clean Air Act (CAA)

Substances regulated as hazardous air pollutants under Section 112 of the Clean Air Act Amendments of 1990:

NONE

Most Amorphous Silica Fiber products, including this product, are composed of Amorphous Silica Fiber with an average diameter greater than 10 micron, and therefore are not considered CAA hazardous substances.

Toxic Substances Control Act (TSCA)

All substances in this product are listed, as required, on the TSCA inventory.

Superfund Amendments and Reauthorization Act (SARA) Title III Information: SARA Hazard Category

Listed below are the hazard categories for the Superfund Amendments and Reauthorization Act (SARA) Section 311/312 (40 CFR 370):

Immediate Hazard: -- Fire Hazard: -- Reactivity Hazard: -- Delayed Hazard: -- Pressure Hazard: --

SARA 313 Information

Toxic chemical(s) subject to the annual reporting requirements of the Superfund Amendments and Reauthorization Act (SARA) Section 313 (40 CFR 372)"

NONE

SARA 302/311/312 Information

Extremely hazardous substances subject to the notification and inventory reporting requirements of the Superfund Amendments and Reauthorization Act (SARA) Section 302 (40 CFR 355) and Section 311/312 (40 CFR 370) respectively:

NONE

STATE REGULATIONS**California:**

Substance(s) listed by the State of California on Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986:

<u>Chemical Name</u>	<u>CAS Number</u>
None	

Other States:

Amorphous silica fiber products are not known to be regulated by states other than California; however, state and local OSHA and EPA regulations may apply to these products. Contact your local agency if in doubt.

INTERNATIONAL REGULATIONS**Canadian Workplace Hazardous Materials Information System (WHMIS):**

The following Canadian Workplace Hazardous Materials Information System (WHMIS) categories apply to this product:

Compressed Gas: --	Flammable/Combustible: --	Oxidizer: --	Acutely Toxic: --
Other Toxic Effects: X	Biohazardous: --	Corrosive: ---	Dangerously Reactive: --

Canadian Environmental Protection Act (CEPA)

All substances in this product are listed, as required, on the Domestic Substances List (DSL). Chemical(s) which are listed on the Non-Domestic Substances List:

NONE

16. OTHER INFORMATION**After Service Removal:**

As manufactured, this product is made with amorphous silica fiber which does not contain respirable crystalline silica. However, following sustained, high temperature (>1800°F) use, it is possible for portions of the exposed amorphous silica to de-vitrify into cristobalite. The de-vitrification of amorphous silica can take place at lower temperatures than mentioned above, in the presence of fluxing materials - such as alkali metals. Chronic exposure to respirable crystalline silica may lead to lung disease. IARC has concluded that: "Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1)." [*IARC Monograph 68*, June 1997, p. 210- 211]. The Occupational Safety and Health Administration (OSHA) has adopted a permissible exposure limit (PEL) for respirable cristobalite at 0.05 mg/m³. When needed, the use of proper exposure controls and respiratory protection is recommended to reduce potential health risks and to ensure compliance with OSHA requirements. The evaluation of workplace hazards and the identification of appropriate respiratory protection is best performed, on a case by case basis, by a qualified Industrial Hygienist. For more detailed information regarding respirable crystalline silica, call Refractory Specialties, Inc.

Definitions:

ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstracts Service
EPA: Environmental Protection Agency
Fibers/cc: Fibers per cubic centimeter
HEPA: High Efficiency Particulate Air
HMIS: Hazardous Materials Information System
mg/m³: Milligrams per cubic meter of air
NFPA: National Fire Protection Association
NIOSH: National Institute for Occupational Safety and Health
OSHA: Occupational Safety and Health Administration
29 CFR 1910.134 & 1926.103: OSHA Respiratory Protection Standard

29 CFR 1910.1200 & 1926.59: OSHA Hazard Communication Standard

PEL: Permissible Exposure Limit

RCRA: Resource Conservation and Recovery Act

SARA: Superfund Amendments and Reauthorization Act

Title III: Emergency Planning and Community Right to Know Act

Section 302: Extremely Hazardous Substances

Section 304: Emergency Release

Section 311: MSDS/List of Chemicals and Hazardous Inventory

Section 312: Emergency and Hazardous Inventory

Section 313: Toxic Chemicals and Release Reporting

SVF: Synthetic Vitreous Fiber

TLV: Threshold Limit Value (ACGIH)

TSCA: Toxic Substances Control Act

DISCLAIMER

The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However, no warranty or representation, express or implied, is made as to the accuracy or completeness of the foregoing data and safety information. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.