

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name: **Rigidizer Products**

Chemical Name: Mixture of Amorphous Silicas and Sodium Silicates

Grade(s): Rigidizer (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>
Silica (amorphous)	7631-86-9	0-90
Sodium Silicate	1344-09-8	0-10

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

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

MAY CAUSE IRRITATION WITH PROLONGED CONTACT. DO NOT GET IN EYES, ON SKIN, ON CLOTHING. DO NOT TAKE INTERNALLY. WEAR SUITABLE PROTECTIVE CLOTHING. FLUSH AFFECTED AREA WITH WATER. PROTECT PRODUCT FROM FREEZING. NOT FLAMMABLE OR COMBUSTIBLE.

HAZARD RATINGS

HAZARDOUS MATERIALS INFORMATION SYSTEM (HMIS) RATINGS:
Health: 1*, Flammability: 0, Reactivity: 0, Personal Protection Index: X

POTENTIAL HEALTH EFFECTS

TARGET ORGANS:

Skin, eyes, and lungs.

INHALATION:

Not a likely route of exposure.

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.

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.

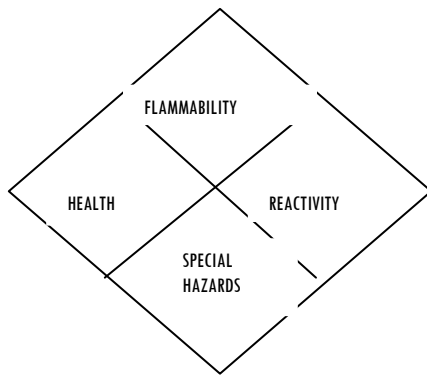
INGESTION:

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

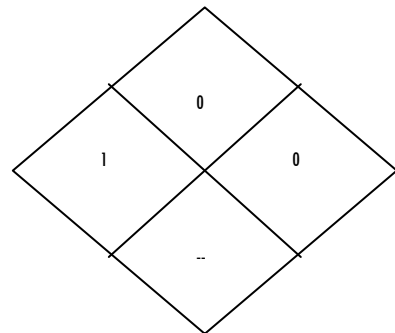
NOTES TO PHYSICIANS:

Skin and respiratory effects are the result of mechanical irritation; Based upon the individual's reactions, the physician's judgment should be used to control symptoms and clinical condition.

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

Small Spills: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area.

Large Spills: Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery drums or tank truck for proper disposal. Contact an approved waste hauler for disposal of contaminated recovery material. Dispose of in compliance with regulations indicated in Section 13 (Disposal Considerations)

7. HANDLING AND STORAGE

HANDLING AND STORAGE

Avoid eye and skin contact. Do not take internally. Ensure all containers are labeled. Keep the container closed when not in use.

STORAGE

Store in containers tightly closed. Protect product from freezing.

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>
Silica amorphous	6 mg/m ³ (< 1% crystalline silica)	10 mg/m ³ (total dust, containing < 1% crystalline silica) 3 mg/m ³ (respirable dust, containing < 1% crystalline silica)	None Established

ENGINEERING CONTROLS

General ventilation is recommended. Local exhaust ventilation may be necessary when dusts or mists are generated. For additional information, contact Refractory Specialties, Inc. at 1-330-938-2101.

PERSONAL PROTECTION EQUIPMENT**RESPIRATORY PROTECTION:**

Respiratory protection is not normally needed. If mists, vapors or aerosols are generated an approved respirator is recommended.

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

Odor and Appearance: Cloudy-white liquid with slight odor.

Chemical Family: Mixture of amorphous and sodium silicates

Boiling Point: > 212 F.

% Solubility in Water: N. A.

Melting Point: N/A

Specific Gravity: 1.05 to 1.40

Vapor Pressure: N. A.

pH: 9.0 to 9.9.

Vapor Density (Air = 1): N. A.

% Volatile: N. A.

Molecular Weight: N. A.

Molecular Formula: N. A.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:

Stable under conditions of normal use.

INCOMPATIBILITY:

N/A

CONDITIONS TO AVOID:

None.

HAZARDOUS DECOMPOSITION PRODUCTS:

None.

HAZARDOUS POLYMERIZATION:

Not Applicable.

11. TOXICOLOGICAL INFORMATION

The following results are for the product.

ACUTE ORAL TOXICITY :

Species LD50 Test Descriptor

Rat 15,380 mg/kg Product

Rating : Non-Hazardous

PRIMARY SKIN IRRITATION :

Draize Score Test Descriptor

0.3 / 8.0 Product

Rating : Minimally irritating

PRIMARY EYE IRRITATION :

Draize Score Test Descriptor

3.7 / 110.0 Product

Rating : Practically non-irritating

CARCINOGENICITY :

None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

12. ECOLOGICAL INFORMATION**ECOTOXICOLOGICAL EFFECTS :**

No toxicity studies have been conducted on this product.

MOBILITY :

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The

level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models. If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	Water	Soil/Sediment
<5%	30 - 50%	50 - 70%

The portion in water is expected to be soluble or dispersible.

BIOACCUMULATION POTENTIAL

This preparation or material is not expected to bioaccumulate.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION

Based on our hazard characterization, the potential environmental hazard is: Moderate

Based on our recommended product application and the product's characteristics, the potential environmental exposure is: Low

If released into the environment, see CERCLA/SUPERFUND in Section 15.

13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D. As a non-hazardous waste, it is not subject to federal regulation. Consult state or local regulation for any additional handling, treatment or disposal requirements. For disposal, contact a properly licensed waste treatment, storage, disposal or recycling facility.

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT)

BILL OF LADING DESCRIPTION (49 CFR 172.202):	RIGIDIZER (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

Notification of spills of this product is not required.

Clean Air Act (CAA)

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

NONE

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

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 / formerly Sec. 307, 40 CFR 116.4 / formerly Sec. 311 :

This product may contain trace levels (<0.1% for carcinogens, <1% all other substances) of the following substance(s) listed under the regulation. Additional components may be unintentionally present at trace levels.

- Chemical Name
- Ammonium Carbonate
- Ammonium Hydroxide

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:

This product contains amorphous silica which may be required to be disclosed for state right-to-know laws.

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: --	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

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
RCF: Refractory Ceramic Fiber
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.