



MATERIAL SAFETY DATA SHEET

MSDS No. M0049

Effective Date: 05/09/2008

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name: FIBERSTICK™ REFRACTORY CEMENT

Manufacturer/Supplier: Unifrax I LLC

2351 Whirlpool St.

Niagara Falls, NY 14305-2413

Product Stewardship Information Hotline

1-800-322-2293 (Monday - Friday 8:00 a.m. - 4:30 p.m. EST)

For additional MSDSs, visit our web page, <http://www.unifrax.com>, or call Unifrax

Customer Service at (716) 278-3872

CHEMTREC Assist: CHEMTREC will provide assistance for chemical emergencies. Call 1-800-424-9300

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>COMPONENTS</u>	<u>CAS NUMBER</u>	<u>% BY WEIGHT</u>
Kyanite	1302-76-7	45-50
Sodium silicate	1344-09-8	25-30
Calcined clay	1332-58-7	15-20
Crystalline silica (quartz)	14808-60-7	5-10
Water	7732-18-5	0-5

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

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION! MAY BE HARMFUL IF SWALLOWED.

MAY CAUSE SKIN AND EYE IRRITATION.

WARNING! DRIED, ABRADED PRODUCT MAY CAUSE RESPIRATORY TRACT IRRITATION AND POSE

POSSIBLE CANCER HAZARD BY INHALATION.

(See below and Section 11 for more information)

CHRONIC EFFECT

If product is dried and abraded, such that particles become airborne, exposure to respirable crystalline phase silica may occur. Inhalation of respirable crystalline silica (quartz) can cause silicosis and may cause lung cancer.

OTHER POTENTIAL EFFECTS

TARGET ORGANS:

Respiratory Tract (nose & throat), Eyes, Skin

RESPIRATORY TRACT (nose & throat) IRRITATION:

If dried, airborne product is inhaled in sufficient quantity, may cause temporary, mild mechanical irritation to respiratory tract. Symptoms may include scratchiness of the nose or throat, cough or chest discomfort.

EYE IRRITATION:

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

eye

SKIN IRRITATION:

Exposure may result in inflammation, rash or itching.

GASTROINTESTINAL IRRITATION:

Unlikely route of exposure. Small amounts swallowed incidental to normal handling operations are not likely to cause injury.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

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

HAZARD CLASSIFICATION

The Seventh Annual Report on Carcinogens (1994), prepared by the **National Toxicology Program (NTP)**, classified respirable crystalline silica (quartz) as a substance which may reasonably be anticipated to be a carcinogen.

The **International Agency for Research on Cancer (IARC)** has classified respirable crystalline silica as a substance known to be carcinogenic to humans (Group 1).

The **State of California**, pursuant to Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986, has listed "Silica, crystalline (airborne particles of respirable size)" as a material known to the State of California to cause cancer.

The **Hazardous Materials Identification System (HMIS)** –

Health 1* Flammability 0 Reactivity 0 Personal Protection Index: X (Employer Determined)
(* denotes potential for chronic effects)

4. FIRST AID MEASURES

FIRST AID PROCEDURES

RESPIRATORY TRACT (nose & throat) IRRITATION:

If respiratory tract irritation develops, move the person to a dust free location. Get medical attention if the irritation continues. See Section 8 for additional measures to reduce or eliminate exposure.

EYE IRRITATION:

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 IRRITATION:

If skin becomes irritated, remove soiled 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.

GASTROINTESTINAL IRRITATION:

If gastrointestinal tract irritation develops, move the person to a dust free environment.

NOTES TO PHYSICIANS:

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

5. FIRE FIGHTING MEASURES

NFPA Codes: **Flammability: 0** **Health: 1** **Reactivity: 0** **Special: 0**

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NFPA Unusual Hazards: None

Flammable Properties: None

Flash Point: None

Hazardous Decomposition Products: None.

Unusual Fire and Explosion Hazard: None

Extinguishing Media: Use extinguishing media suitable for type of surrounding fire.

6. ACCIDENTAL RELEASE MEASURES

SPILL PROCEDURES

WET PRODUCT

Do not walk through spilled material. Shovel into a container for later disposal. Avoid cleanup procedures that may result in water pollution.

DRIED PRODUCT

Avoid creating airborne dust. Dust suppressing cleaning methods such as wet sweeping or vacuuming should be used to clean the work area. If vacuuming, the vacuum must be equipped with a HEPA filter. Compressed air or dry sweeping should not be used for cleaning.

7. HANDLING AND STORAGE

HANDLING AND STORAGE

Respirable particulates are not expected to be released under normal conditions of use and application. Removal of used product, sanding, scraping, or otherwise destroying the integrity of the dried product may result in the release of particulates. During such operations, appropriate respiratory protection should be provided as discussed below and/or in Section 8 under Respiratory Protection. 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.

Minimize airborne dusts by avoiding the unnecessary disturbance of materials.

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.

For additional information regarding the use and handling of this product, contact the Unifrax Product Stewardship Information Line at 1-800-322-2293 (See Section 16).

EMPTY CONTAINERS

Product packaging may contain residue. Do not reuse.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES

COMPONENTS	OSHA PEL	ACGIH TLV
Kyanite	5 mg/m ³ (resp.fraction) 15 mg/m ³ (total dust)	3 mg/m ³
Sodium silicate	None established	None established
Calcined clay	5 mg/m ³ (resp.fraction) 15 mg/m ³ (total dust)	2 mg/m ³
Crystalline silica (quartz)	See below*	0.0025 mg/m ³
Water	None established	None established

*Normal conditions of use and application of the wet product are not expected to release respirable particulates of crystalline silica. If the ingredient of this product is dried and abraded, exposure to crystalline phase silica may result. OSHA has established formulae for Permissible Exposure Limits (PELs), in mg/m³, for crystalline phase silica as follows (see 29 CFR 1910. 1000 TABLE Z-3 "Mineral Dusts"):

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Silica: Crystalline Quartz (Respirable)	$\frac{10 \text{ mg/m}^3}{\% \text{ SiO}_2 + 2}$	Quartz (Total Dust)	$\frac{30 \text{ mg/m}^3}{\% \text{ SiO}_2 + 2}$
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Tridymite and Cristobalite: Use 1/2 the value calculated from the mass formulae for quartz.
The ACGIH threshold limit values (TLVs) for crystalline phase silica are as follows: Cristobalite & Quartz 0.025 mg/m³

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 particle emissions. For additional information, contact the Unifrax Product Stewardship Information Line at 1-800-322-2293 (See Section 16).

PERSONAL PROTECTION EQUIPMENT

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 soiled body parts or materials. Have eye washing facilities readily available where eye contact can occur.

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.

RESPIRATORY PROTECTION (WHEN PRODUCT IS DRIED AND ABRADED)

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR AND APPEARANCE:	Odorless, heavy cream or paste
CHEMICAL FAMILY:	Aluminosilicate
BOILING POINT:	Not Applicable
WATER SOLUBILITY (%):	Not Soluble in Water
MELTING POINT:	1760° C (3200° F)
SPECIFIC GRAVITY:	2.50 – 2.75
VAPOR PRESSURE:	Not Applicable
pH:	11.2 - 11.8
VAPOR DENSITY (Air = 1):	Not Applicable
% VOLATILE:	35-45%
MOLECULAR FORMULA:	Not Applicable

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:	Stable under conditions of normal use.
INCOMPATIBILITY:	Soluble in hydrofluoric acid, phosphoric acid, and concentrated alkali.
CONDITIONS TO AVOID:	None.
HAZARDOUS DECOMPOSITION PRODUCTS:	None.
HAZARDOUS POLYMERIZATION:	Not Applicable.

11. TOXICOLOGICAL INFORMATION

Normal conditions of use and application are not expected to release respirable particulates of crystalline silica. Removal of used product, sanding, scraping, or otherwise destroying the integrity of the dried product may result in the release of particulates.

NOTE ON CRYSTALLINE SILICA: Respirable particulates of crystalline silica are not expected to be released under normal conditions of use, nor during the application of the wet product. If this product is dried and abraded, exposure to crystalline phase silica may result. In Monograph 68, (IARC 1997) noted that six cohort studies of quarries and granite works "revealed lung cancer excesses" (p. 206) from exposure to respirable crystalline silica. In addition, the results of two cohort studies of refractory brick workers from China and Italy and of one cohort study of diatomaceous earth workers from the US "provided consistent evidence of increased lung cancer" (p. 207). Different specimens of quartz with particle sizes in the respirable range were tested in four experiments in rats by inhalation and in four separate experiments in rats by intratracheal instillation (IARC 1997). In these eight experiments, there were significant increases in the incidence of adenocarcinomas and squamous-cell carcinomas of the lung; marked, dense pulmonary fibrosis was also observed (p. 208).

To obtain more information, please call the toll free telephone number for the Unifrax Product Stewardship Program found in Section 16 - Other Information.

12. ECOLOGICAL INFORMATION

No ecological concerns have been identified.

13. DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT

To prevent waste materials from becoming airborne during waste storage, transportation and disposal, a covered container or plastic bagging is recommended.

DISPOSAL

This product 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.

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT)

Hazard Class:	Not Regulated	United Nations (UN) Number:	Not Applicable
Labels:	Not Applicable	North America (NA) Number:	Not Applicable
Placards:	Not Applicable	Bill of Lading:	Product Name

INTERNATIONAL

Canadian TDG Hazard Class & PIN: Not regulated
Not classified as dangerous goods under ADR (road), RID (train) or IMDG (ship).

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS

EPA: **Superfund Amendments and Reauthorization Act (SARA)** Title III - This product does not contain any substances reportable under Sections 302, 304, 313, (40 CFR 372). Sections 311 and 312 (40 CFR 370) apply (delayed hazard).
Toxic Substances Control Act (TSCA) - All substances in this product are listed, as required, on the

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TSCA inventory.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the **Clean Air Act (CAA)** - not considered a hazardous air pollutant.

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

California: "Silica, crystalline (airborne particles of respirable size)" is listed in **Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986** as a chemical known to the State of California to cause cancer.

INTERNATIONAL REGULATIONS

Canada: **Canadian Workplace Hazardous Materials Information System (WHMIS)** – Crystalline silica is classified as Class D2A – Materials Causing Other Toxic Effects
Canadian Environmental Protection Act (CEPA) - All substances in this product are listed, as required, on the Domestic Substance List (DSL)

16. OTHER INFORMATION

Product Stewardship Program

Unifrax has established a program to provide customers with up-to-date information regarding the proper use and handling of this product. If you would like more information about this program, please call the Unifrax Product Stewardship Information Hotline at 1-800-322-2293.

DEFINITIONS

ACGIH:	American Conference of Governmental Industrial Hygienists
ADR:	Carriage of Dangerous Goods by Road (International Regulation)
CAA:	Clean Air Act
CAS:	Chemical Abstracts Service
CERCLA:	Comprehensive Environmental Response, Compensation and Liability Act
DSL:	Domestic Substances List
EPA:	Environmental Protection Agency
EU:	European Union
f/cc:	Fibers per cubic centimeter
HEPA:	High Efficiency Particulate Air
HMIS:	Hazardous Materials Identification System
IARC:	International Agency for Research on Cancer
IATA:	International Air Transport Association
IMDG:	International Maritime Dangerous Goods Code
mg/m³:	Milligrams per cubic meter of air
mmpcf:	Million particles per cubic meter
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 Standards
29 CFR 1910.1200 & 1926.59:	OSHA Hazard Communication Standards
PEL:	Permissible Exposure Limit (OSHA)
PIN:	Product Identification Number
PNOC:	Particulates Not Otherwise Classified
PNOR:	Particulates Not Otherwise Regulated
PSP:	Product Stewardship Program
RCRA:	Resource Conservation and Recovery Act
REG:	Recommended Exposure Guideline
REL:	Recommended Exposure Limit (NIOSH)
RID:	Carriage of Dangerous Goods by Rail (International Regulations)
SARA:	Superfund Amendments and Reauthorization Act
SARA Title III:	Emergency Planning and Community Right to Know Act
SARA Section 302:	Extremely Hazardous Substances

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SARA Section 304:	Emergency Release
SARA Section 311:	MSDS/List of Chemicals and Hazardous Inventory
SARA Section 312:	Emergency and Hazardous Inventory
SARA Section 313:	Toxic Chemicals and Release Reporting
STEL:	Short Term Exposure Limit`
SVF:	Synthetic Vitreous Fiber
TDG:	Transportation of Dangerous Goods
TLV:	Threshold Limit Value (ACGIH)
TSCA:	Toxic Substances Control Act
TWA:	Time Weighted Average
WHMIS:	Workplace Hazardous Materials Information System (Canada)

Revision Summary: Updated corporate name, TLVs. Replaces 11/1/05 MSDS.

MSDS Prepared By: UNIFRAX RISK MANAGEMENT DEPARTMENT

DISCLAIMER

The information presented herein is presented in good faith and believed to be accurate as of the effective date of this Material Safety Data Sheet. Employers may use this MSDS to supplement other information gathered by them in their efforts to assure the health and safety of their employees and the proper use of the product. This summary of the relevant data reflects professional judgment; employers should note that information perceived to be less relevant has not been included in this MSDS. Therefore, given the summary nature of this document, Unifrax I LLC does not extend any warranty (expressed or implied), assume any responsibility, or make any representation regarding the completeness of this information or its suitability for the purposes envisioned by the user.



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