

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name: **Gemcolite Solulite Fiber Products**
Chemical Name: **Alkaline Earth Silicates Wool Product**
Grade(s): FG18-105, FG23-105, FG23-106 (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> |
|--|-------------------|--------------------|
| Calcium-Magnesium-Silicate Mixture | 329211-92-9 | 0-20 |
| Calcium-Magnesium-Zirconium-Silicate Mixture | 308084-09-5 | 0-20 |
| Aluminum Silicate | 1302-76-7 | 0-70 |
| CaO | 1305-78-8 | 0-25 |
| MgO | 1309-48-4 | 0-20 |
| Silica (amorphous) | 7631-86-9 | 0-15 |
| Starch | 56780-58-6 | 0-10 |
| Wollastonite, (Calcium silicate) | 13983-17-0 | 0-70 |

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

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

- May cause temporary, mild mechanical irritation to the eyes, skin, nose, and/or throat.
- Pre-existing skin and respiratory conditions may be aggravated by exposure.

TARGET ORGANS:

Skin, eyes, and lungs.

INHALATION:

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

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.

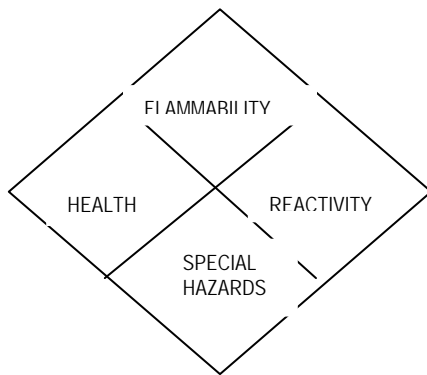
INGESTION:

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

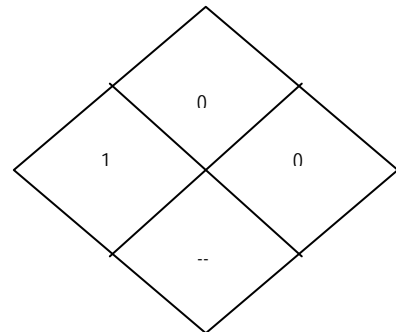
NOTES TO PHYSICIANS:

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

New product may be cleaned up and contained using HEPA vacuum and damp clean up. Avoid creating dust.

7. HANDLING AND STORAGE**SPILL PROCEDURES**

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

STORAGE

Store in original factory container in a dry area. Keep container closed when not in use.

HANDLING

Limit use of power tools unless in conjunction with local exhaust. Use hand tools whenever possible. Frequently clean the work area with HEPA filtered vacuum or wet sweeping to minimize the accumulation of debris.
Do Not Use Compressed Air For Cleanup.

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**MANUFACTURER'S RECOMMENDATION**

It is prudent to reduce exposure to respirable dusts to the lowest attainable level through the use of engineering controls such as ventilation and dust collection devices. Industrial hygiene standards and occupational exposure limits may vary between countries, state and local jurisdictions. Contact your employer to determine which exposure levels apply to your facility. If no regulatory standards apply, a qualified industrial hygienist can assist with a specific workplace evaluation including recommendations for respiratory protection. In the absence of such guidance, the manufacturer generally recommends the control of CMS wool exposures to 1 fiber/cc or less.

ENGINEERING CONTROLS

Use feasible engineering controls such as local exhaust ventilation, point of generation dust collection, down draft work stations, emission controlling tool designs, and materials handling equipment designed to minimize airborne fiber emissions.

PERSONAL PROTECTION EQUIPMENT

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.

RESPIRATORY PROTECTION: When it is not possible or feasible to reduce respirable dust exposures through engineering controls, employees are encouraged to use good work practices together with respiratory protection. Comply with OSHA Respiratory Protection Standards, 29-CFR-1910.134 and 29-CFR-1926.103, for the particular hazard or airborne concentrations to be encountered in the work environment. For the most current information on respirator selection, contact your supplier.

9. PHYSICAL AND CHEMICAL PROPERTIES

Odor and Appearance: Off-white, odorless ceramic shape. Chemical Family: Calcium, Magnesium, Silicate Mix
Boiling Point: N. A. % Solubility in Water: N. A.
Melting Point: 2300F minimum Specific Gravity: 2.73 – 3.2
Vapor Pressure: N. A. pH: N. A.
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: Soluble in hydrofluoric acid, phosphoric acid, and concentrated alkali.
CONDITIONS TO AVOID: None.
HAZARDOUS DECOMPOSITION PRODUCTS: Decomposition products may include carbon monoxide, carbon dioxide, and smoke.
HAZARDOUS POLYMERIZATION: Not Applicable.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGY

CMS wools have been tested for the biopersistence using methods devised by the European Union. The results of these studies exonerate CMS wools from carcinogen classification under the criteria listed in Nota Q of European Commission Directive 97/69/EU.

In a lifetime carcinogenicity test, rats were exposed by inhalation for two years (5 days a week; 6 hours a day) to CMS fibers at 200 WHO fibers/ml. There was neither fibrosis nor carcinogenic response; only reversible cellular changes were seen. Further, subchronic inhalation studies on rats with CMS fibers at concentrations of 150 fibers (>20 µm long) per ml for 90 days with follow up to 1 year showed neither inflammation nor cell proliferation. All parameters studied returned rapidly to baseline levels on cessation of exposure.

After service, CMS wools may contain crystalline phases including some forms of silica. (See Section 16) However, CMS fibers heated to 1000°C for two weeks were not cytotoxic to macrophage-like cells at concentrations up to 320 µm/cm². Silica, Amorphous: Toxic effects found in animals following a single inhalation exposure to amorphous silica include upper respiratory irritation, lung congestion, bronchitis and emphysema. Repeated inhalation exposures at concentrations of 50 to 150 mg/m³ produced increased lung weights and lung changes. No progressive pulmonary fibrosis was seen and the observed lung changes were reversible. No adverse effects were observed in this study at 10 mg/m³ No animal test reports have been found which define carcinogenic, mutagenic or reproductive effects.

EPIDEMIOLOGY

This material has not been the subject of an epidemiology study.

NOTE

Neither the International Agency for Research on Cancer (IARC) nor the National Toxicology Program nor any other U.S. regulatory or classification entity has evaluated CMS wool. Soluble Fiber Products are members of a family of materials whose properties are distinct in several ways from other man-made mineral fibers. In October 2001 IARC re-reviewed Man-Made Vitreous Fibers and "elected not to make an overall evaluation of the newly developed fibers" [such as CMS wool] but recognized that "those that have been tested appear to have low carcinogenic potential in experimental animals."

While CMS wool is an inert material that does not react with the skin, exposures may cause temporary mild mechanical irritation to the eyes, skin, nose and/or throat (for First Aid Measurers,

12. ECOLOGICAL INFORMATION

No adverse effects of this material on the environment are anticipated

13. DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT

To prevent waste materials becoming airborne, a covered container or plastic bagging is recommended.

RCRA

CMS wool, as manufactured, is not classified as a hazardous waste according to Federal regulations (40 CFR 261). As manufactured, CMS wool was tested using EPA's Toxicity Characteristics Leaching Procedure (TCLP). Results showed there were no detectable contaminants or detectable leachable contaminants that exceeded the regulatory levels. 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. Check local, regional, state or provincial regulations to identify all applicable disposal requirements.

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): SOLULITE FIBER PRODUCTS (NON-REGULATED)

UNITED NATIONS (UN) NUMBER: NOT APPLICABLE

NORTH AMERICA (NA) NUMBER: NOT APPLICABLE

15. REGULATORY INFORMATION**UNITED STATES REGULATIONS**

SARA Title III: This product does not contain any substances reportable under Sections 302, 304, 313 (40 CFR 372). Sections 311 and 312 apply.

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

TSCA: CMS wools have been assigned two CAS numbers; however, they are not required to be listed on the TSCA inventory.

CERCLA: CMS wool contains fibers with an average diameter greater than one micron and thus is not considered a CERCLA hazardous substance.

CAA: CMS wool contains fibers with an average diameter greater than one micron and thus is not considered a hazardous air pollutant.

States: CMS wools are not known to be regulated by any State. If in doubt, contact your local regulatory agency.

INTERNATIONAL REGULATIONS

Canada WHMIS: No Canadian Workplace Hazardous Materials Information System categories apply to this product.

Canadian EPA: All substances in this product are listed, as required, on the Domestic Substance List (DSL).

European Union: These products are exonerated from any carcinogenic classification in the countries of the European Union under the provisions of Nota Q of the European Commission Directive 97/69/EC.

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.