Plisulate® Mineral Wool Insulation Board
Safety Data Sheet

1. Identification of Substance

Product Details:
Product Name: Mineral Wool Insulation Board
Product Information: Mineral Wool Boards
Trade Name: Plisulate Mineral Wool

Supplier:
CeramSource, Inc.
P.O Box 6026
E.Brunswick NJ 08816

Emergency Information:
Emergency call: 732-257-5002

2. HAZARDS IDENTIFICATION

(a) Classification of the chemical in accordance with paragraph (d) of §1910.1200

The U.S. Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (HCS) 2012 indicates that IARC Group 2B corresponds to OSHA HCS 2012 Category 2 carcinogen classification (see, e.g., §1910.1200, Appendix F, Part D).

(b) Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200

Under OSHA HCS 2012, RCF is classified as a category 2 carcinogen.

Hazard Pictogram

Signal Word
Warning

Hazard Statements
Suspected of causing cancer by inhalation.

Precautionary statements
Do not handle until all safety instructions have been read and understood.
Use respiratory protection as required; see section 8 of the Safety Data Sheet.

If concerned about exposure, get medical advice.
Store in a manner to minimize airborne dust.
Dispose of waste in accordance with local, state and federal regulations.

Supplementary Information
May cause temporary mechanical irritation to exposed eyes, skin or respiratory tract.
Minimize exposure to airborne dust.

3. Composition/Data on Components

Chemical Characterization:

COMPONENTS	CAS NUMBER	% BY WEIGHT
Refractories, Fibers, Aluminosilicate	142844-00-6	60-75
Silica (amorphous)	112926-00-8	15-25
Starch	9005-25-8	5-10

4. First Aid Measures

FIRST AID PROCEDURES

RESPIRATORY TRAST (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 amount of lukewarm water for at least 15minutes. 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 temporary, mild mechanical irritation; fiber exposure does not result in allergic manifestations.

5. Fire Fighting Measures

Suitable extinguishing agents:

Product is not flammable. Use fire-fighting measures that suit the surrounding fire.

Protective equipment:

General respiratory protective devices. General protection clothing.

6. Accidental Release Measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Use neutralizing agent. Dispose contaminated material as waste according to item 13. Ensure adequate ventilation.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7. Handling and Storage

Handling Information for safe handling:
Keep container tightly sealed.
Store in cool and dry place in tightly closed containers.
Ensure good ventilation at the workplace,

Information about protection against explosions and fires:
The product is non-flammable.

Storage:
Storerooms and containers must meet the requirements: No special requirements. The use of a common storage facility to store the material: Stored away from oxidizing agents.

For more information about storage conditions:
Be careful when handling ceramic fiber, minimize the use of power tools unless in conjunction with local exhaust ventilation devices.as far as possible using manual tools. Use high efficiency residual substances. Do not use Compressed air for cleaning.

Empty containers:
Product packaging may contain residue. Do not reuse.

8. Exposure Controls and Personal Protection

EXPOSURE GUIDELINES:

COMPONENTS	OSHA PEL	MANUFACTURER REG
Refractories, Fibers, Aluminosilicate	None Established	0.5f/cc,8-hr.TWA**

There is no specific regulatory standard for RCF in the U.S OSHA's "Particulate Not Otherwise Regulated(PNOR)"standard (29CFR1910.1000,Subpart Z,Air Contaminants)applies generally; Total Dust 15 mg/m3., Respirable Fraction 5 mg/m3.
**The Refractory Ceramic Fibers Coalition (RCFC) has sponsored comprehensive toxicology and epidemiology studies, to identify potential RCF-related health effects [see Section 11 for more details], consulted experts familiar with fiber and particle science, conducted a thorough review of the RCF-related scientific literature, and further evaluated the data in a state-of-the-art quantitative risk assessment. Based on these efforts and in the absence of an OSHA PEL,RCFC has adopted a recommended exposure guideline, as measured under NIOSH Method 7400B.The manufacturers' REG is intended to promote occupational health and safety through prudent exposure control and reduction and it reflects relative technical and economic feasibility as determined by extensive industrial hygiene monitoring efforts undertaken pursuant to an agreement with the U.S.

Occupational Safety and Health Administration(OSHA).

OTHER OCCUPATIONAL EXPOSURE LEVELS (OEL):

RCF-related occupational exposure limits vary internationally. Regulatory OEL examples include: Canada-0.2 to 1.0f/cc; Non-regulatory OEL examples include: ACGIH TLV0.2f/cc; RCFC REG0.5f/cc. The objectives and criteria underlying each of these OEL decisions also vary. The evaluation of occupational exposure limits and determining their relative applicability to the workplace is best performed, on a case-by-case basis, by a qualified industrial Hygienist.

ENGINEERING CONTROLS:

Use 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：

Respiratory Protection-RCF:

When engineering and/or administrative controls are insufficient to maintain workplace Concentrations within the 0.5f/cc REG, the use of appropriate respiratory protection, pursuant to the requirements of OSHA Standards 29CFR1910.134 and29CFR1926.103,is recommended.
The following information is provided as an example of appropriate respiratory protection for aluminosilicate fibers. The evaluation of workplace hazards and the identification of appropriate respiratory protection is best performed, on a case basis, by a qualified industrial Hygienist.

MANUFACTURER'S RESPIRATORY PROTECTION RECOMMENDATIONS WHEN HANDLING RCF PRODUCTS

Respirable Airborne Fiber Concentration (levels are 8-hr.time-veighted averages)	Respirator Recommendation
Not yet determined but expected to be below 5.0f/cc based on operation	A respirator with a filter efficiency of at least 95%
"Reliably" less than 0.5f/cc	Optional
0.5f/cc to 5.0f/cc	A single use respirator or half-face, air purifying respirator with a filter efficiency of at least95%
5.0f/cc to 25f/cc	Full-face piece, air purifying respirator equipped with a NIOSH certified particulate filter cartridge with a filter efficiency of at least95%or PAPR
Greater than 25f/cc	PAPR with tight-fitting full facepiece or a supplied air respirator in continuous flow mode
When individual workers request respiratory protection as a matter of personal comfort or choice where exposures are "reliably" below 0.5f/cc	A NIOSH certified respirator such as a single Use particulate respirator with a filter efficiency of at least 95%

The 95%filter efficiency recommendation is based on NIOSH respirator selection logic sequence for exposure to particulates. Selection of filter efficiency (i.e.95%, 99% or 99.97%) depends on how

much filter leakage can be accepted. Higher filter efficiency means lower filter leakage. Other

factors to consider are the NIOSH filter series N,R or P.(N) Not resistant to oil, (R)Resistant to oil and (p)oil proof. These recommendations are not designed to limit informed choices, provided that respiratory protection decisions comply with 29 CFR1910.134.

Other Information:

- Concentrations based upon an eight-hour time weighted average (TWA) as determined by air samples collected and analyzed pursuant to NIOSH method 7400(b) for airborne fibers.
- The manufacturer recommends the use of a full-facepiece air purifying respirator equipped with an appropriate particulate filter cartridge during furnace tear-out events and the removal of used RCF to control exposures to air borne fiber and the potential presence of crystalline silica. If exposure levels are known, the respiratory protection chart provided above may be applied.
- Potential exposure to other air borne contaminants should be evaluated by a qualified industrial Hygienist for the selection of appropriate respiratory protection and air monitoring.

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. If soiled work clothing must be taken home, employers should ensure employees are thoroughly trained on the best practices to minimize non-work dust exposure (e.g. vacuum clothes before leaving the work area, wash work clothing separately, rinse washer before washing other household clothes, etc.)

EYE Protection:

Wear safety glasses with side shields or other forms of eye protection in compliance with appropriate OSHA standards to prevent eye irritation. The use of contact lenses is not recommended, unless used in conjunction with appropriate eye protection. Do not touch eyes with soiled body parts or materials. If possible, have eye-washing facilities readily available where eye irritation can occur.

9. Physical and Chemical Properties

General Information

Form: Solid and rigid
Color: Light yellow
Odor: Odorless

Change in condition

Melting point/Melting range: >=1760oc(3200of)
Boiling point/Boiling range: Not determined
Grade Temperature:1260 C (2300F), 1140C,1427C
Flash point: Not applicable
Ignition temperature: Not determined
Evaporation rate: not determined

Lower: Not determined
Upper: Not determined

Vapor pressure: Not determined
Viscosity: Not determined
Density: Not determined
Solubility in/Miscibility with
Proportion: 64kg/m3-500kg/m3
NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. Stability and Reactivity

Hazardous reactions
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

Acute toxicity:

Short-term hazards:
If the product is direct contact with the eyes or skin may cause allergic, erythema, dermatitis symptoms. But the temporary mature of the symptoms is not chronic.
Long-term hazards:
Because of the dust generated contains fiber, long-term or heavy exposure to fibers may cause respiratory disease ,but did not report due to long-term exposure to ceramic fibers and lead to health disorder.
Carcinogenic potential:
IARC Category: 2B, Not detected in the human carcinogenicity data, but see the carcinogenic in animal experiments.
NTP Category: B2. seen in animal studies may lead to cancer.
Animal experiments:
Experimental results and animal species, fiber size also have a relationship, it is also necessary to do many experiments under different conditions.

1. Report: White mice inhaled 8.4mg/cm3 ceramic fiber(RCF)12-month increase of lung cancer
2. Report: the fiber into the chest cavity of white rats. especially the fiber of diameter is less than 0.25um, the length is greater than 8 μm has a great influence on the pleura.
3. Report: intrapleural20mg ceramic fiber (RCF) of 36 white rats, 3 white mice has fibrosis in chest.

4. Report: The golden Rat inhalation 12 mg/cm3,1.8 μm diameter ceramic fibers (RCF), 24months (6 hours per day, 5days a week) will be 1%of the hamster has space for the phenomenon of fibrosis , But the White mice did not appear the same phenomenon.

5. Report: White mice inhaled 3-30mg/cm3 ceramic fiber, the time is 24 months (6hours pet day, 5days a week) 2.6-14.5%of the white mouse generated tumors in lung.

12. Ecological Information

General notes: No effect on the environment
Do not allow material to be released to the environment without proper governmental permits.

13. Disposal considerations

Product:

Recommendation

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation

Discarded plastic bags should be used. The bag is at least 0.05mm thick to prevent the breeding of dust. Disposal must be made according to official regulations.

14. Transport Information

Not classified as dangerous goods under ADR (road), RID (train) or IMDG (ship)

15. Regulations

UNITED STATES REGULATIONS

EPA:

Superfund Amendments and Reauthorization Act (SARA) Title111 - This product does not contain any substances reportable under sections 302, 304, 313, (40CER372). Sections 311 and 312 (40CER370) apply (delayed hazard).
Toxic substances control act(TSCA)-RCF has been assigned a CAS number, however, it is an "article" under TSCA and therefore exempt from listing on the TSCA and therefore exempt from listing on the TSCA inventory.
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Clean Air Act(CAA) - RCF 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 29 CFR 1910.1200 and 29 CFR 1926.59 and the Respiratory protection standards 29 CFR 1910.134 and 29 CFR 1926.103
California: Ceramic fibers (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.

Other States:

RCF 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. If in doubt, contact your local regulatory agency.

INTETNATIONAL REGULATIONS

Canada:

Canadian workplace hazardous materials information system (WHMIS)-RCF 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).

European Union:

European Directive 97/69/EC classified RCF as a category 2 carcinogen; that is it "should be regarded as if it is carcinogenic to man"

16. Other Information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

DISCLAIMER OF LIABILITY

The information in this SDS was obtained from sources which we believe are reliable, however, the information is provided, without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS

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