

SAFETY DATA SHEET

SDS FC Rigidizers

Effective Date January 10th, 2019

1. IDENTIFICATION

(a) **Product Identifier used on label:** FC 40 Rigidizer; FC 50 Rigidizer; FC 100 Rigidizer; all these products may have blue dye or other food grade dyes added for easier coverage and identification.

(b) **Other means of identification:** Inorganic liquid hardener.

(c) **Recommended use of the chemical:** Used to increase the durability and surface erosion resistance of fibre products such as blanket, modules, board. Also used as an erosion-resistant coating for surfaces subject to high velocity hot gasses. Product has a maximum temperature rating of 1260 Deg C. Must be freeze protected at temperatures < 0 deg C.

(d) **Manufacturer/Supplier Name:** FibreCast Inc., 3264 Mainway, Burlington, Ontario, Canada, L7M 1A7
Phone 905-319-1080; Fax 905-319-7611; email: sales@fibrecast.com

(e) **Emergency Phone #:** CHEMTREC will provide assistance for chemical emergencies. Call 1-800-424-9300

2. HAZARDS IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE/MIXTURE

Not classifiable per US OSHA HCS 2012, Canada WHMIS 2015, EU CLP and GHS.

LABELING ELEMENTS

Not applicable per US OSHA HCS 2012, Canada WHMIS 2015, EU CLP and GHS.

CAUTION! May be harmful if swallowed, may cause skin, eye, and respiratory tract irritation.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS #	% BY WEIGHT	Ingredient	CAS	Percentage
			Water	7732-18-5	60 to 80
			Silica (amorphous)	7631-86-9	20 to 40
			Food grade dye	various	< 0.1 [optional component]

4. FIRST AID MEASURES

Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion

SKIN

Handling of this material may generate temporary, mild mechanical skin irritation. If this occurs, rinse affected areas with water and wash gently. Do not rub or scratch exposed skin.

EYES

In case of eye contact flush abundantly with water; have eye bath available. Do not rub eyes.

NOSE AND THROAT

If nose and throat become irritated, move to a dust free area, drink water and blow nose. If symptoms persist, seek medical advice.

Most important symptoms/effects, acute and delayed

Mild mechanical irritation to skin, eyes and upper respiratory system may result from exposure. These effects are usually temporary.

NOTES TO PHYSICIANS

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

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media

Use extinguishing agent suitable for surrounding combustible materials. Product itself is not combustible.

Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

Product is non-combustible products, class of reaction to fire is zero. Packaging and surrounding materials may be combustible.

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:

Minimize airborne dust. Compressed air or dry sweeping should not be used for cleaning.

Methods and materials for containment and cleaning up:

Do not walk through spilled material. Shovel into a container for later disposal. Avoid cleanup procedures that may result in water pollution. For dried product, frequently clean the work area with vacuum or wet sweeping to minimize the accumulation of debris. Do not use compressed air for clean-up.

EMPTY CONTAINERS

Product packaging may contain residue. Do not reuse.

7. HANDLING AND STORAGE

Precautions for safe handling

Normal conditions of use and application will not release any respirable particulates. 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.

Minimize airborne dusts by avoiding the unnecessary disturbance of materials. Limit use of power tools unless vacuum in use. Use hand tools whenever possible.

Removal and clean up of after service product which has been subjected to high temperatures, may result in exposure to a crystalline phase silica (See Section 16 for more details). Depending on the product's use, other associated 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.

Warning: Product is water based hence product must be freeze protected at sub zero C temperatures

Clean Up: Dust suppressing cleaning methods such as wet sweeping or vacuuming should be used to clean the work area. Compressed air or dry sweeping should not be used for cleaning. Dust suppressing compounds may be used to clean up thereby reducing any airborne dust.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION, EXPOSURE GUIDELINES

Regulated Occupational Exposure Limits in USA and Canada

Components:	OSHA	ACGIH / MOL Ontario	MANUFACTURER
Water	None Established	None Established	None Established
Silica (amorphous)	20 mmpcf or 30 mg/m ³ / %SiO ₂	10 mg/m ³ inhalable particulate 3 mg/m ³ respirable particulate.	None Established

ENGINEERING CONTROLS

For after-use situations, use dust suppressing control technologies such as local exhaust ventilation, point of generation dust collection and materials handling equipment that are effective in minimizing airborne particulate emissions.

PERSONAL PROTECTION EQUIPMENT

EYE PROTECTION: Wear safety glasses with side shields 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 available where eye contact can occur.

SKIN PROTECTION: Wear personal protective equipment (e.g. gloves), 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, employees should be informed on best practices to minimize non-work dust exposure such as vacuuming clothes before leaving the work area. Wash work clothing separately, and rinse washer before washing other household clothes.

RESPIRATORY PROTECTION: When engineering and/or administrative controls are insufficient to maintain workplace airborne concentrations below a regulatory occupational exposure limits that apply to your workplace, the use of appropriate respiratory protection. Where workplace airborne levels are unknown, 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

- (a) Appearance (physical state, color, etc.); clear or blue liquid – other food colouring dyes may change the colour of liquid.
- (b) Odour; Odourless
- (c) Odour threshold; None
- (d) pH; 10.1-10.5 [neutral is 7], pH of household detergents or milk of magnesia
- (e) Melting point; Not Applicable.
- (f) Initial boiling point and boiling range; 100° C (212° F)
- (g) Flash point; Not applicable
- (h) Evaporation rate; Not applicable
- (i) Flammability (solid, gas); Not applicable
- (j) Upper/lower flammability or explosive limits; Not applicable
- (k) Vapor pressure; 17.5 @ 20° C
- (l) Vapor density; 1.0
- (m) Relative density; 1.3
- (n) Solubility; Not applicable
- (o) Partition coefficient: n-octanol/water; Not applicable

- (p) Auto-ignition temperature; Not applicable
- (q) Decomposition temperature; Not applicable
- (r) Viscosity. Not applicable

10. STABILITY AND REACTIVITY

- (a) **Reactivity:** Non-reactive.
- (b) **Chemical stability:** As supplied, product is stable and inert.
- (c) **Possibility of hazardous reactions:** None
- (d) **Conditions to avoid:** Please refer to handling and storage advice in Section 7
- (e) **Incompatible materials:** None
- (f) **Hazardous decomposition products:** None

11. TOXICOLOGICAL INFORMATION

EPIDEMIOLOGY: IARC noted that "very little epidemiological evidence was available" for amorphous silica. In evaluating the results of three community-based case-control studies, IARC concluded that "no association was detected for mesothelioma with biogenic amorphous silica fibres." (IARC Monograph 68, June 1997, p. 208).

TOXICOLOGY: A food-grade micronized synthetic amorphous silica was tested by oral administration to mice and rats. No increased incidence of tumors was seen. In another study in rats, using intrapleural implantation of two different preparations of synthetic amorphous silica, no increased incidence of tumors was observed (IARC Monograph 68, June 1997, page 209). The International Agency for Research on Cancer (IARC), has concluded that amorphous silica is "not classifiable as to its carcinogenicity to humans (Group 3)" based on "inadequate evidence in humans for the carcinogenicity of amorphous silica" and "inadequate evidence in experimental animals for the carcinogenicity of synthetic amorphous silica" (IARC Monograph 68, June 1997, p. 210-211).

Amorphous silica is not listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) and has not been found to be a potential carcinogen in the USA by OSHA.

12. ECOLOGICAL INFORMATION

- (a) **Ecotoxicity (aquatic and terrestrial, where available):** No known aquatic toxicity.
- (b) **Persistence and degradability:** These products are insoluble materials that remain stable over time and are chemically identical to inorganic compounds found in the soil and sediment; they remain inert in the natural environment.
- (c) **Bioaccumulative potential:** No bioaccumulative potential.
- (d) **Mobility in soil:** No mobility in soil.
- (e) **Other adverse effects (such as hazardous to the ozone layer):** No adverse effects of this material on the environment are anticipated.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: This product is not classified as a hazardous waste according to most regulations. 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's 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

- (a) **UN number:** Not Applicable
 - (b) **UN proper shipping name:** Not Applicable
 - (c) **Transport hazard class:** Not Applicable
 - (d) **Packing group, if applicable:** Not Applicable
 - (e) **Environmental hazards (e.g., Marine pollutant):** Not a marine pollutant
 - (f) **Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Not Applicable
 - (g) **Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises:** Not Applicable
- Canadian TDG Hazard Class & PIN: Not regulated
Not classified as dangerous goods under ADR (road), RID (train) or IMDG (ship).

15. REGULATORY INFORMATION

CANADIAN REGULATIONS

Canadian Workplace Hazardous Materials Information System (WHMIS 2015): This product is not classified under WHMIS 2015.

Canadian Environmental Protection Act (CEPA): All substances in this product are listed, as required, on the Domestic Substances List (DSL).

16. OTHER INFORMATION

16.1 After-Service: Removal: The amorphous silica contained in this product may devitrify and form cristobalite (a form of crystalline silica) when used at temperatures above 1000°C for sustained periods. 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 a carcinogenic to humans (Group 1)." [IARC Monograph 68, June 1997, p. 210-211]. 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.

16.2 Definitions:

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service

EPA: Environmental Protection Agency

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: SDS/List of Chemicals and Hazardous Inventory

Section 312: Emergency and Hazardous Inventory

Section 313: Toxic Chemicals and Release Reporting

TLV: Threshold Limit Value (ACGIH)

TSCA: Toxic Substances Control Act

16.3 Summary: SDS updated to GHS format. SDS prepared by G.E. Menzies P.Eng., ROH January 10th, 2019 to include the range of products covered by this SDS.

16.4 DISCLAIMER

The information presented herein is presented in good faith and believed to be accurate as of the effective date of this Safety Data Sheet. Employers may use this SDS 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 SDS. Therefore, given the summary nature of this document, FibreCast Inc., 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.