



FC 3000 PCW

Effective Date: April 2nd, 2020

1. IDENTIFICATION**A. Product Identifier used on label: FC 3000 PCW****B. Other means of identification:** High Temperature Polycrystalline Wool Fibre as Boards and Shapes;
High Temperature Insulating Fibrous Vacuum-Formed Boards and Shapes; Blend of Polycrystalline Wool Fibres and Binders;
Polycrystalline Wool Shapes Man-Made Fibre Shapes and Boards; Synthetic Vitreous Fibre;
Man- Made Vitreous Fibre.**C. Recommended use of the product:** Used for high temperature thermal insulation for applications up to 1600 deg C or 2912 deg F** with low heat storage; has low shot content; rated as non-carcinogen (EC Directive 67/548/EEC), requires no special product labelling; is total thermal shock resistant. Typical uses: to improve service life for furnace roofs and linings, ladle and tundish covers, batten strips, burner walls, preheat covers, trough covers, soaking pit covers, expansion joints, heat shields, heat containment, gaskets and expansion joints; for use in industrial furnaces, ovens, kilns, and other process equipment. PCW based products are not intended for direct sale to the general public. While PCWs are used in the manufacture of some consumer products, the materials are contained, encapsulated, or bonded within the units.****refer to the technical data sheet for specific operating temperature limit and shrinkage data.****D. Uses Advised Against:** Dismantling product for reuse on other applications.**E. Manufacturer's Name:** FibreCast Incorporated, 3264 Mainway, Burlington, Ontario, Canada, L7M 1A7
Phone 905-319-1080; Fax 905-319-7611; email: sales@fibrecast.com**F. Emergency Phone #:** CHEMTREC will provide assistance for chemical emergencies at 1-800-424-9300**2. HAZARDS IDENTIFICATION****A. Classification of the chemical:** Classification of the product is based in Canada on the 5th revised edition of the Globally Harmonized System of Classification and Labelling of Chemicals from the United Nations Economic Commission. **Polycrystalline wools are not classified.** The assessment of all available toxicological data during the classification process resulted in a "no classification" conclusion.**B. Signal word:** Signal word hazard statement(s), symbol(s) and precautionary statement(s) in accordance with the 5th revised edition of the Globally Harmonized System of Classification and Labelling of Chemicals.
Not applicable.**C. Describe any hazards not otherwise classified during classification process:** Mild mechanical irritation to skin, eyes and upper respiratory system may result from exposure. These effects are usually temporary.
Minimize exposure to airborne dust.**D. Mixture rule not applicable****3. COMPOSITION / INFORMATION ON INGREDIENTS**

COMPONENTS	CAS NUMBER	% BY WEIGHT
Polycrystalline Wool Fibre	675106-31-7	45 to 70
Colloidal silica	7631-86-8	15 to 40
Colloidal silica	56780-58-6	7 to 13

Impurities and Stabilizing Additives: Not applicable



4. FIRST AID MEASURES

A. 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 mild mechanical temporary 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 these become irritated move to a dust free area, drink water and blow nose. If symptoms persist, seek medical advice.

B. 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.

C. Indication of immediate medical attention and special treatment needed, if necessary:

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

5. FIRE FIGHTING MEASURES

A. Suitable (and unsuitable) extinguishing media:

Use extinguishing agent suitable for surrounding combustible materials.

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

Product is considered a non-combustible product, class of reaction to fire is zero. However, the packaging and surrounding materials may be combustible. Also, there is a thermal decomposition of the binder from the initial heat of product at approximately 4500 F or 2320

C. This may release a small amount of organic binder as a vapour. Once this material has burned off, there is no further off-gassing. Use adequate ventilation or other precautions to eliminate exposure to the vapors resulting from this thermal decomposition of the binder. Exposure to thermal decomposition fumes may cause respiratory tract irritation, bronchial hyper-reactivity or an asthmatic-type response.

C. Special protective equipment & precautions for fire-fighters:

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

D. Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products): None

6. ACCIDENTAL RELEASE MEASURES

A. Personal precautions, PPE, and Emergency Procedures: Avoid causing dust. Use appropriate personal protective equipment as necessary. Damp down dust with water spray.

B. Methods and materials for containment and Cleaning Up: Dispose of contaminated material as waste according to Section 13. Ensure adequate ventilation. Contain the source of the spill if it is safe to do so. Spills should be handled by vacuuming or wet mopping. Avoid brush sweeping and generation of airborne dust. Dispose of waste in suitable containers. **EMPTY CONTAINERS:** Product packaging may contain residue. Do not reuse.

7. HANDLING AND STORAGE

A. Precautions for safe handling: Prevent generation of dust. Do not dry clean dust covered objects and floors. Wash thoroughly with plenty of water. Use appropriate industrial vacuums for dust removal.

Conditions for safe storage: Store under normal warehouse conditions. Store away from food.

B. Empty Containers: Empty containers should be cleaned before disposal or recycling.



8. EXPOSURE CONTROLS / PERSONAL PROTECTION

A. Ontario Occupational exposure limits [OEL] are listed in ON Reg 833 “Control of Exposure to Biological or Chemical Agents” and are generally based on the permissible exposure limit (PEL) of the American Conference of Governmental Industrial Hygienists (ACGIH).

COMPONENTS	CAS NUMBER	Recommended OEL Ontario
Polycrystalline Wool Fibre	675106-31-7	1.0 fibres/cc or 3 mg/m ³ as a respirable particulate
Amorphous silica	7631-86-9	no regulated limit; guideline 6 mg/m ³
Starch	56780-58-6	no regulated limit; guideline 5 mg/m ³ respirable dust

As with most industrial materials, it is prudent to minimize unnecessary exposure to respirable dusts. Note that Industrial hygiene standards and occupational exposure limits differ between countries and local jurisdictions. Check with your employer to identify any "respirable dust", "total dust" or "fibre" exposure standards to follow in your province or state. If no regulatory dust or fiber control standard apply, a qualified industrial hygiene professional can assist with a specific evaluation of workplace conditions and with the identification of appropriate respiratory protection equipment.

B. Ontario Occupational exposure limits [OEL] are listed in ON Reg 833 “Control of Exposure to Biological or Chemical Agents” and are generally based on the permissible exposure limit (PEL) of the American Conference of Governmental Industrial Hygienists (ACGIH).

C. Individual protection measures, such as personal protective 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. 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).

Eye Protection: As necessary, wear goggles or safety glasses with side shields.

Respiratory Protection: When engineering and/or administrative controls are insufficient to maintain workplace concentrations below the applicable level, the use of appropriate respiratory protection, pursuant to the requirements of ON MOL Reg 833 and USA OSHA Standards is recommended. A NIOSH certified respirator with a filter efficiency of at least 95% should be used. The 95% filter efficiency recommendation is based on NIOSH respirator selection logic sequence for exposure to particulates. 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.

Other Information: Concentrations are based upon an eight-hour time weighted average exposure (TWA_{EV}) 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-face piece air purifying respirator equipped with an appropriate particulate filter cartridge during furnace tear-out events and the removal of used PCW, to control exposures to airborne fiber.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

APPEARANCE White board or form	PARTITION COEFFICIENT Not applicable
BOILING POINT Not applicable	OXIDISING PROPERTIES Not applicable
ODOUR Slight	EXPLOSIVE PROPERTIES Not applicable
FLASH POINT Not applicable	BULK DENSITY 9 to 12 #/ft ³
MELTING POINT 1850° C/ 33620 F	VAPOUR PRESSURE Not applicable
AUTOFLAMMABILITY Not applicable	SOLUBILITY Less than 1 mg/l
FLAMMABILITY Not applicable	pH Not applicable



LENGTH WEIGHTED GEOMETRIC MEAN DIAMETER OF FIBRES CONTAINED IN THE PRODUCT: 5 mm

9.2 Other safety Information: These fibres are far denser than air or water and will settle rapidly under normal environmental conditions.

10. STABILITY AND REACTIVITY

A. Reactivity	PCW is stable and non-reactive.
B. Chemical stability	PCW is inorganic, 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	During first heating, oxidation products from the organic binder might be emitted in a temperature range from 180 deg C to 600 deg C. Ventilate the area until all the gases and fumes have dissipated. Avoid exposure to high concentrations of gas or fumes.

11. TOXICOLOGICAL INFORMATION

Toxicological Data/Epidemiology Data: Lifetime rat inhalation studies of polycrystalline fiber show that at the maximum dose level tested, there was no evidence of lung cancer, lung fibrosis or any other significant adverse effect. Intraperitoneal, intratracheal and intrapleural studies in rats, together with two in vitro tests, have all shown negative results. Despite some study limitations, it is important to note the consistent lack of carcinogenic response in animal studies. As produced most polycrystalline fibers have fiber diameters too large to be respirable. Numerous scientific studies suggest that the potential toxicity of a respirable fiber is directly related to bio-persistence (the length of time it takes for the fiber to clear the lung). Based on limited in-vitro laboratory analysis, which measure the dissolution rate of fibers in simulated lung fluid, polycrystalline fibers are known to be relatively durable. Data from respiratory surveillance studies are not available for PCW workers at this time. In a small cohort of workers exposed to PCW with historical co-exposures to RCF and other fibers, there was no evidence of interstitial lung disease in chest x-rays nor an accelerated rate of loss of lung function on pulmonary function testing. Symptom responses could not be attributed to or excluded from exposure to PCW as a consequence of the prior fiber exposures.

12. STABILITY AND REACTIVITY

A. Ecotoxicity	Unlikely to be hazardous to aquatic life.
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

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, as manufactured, is not classified as a hazardous waste according to Federal regulations. 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.



14. TRANSPORT INFORMATION (Non-mandatory)

A. UN number	Not Applicable
B. UN proper shipping name	Not Regulated.
C. Transport hazard class	Not Applicable
D. Packing group, if applicable	Not Applicable
E. Environmental hazards (e.g., Marine pollutant -Yes/No)	Not a marine pollutant
F. Incompatible materials	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

15. REGULATORY INFORMATION

- A. CANADIAN REGULATIONS** Canada Canadian Workplace Hazardous Materials Information System – Not a controlled product, no special labelling. Canadian Environmental Protection Act (CEPA) - All substances in this product are listed, as required, on the Domestic Substance List (DSL)
- B. UNITED STATES REGULATIONS** 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.

16. OTHER INFORMATION

16.1 Hazardous Materials Identification System (HMIS) Hazard Rating for rating RCF products [is now opposite of GHS rating system]. The old ratings are: HMIS Health 1; HMIS Flammability 0; HMIS Reactivity 0; HMIS Personal Protective Equipment X (To be determined by user) levels.

16.2 Definitions

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	Carriage of Dangerous Goods by Road (International Regulation)
AES	Alkaline Earth Silicate Wools
ASW	Alumino-Silicate Wools
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
HTIW	North American high temperature insulation wool industry
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods Code
mg/m ³	Milligrams per cubic meter of air



16.2 Definitions Continued...

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 1910.1200 & 1926.59	OSHA Respiratory Protection Standards
29 CFR 1910.1200 & 1926.59:	OSHA Hazard Communication Standards
PCW	Polycrystalline Wools
PEL	Permissible Exposure Limit (OSHA)
PIN	Product Identification Number
PNOC	Particulates Not Otherwise Classified
PNOR	Particulates Not Otherwise Regulated
PSP	Product Stewardship Program
RCFA	Refractory Ceramic Fiber Association
RCRA	Resource Conservation and Recovery Act
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
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)

16.3 Revision Summary: Updated SDS to align with the new WHMIS 2015 Regulation introduced, Feb 11th, 2015, SDS Revision Date: April 2nd, 2020; SDS Prepared By: G.E. Menzies P. Eng. ROH 16.2

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.