SDS No. MW0009
Date of Issue: May 2020 **Date of Last Revision: July/15/2020**

1. IDENTIFICATION

(a) Product identifier used on the label

MaxBulk 3000, MaxWool 3000, MaxBlok 3000.

(b) Other means of identification

Polycrystalline wool (PCW), man-made alumina fiber, high temperature insulation wool (HTIW).

(c) Recommended use of the chemical and restrictions on use

- **Primary Use:** Polycrystalline wool (PCW) materials are used primarily in industrial high temperature insulating applications. Examples include heat shields, heat containment, gaskets, expansion joints, industrial furnaces, ovens, kilns, boilers and other process equipment at applications up to 1600°C. Polycrystalline wool (PCW) based products are not intended for direct sale to the general public. While PCW are used in the manufacture of some consumer products, such as catalytic converter mats and wood burning stoves, the materials are contained, encapsulated, or bonded within the units.
- **Secondary Use:** Conversion into wet and dry mixtures and articles (refer to section 8).
- **Tertiary Use:** Installation, removal (industrial and professional) / Maintenance and service life (industrial and professional) (refer to section 8).

Uses Advised Against
Spraying of dry product.

(d) Name, address, and telephone number

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(e) Emergency phone number

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2. HAZARDS IDENTIFICATION

(a) Classification of the chemical

In 1988 the International Agency for Research on Cancer (IARC) classified "ceramic fibers" as possible human carcinogens (Group 2B), and at that time, polycrystalline wool was included in this broad category of materials. See section 11 for more information.

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)

Under OSHA HCS 2012 and WHMIS 2015, PCW 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.

(c) Describe any hazards not otherwise classified that have been identified during the classification process

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

(d) Mixture rule

Not applicable.

3. COMPOSITION / INFORMATION ON INGREDIENTS

a) Composition table

COMPONENTS	CAS Number	% BY WEIGHT
Polycrystalline Wool (PCW, alumina fiber)	675106-31-7*	100

*PCW can also be identified by a combination of CAS Numbers: 1344-28-1 (fibrous forms of Aluminium Oxide), 7631-86-9 (Silica, non-crystalline), or 1302-93-8 (Mullite).

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

b) 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 cause 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 wash 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

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

a) Hazardous Decomposition Products

Thermal decomposition of binder from fires or from first heat of product may release smoke, carbon monoxide, carbon dioxide and small amounts of aromatic and aliphatic hydrocarbons. Use adequate ventilation or other precautions to eliminate exposure to vapors resulting from thermal decomposition of binder. Exposure to thermal decomposition fumes may cause respiratory tract irritation, bronchial hyper-reactivity or an asthmatic-type response.

b) Unusual Fire and Explosion Hazard

None

c) Extinguishing Media

Use extinguishing media suitable for type of surrounding fire.

6. ACCIDENTAL RELEASE MEASURES

a) Personal precautions, protective equipment, and emergency procedures

Where abnormally high dust concentrations occur, provide workers with appropriate protective equipment as detailed in section 8.
Restrict access to the area to a minimum number of workers required.
Restore the situation to normal as quickly as possible.

b) Environmental precautions

Prevent further dust dispersion for example by dampening the materials.
Do not flush spillage to drain.
Check for local regulations, which may apply.

c) Methods and materials for containment and cleanup

Pick up large pieces and use a vacuum cleaner fitted with a high efficiency filter (HEPA),
If brushing is used, ensure that the area is wetted down first.
Do not use compressed air for clean up.
Do not allow to be wind blown.

7. HANDLING AND STORAGE

a) Precautions for safe handling

Handle fiber carefully to minimize airborne dust. Limit use of power tools unless in conjunction with local exhaust ventilation. Use hand tools whenever possible.

b) Conditions for safe storage, including any incompatibilities

Store in original packaging in dry area whilst awaiting use.
Always use sealed and visibly labelled containers.
Avoid damaging containers.
Reduce dust emission during unpacking.
Emptied containers, which may contain debris, should be cleaned (see 6.3) before disposal or recycling.

Recyclable cardboard and/or plastic films are recommended for packaging.

c) Specific end use.

The main application of these products is as thermal insulation. Use of the products is restricted to “professional users”. Please refer to section 8 and the relevant exposure scenario.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

a) OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available

COMPONENT	OSHA PEL	ACGIH TLV	MANUFACTURER REG
Aluminosilicate fiber (polycrystalline)	None Established*	None Established	See Below**

* There is no specific regulatory standard for polycrystalline fiber in the U.S. OSHA’s “Particulate Not Otherwise Regulated (PNOR)” standard [29 CFR 1910.1000, Subpart Z, Air Contaminants] applies generally; Total Dust 15 mg/m³; Respirable Fraction 5 mg/m³.
** 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 "fiber" exposure standards to follow in your area. If no regulatory dust or fiber control standard apply, a qualified industrial hygiene professional can assist with a specific evaluation of workplace conditions and the identification of appropriate respiratory protection practices. In the absence of other guidance, the supplier has found that it is generally feasible to control occupational fiber exposure to 0.5 f/cc or less.

b) Appropriate 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.

c) Other occupational exposure levels (OEL),

ACGIH TLV's: Polycrystalline fiber -- Particulates Not Otherwise Classified (PNOC): Inhalable particulate -- 10 mg/m³. Respirable particulate -- 3 mg/m³. 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.

Non-regulatory OEL examples include: ACGIH TLVs (TWAs): Acrylic latex -- None established. Aluminum sulfate -- None established. Silica (amorphous) -- 10 mg/m³.

d) Engineering control.

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

e) Individual protection measures, such as personal protective equipment

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 (e.g., vacuum clothes before leaving the work area, wash work clothing separately, and rinse washer before washing other household clothes.

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.

Respiratory Protection

When engineering and/or administrative controls are insufficient to maintain workplace concentrations within the 0.5 f/cc REG, the use of appropriate respiratory protection, pursuant to the requirements of OSHA Standards 29 CFR 1910.134 and 29 CFR 1926.103, is recommended. The following information is provided as an example of appropriate respiratory protection for polycrystalline fibers. 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

Appearance	White solid	**PARTITION COEFFICIENT**	Not applicable
Boiling point	Not applicable	**ODOUR**	None
Flash point	Not applicable	**MELTING POINT**	No data
AUTOFLAMMABILITY	Not applicable	**FLAMMABILITY**	Not applicable
OXIDISING PROPERTIES	Not applicable	**EXPLOSIVE PROPERTIES**	Not applicable
SPECIFICGRAVITY	Not applicable	**VAPOUR PRESSURE**	Not applicable
SOLUBILITY	Less than 1 mg/l	**pH**	Not applicable

Other safety Information
These fibres are dense materials and so will settle rapidly from both air and liquid.

10. STABILITY AND REACTIVITY

(a) Reactivity

PCW is non-reactive.

(b) Chemical stability

As supplied PCW is stable and inert.

(c) Possibility of hazardous reactions

Not applicable.

(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

Employees engaged in manufacturing polycrystalline fiber are subject to an on-going medical surveillance program. This study has indicated no increased incidence of respiratory disease or other adverse health effects attributable to occupational fiber exposure.

In 1988, the International Agency for Research on Cancer (IARC) considered the carcinogenicity of several groups of fibers. One grouping they defined consigned a range of disparate fiber types ((polycrystalline fiber, refractory ceramic fiber (referred to as RCF) and single crystal whiskers)) into a broad, single category they termed “ceramic fibers”. The IARC monograph clearly indicated that test data specific to polycrystalline fibers were negative, but according to the IARC classification principles, positive results with other fiber types led to the conclusion that all fibers in the group should be considered as possible human carcinogens (IARC Category 2B). In a subsequent monograph on MMVF (2002), IARC did not specifically re-evaluate polycrystalline fiber.

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 adverse effect, apart from a minimal pulmonary response typical of that of a “low toxicity dust”. Intraperitoneal, intratracheal and intrapleural studies in rats, together with two in vitro tests, have all shown negative results.

12. ECOLOGICAL INFORMATION (Non-mandatory)

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 (Non-mandatory)

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 (40 CFR 261). 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.

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

b) UN proper shipping name.

Not applicable.

c) Transport hazard class(es).

Not applicable.

d) Packing group, if applicable.

Not applicable.

e) Environmental Hazard (e.g., Marine pollutant (Yes/No)).

No.

f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code).

Not regulated.

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.

International

INTERNATIONAL

Canadian TDG Hazard Class & PIN: Not regulated

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

15. REGULATORY INFORMATION (Non-mandatory)

UNITED STATES REGULATIONS

EPA	**Superfund Amendments and Reauthorization Act (SARA) Title III** - This product contains aluminum oxide (fibrous forms) which is reportable under Section 313 (40 CFR 372). Sections 311 and 312 (40 CFR 370) apply (delayed hazard). **Toxic Substances Control Act (TSCA)** - PCW has been assigned a CAS number; however; it is an "article" under TSCA and therefore exempt from listing on the TSCA inventory. **Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)** and the **Clean Air Act (CAA)** - This product 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	PCW 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.

INTERNATIONAL REGULATIONS

Canada **Canadian Workplace Hazardous Materials Information System (WHMIS)** – Classified as Class D2A – Materials Causing Other Toxic Effects.

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

Europe The assessment of all available toxicological test data on polycrystalline fibrers during the REACH registration process resulted in a "no classification" conclusion.

16. OTHER INFORMATION

Additional Information on After Service Material

Nutec Fibratec is a member of the HTIWC (High Temperature Insulation Wool Coalition). In 2002, OSHA endorsed a five-year voluntary product stewardship program called PSP 2002. On May 23, 2007, HTIW Coalition's predecessor, RCFC, and its member companies renewed this voluntary product stewardship agreement with OSHA. On April 16, 2012, HTIW Coalition renewed this agreement for a second time.
This new five-year program, called PSP 2012, continues and builds upon the earlier programs. PSP 2012 is a highly acclaimed, multifaceted strategic risk management initiative designed specifically to reduce workplace exposures to Refractory Ceramic Fiber (RCF). For more information regarding PSP 2012, please visit **http://www.htiwcoalition.org**

Revision Summary: **The company name was updated, formerly Nutec USA, now Nutec Inc., the document code changed from MW0008 to MW0009**

Revision Date: **July/15/2020**

SDS Prepared By: Nutec Inc.

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 NUTEC 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..