

SAFETY DATA SHEET

Following Regulation 1910.1200

SDS Number: 151-1 Date of first issue: 28 March 1995 Date of last revision: 08 June 2021

1 - Identification of product

a - Product identifier used on the label

Tradenames: IFB 23 Tile, Insalcor, Isolmos 450, Isolmos 550, JM-20, JM-23, JM-23US, JM-26, JM-28, JM-30, JM-32, K-20, K-23, K-24, K-25, K-26, K-28, K-30, SR-90, TC-23, TC-26, TJM-26, TJM-28,

b - Other means of identification

INSULATING REFRACTORY BRICK

c - Recommended use of the chemical and restrictions on use

High Temperature Thermal Insulation

d - Name, address, and telephone number

Morgan Advanced Materials
P. O. Box 923; Dept. 300
Augusta, GA 30903-0923
Telephone: 706-796-4200

e - Emergency Phone Number

For Product Stewardship and Emergency Information:
Hotline - 1-800-722-5681
Fax - 706-560-4054

For additional SDSs and to confirm this is the most current SDS for the product, visit our web page www.morganthermalceramics.com or send a request to MT.NorthAmerica@morganplc.com

2 - Hazard 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 1 corresponds to OSHA HCS 2012 Category 1A 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, crystalline silica (inhaled in the form of quartz or cristobalite from occupational sources) is classified as a GHS category 1A - Known human carcinogen.

Hazard Pictograms



Signal Words

Danger

Hazard Statements

May cause 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.

Emergency Overview

Respirable dust from these products may contain crystalline silica, which is known to cause respiratory disease.
(See Section 11 for more information)

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

d - Mixture Rule

Not applicable.

3 - Composition / Information On Ingredients

a - Composition table

<u>COMPONENTS</u>	<u>CAS NUMBER</u>	<u>% BY WEIGHT</u>
Ceramic Matrices (consist of glass, mullite and anorthite)	NONE	95 - 99
Crystalline Silica	14808-60-7 or 14464-46-1	Up to 5

b - Common Name

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

d - 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

Eyes

Flush with large amounts of water for at least 15 minutes. Do not rub eyes.

Skin

Wash affected area gently with soap and water. Skin cream or lotion after washing may be helpful.

Respiratory Tract

Remove affected person to dust free location. See Section 8 for additional measures to reduce or eliminate exposure.

Gastrointestinal

Unlikely route of exposure.

c - Indication of immediate medical attention and special treatment needed, if necessary

5 - Fire-fighting measures

a - Suitable (and unsuitable) extinguishing media and

Use extinguishing media suitable for type of surrounding fire

c - Special Protective Equipment and Precautions for Firefighters

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

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

None

6 - Accidental Release Measures

a - Personal precautions, protective equipment, and emergency procedures

Avoid creating airborne dust. Follow routine housekeeping procedures. Vacuum only with HEPA filtered equipment. If sweeping is necessary, use a dust suppressant and place material in closed containers. Do not use compressed air for clean-up. Personnel should wear gloves, goggles and approved respirator.

b - Methods and materials for containment and cleaning up

Pick up large pieces and dispose in a closed container. Follow precaution stated in above section for clean up.

7 - Handling and storage

a - Precautions for safe handling

Limit the 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 clean-up.

b - Conditions for safe storage, including any incompatibilities

Store in a manner to minimize airborne dust.

c - empty containers

Product packaging may contain residue. Do not reuse.

8 - Risk Management Measures / Exposures 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

EXPOSURE GUIDELINES			
MAJOR COMPONENT	OSHA PEL	ACGIH TLV	MANUFACTURER'S REG
Crystalline Silica	0.05 mg/m ³ (1)	0.025 mg/m ³ (respirable dust)	NONE
(1) OSHA new Permissible Exposure Limit (PEL) for respirable crystalline silica is 0.05 mg/m ³ (8-hr TWA), an Action Level (AL) of 0.025 mg/m ³ (8-hr TWA), together with associated ancillary requirements listed under General Industry and Maritime Standard (29 CFR 1910.1053) and Construction Standards (29 CFR 1910.1153).			
<u>OTHER OCCUPATIONAL EXPOSURE LEVELS (OEL)</u> Ontario Canada OEL - Silica, Crystalline: Quartz/Tripoli = 0.1 mg/m ³ (R); Cristobalite = 0.05 mg/m ³ (R). Industrial hygiene standards and occupational exposure limits vary between countries and local jurisdictions. Check which exposure levels apply to your facility and comply with local regulations. If no regulatory dust or other standards apply, a qualified industrial hygienist can assist with a specific workplace evaluation including recommendations for respiratory protection.			

b - Appropriate Engineering Controls

Use engineering controls, such as ventilation and dust collection devices, to reduce airborne particulate concentrations to the lowest attainable level.

c - Individual protection measures, such as personal protective equipment

PPE - Skin

Wear full body clothing, gloves, hat, and eye protection as necessary to prevent skin irritation. Washable or disposable clothing may be used. If possible, do not take unwashed work clothing home. If soiled work clothing must be taken home, employers should ensure employees are trained on the best practices to minimize or avoid 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.).

PPE - Eye

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

PPE – Respiratory

When it is not possible or feasible to reduce airborne crystalline silica or particulate levels below the appropriate PEL/OEL through engineering controls, or until they are installed, employees are encouraged to use good work practices together with respiratory protection. Before providing respirators to employees (especially negative pressure type), employers should 1) monitor for airborne crystalline silica and/or dust concentrations using appropriate NIOSH analytical methods and select respiratory protection based upon the results of that monitoring, 2) have the workers evaluated by a physician to determine the workers' ability to wear respirators, and 3) implement respiratory protection training programs. Use NIOSH-certified particulate respirators (42 CFR 84), in compliance with OSHA Respiratory Protection Standard 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

a - Appearance	Solid Brick or Block
b - Odor	Not applicable
c - Odor Threshold	Not applicable
e- pH	Not applicable
d - Melting Point	2750°F to 3660°F (refer to specific product data sheets)
f- Initial Boiling Point/Range	Not applicable
g- Flashpoint	Not applicable
h - Evaporation Rate	Not applicable
i - Flammability	Not applicable
j - Upper/Lower Flammability or Explosive Limits	Not applicable
k - VAPOR PRESSURE	Not applicable
l - VAPOR DENSITY	Not applicable
m - Solubility	Not soluble in water
n - Relative Density	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

None.

b - Chemical Stability

This is a stable material.

c - Possibility of Hazardous Reaction

Will not occur.

d - Conditions to Avoid

None

e - Incompatible Materials

Powerful oxidizers; fluorine, manganese trioxide, oxygen disulfide

f - Hazardous decomposition products

None

11 - Toxicological information

a - TOXICOKINETICS, METABOLISM AND DISTRIBUTION

Dust samples from these products have not been tested. They may contain respirable crystalline silica.

b - Acute Toxicity

c - Epidemiology

No studies have been undertaken on humans exposed to these products in occupational environments.

Crystalline silica

Exposure to crystalline silica can cause silicosis, and exacerbate pulmonary tuberculosis and bronchitis. IARC (Monograph vol. 68, 1997) concluded that "crystalline silica from occupational sources inhaled in the form of quartz or cristobalite is carcinogenic to humans (Group 1)", and noted that "carcinogenicity in humans was not detected in all industrial circumstances studied" and "may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity".

d - Toxicology

Crystalline silica

Some samples of crystalline silica administered to rats by inhalation and intratracheal instillation have caused fibrosis and lung cancer. Mice and hamsters, similarly exposed, develop inflammatory disease including fibrosis but no lung cancer.

International Agency for Research on Cancer and National Toxicology Program

IARC, in 1997, Monograph v.68, classified crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to human (group 1).

The Ninth Annual Report on Carcinogens (2000), prepared by the National Toxicology Program (NTP), classified silica, crystalline (respirable size), as a substance known to be a human carcinogen.

12 - Ecological information

a - Ecotoxicity (aquatic and terrestrial, where available)

These products are not reported to have any ecotoxicity effects.

c - Bioaccumulative potential

No information for the product.

d - Mobility in soil

No information for the product.

e - Other adverse effects (such as hazardous to the ozone layer)

No information available for the product.

13 - Disposal Considerations

Waste Management and Disposal

To prevent waste materials from becoming airborne during waste storage, transportation and disposal, a covered container or plastic bagging is recommended.

Additional information

This product, as manufactured, is not classified as a listed or characteristic hazardous waste according to U. S. Federal regulations (40 CFR 261). Any processing, use, alteration or chemical additions to the product, as purchased, may alter the disposal requirements. Under U. S. 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

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 hazards (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

15.1 - United States Regulations

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: All substances contained in this product are listed in the TSCA Chemical Inventory

California: "Silica, crystalline (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: Crystalline silica 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. Contact your local agency if in doubt.

15.2 - International Regulations

INTERNATIONAL REGULATIONS

Canadian WHMIS: Class D-2A Materials Causing Other Toxic Effects

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

16 - Other Information

initial statement

Devitrification

Product Stewardship Program

HMIS HAZARD RATING

HMIS Health	1* (* denotes potential for chronic effects)
HMIS Flammable	0
HMIS Reactivity	0
HMIS Personal Protective Equipment	X (To be determined by user)

TECHNICAL DATA SHEETS

114-3, 114-2

Revision Summary

Revision date updated.

MSDS prepared by

SDS Prepared By: MORGAN THERMAL CERAMICS ENVIRONMENTAL, HEALTH & SAFETY DEPARTMENT

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, Morgan Thermal Ceramics 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.

1. Identification

Product identifier TAYCOR 320-TR MORTAR; TAYCOR 320-DC MORTAR

Other means of identification

Brand Code 8802, 929B

Recommended use For Industrial Use Only

Recommended restrictions Users should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name HarbisonWalker International

Address 1305 Cherrington Parkway, Suite 100
Moon Township, Pennsylvania 15108 US

Telephone General Phone: 412-375-6600

Website www.thinkHWI.com

Emergency phone number CHEMTREC 24 HOUR 1-800-424-9300
EMERGENCY #

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Carcinogenicity Category 1A
Specific target organ toxicity, repeated exposure Category 1

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement May cause cancer. Causes damage to organs through prolonged or repeated exposure.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection.

Response If exposed or concerned: Get medical advice/attention.

Storage Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information Users should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Overexposure to the respirable dust of crystalline silica (quartz or cristobalite, less than or equal to 5 microns in size) may lead to silicosis in humans, which is a progressive and irreversible lung disease. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Aluminium Oxide (Non-Fibrous)		1344-28-1	60 - 80
Kaolin		1332-58-7	2.5 - 10
Quartz (SiO ₂)		14808-60-7	2.5 - 10
Silicic Acid, Sodium Salt		1344-09-8	2.5 - 10
Mullite		1302-93-8	0.1 - 1
Titanium Dioxide		13463-67-7	0.1 - 1
Other components below reportable levels			10 - 20

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Dusts may irritate the respiratory tract, skin and eyes. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	Not available.
Specific hazards arising from the chemical	Not applicable.
Special protective equipment and precautions for firefighters	Not available.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect dust using a vacuum cleaner equipped with HEPA filter. Stop the flow of material, if this is without risk. Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water. Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Do not breathe dust. Avoid prolonged exposure. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.
--------------------------------------	---

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	PEL	5 mg/m3	Respirable fraction.
Kaolin (CAS 1332-58-7)	PEL	15 mg/m3	Total dust.
		5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
Quartz (SiO ₂) (CAS 14808-60-7)	PEL	0.05 mg/m3	
Titanium Dioxide (CAS 13463-67-7)	PEL	15 mg/m3	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		50 mppcf	Total dust.
Kaolin (CAS 1332-58-7)	TWA	15 mppcf	Respirable fraction.
		5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0.1 mg/m3	Respirable.
Titanium Dioxide (CAS 13463-67-7)	TWA	2.4 mppcf	Respirable.
		5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	1 mg/m3	Respirable fraction.
Kaolin (CAS 1332-58-7)	TWA	2 mg/m3	Respirable fraction.
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.
Titanium Dioxide (CAS 13463-67-7)	TWA	10 mg/m3	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Kaolin (CAS 1332-58-7)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Total
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0.05 mg/m3	Respirable dust.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical respirator with organic vapor cartridge, full facepiece, dust and mist filter.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Use of an impervious apron is recommended.

Respiratory protection Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.



General hygiene considerations

Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Solid.
Form Powder.
Color Not available.

Odor Not available.

Odor threshold Not available.

pH Not available.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure Not available.

Vapor density Not available.

Relative density Not available.

Solubility(ies)

Solubility (water) Not available.

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Not available.

Other information

Explosive properties Not explosive.

Oxidizing properties Not oxidizing.

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Contact with incompatible materials.

Incompatible materials Acids. Chlorine.
Incompatibility is based strictly upon potential theoretical reactions between chemicals and may not be specific to industrial application exposure.

Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation May cause damage to organs through prolonged or repeated exposure by inhalation. Dust may irritate respiratory system.

Skin contact Dust or powder may irritate the skin.

Eye contact Dust may irritate the eyes.

Ingestion Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Dusts may irritate the respiratory tract, skin and eyes.

Information on toxicological effects

Acute toxicity Not known.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. May cause cancer. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

IARC Monographs. Overall Evaluation of Carcinogenicity

Quartz (SiO ₂) (CAS 14808-60-7)	1 Carcinogenic to humans.
Titanium Dioxide (CAS 13463-67-7)	2B Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Quartz (SiO ₂) (CAS 14808-60-7)	Known To Be Human Carcinogen.
---	-------------------------------

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Developmental effects	
Quartz (SiO ₂)	0
Developmental effects - EU category	
Quartz (SiO ₂)	0
Embryotoxicity	
Quartz (SiO ₂)	0
Reproductivity	
Quartz (SiO ₂)	0
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Causes damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.
Hazardous waste code	Since this product is used in several industries, no Waste Code can be provided by the supplier. The Waste Code should be determined in arrangement with your waste disposal partner or the responsible authority.
Waste from residues / unused products	Not available.
Contaminated packaging	Not available.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All chemical substances in this product are listed on the TSCA chemical substance inventory where required.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.
CERCLA Hazardous Substance List (40 CFR 302.4)	Not listed.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - No
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Aluminium Oxide (Non-Fibrous)	1344-28-1	60 - 80

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Quartz (SiO ₂) (CAS 14808-60-7)	Listed: October 1, 1988
Titanium Dioxide (CAS 13463-67-7)	Listed: September 2, 2011

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Quartz (SiO ₂) (CAS 14808-60-7)
Titanium Dioxide (CAS 13463-67-7)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 03-23-2017
Version # 01

Disclaimer

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

Revision information

This document has undergone significant changes and should be reviewed in its entirety.

Mineral Wool Commercial and Industrial Insulation

Version 3.3

Revision Date 10/13/2021

Print Date 10/19/2021

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Trade name : MinWool-1200® Field-Formed Pipe Insulation, MinWool-1200® Flexible Batt, MinWool-1200® Industrial Board, MinWool-1200® Lamella Tank Wrap, MinWool-1200® Pipe and Tank Wrap, MinWool-1200® Pipe Insulation, MinWool-1200® Precision Cut Pipe Insulation, MinWool-1200® Preformed Pipe Insulation, MinWool® Curtainwall, MinWool® Deck Plug Fire Stop, MinWool® Marine Board, MinWool® Safing, MinWool® Sound Attenuation Fire Batts (SAFB), MinWool® Window Wall

Manufacturer or supplier's details

Company : Johns Manville
Address : P.O. Box 5108
Denver, CO USA 80127
Telephone : +1-303-978-2000
Emergency telephone number : 24-Hour Number: +1-800-424-9300 (CHEMTREC)

Company : Johns Manville Canada Inc.
Address : 5301 42 Avenue
Innisfail, AB Canada T4G 1A2
Telephone : +1-303-978-2000
Emergency telephone number : 24-Hour Number: +1-800-424-9300 (CHEMTREC)

Recommended use of the chemical and restrictions on use

Restrictions on use : For professional and industrial installation and use only.
Prepared by : productsafety@jm.com

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with 29 CFR 1910.1200 (OSHA HCS 2012) and the Hazardous Products Regulations (WHMIS 2015)**

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Chemical nature**

Mineral wool product

Hazardous components

Non-hazardous according to 29 CFR 1910.1200 (OSHA HCS 2012) and the Hazardous Products Regulations (WHMIS 2015), when used as intended.

Relevant ingredients

Mineral Wool Commercial and Industrial Insulation

Version 3.3

Revision Date 10/13/2021

Print Date 10/19/2021

Chemical name	CAS-No.	Concentration (%)
mineral fibers	Not Assigned	>= 95 - <= 100 %
cured urea-extended phenol-formaldehyde resin	Not Assigned	>= 0 - <= 5 %

SECTION 4. FIRST AID MEASURES

General advice	:	Get medical attention if symptoms occur.
If inhaled	:	Move to fresh air. If symptoms persist, call a physician.
In case of skin contact	:	If on skin, rinse well with water. Get medical attention if irritation develops and persists.
In case of eye contact	:	In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, consult a specialist.
If swallowed	:	If symptoms persist, call a physician. Rinse mouth with water to remove dust or fibers and drink plenty of water to help reduce irritation.
Most important symptoms and effects, both acute and delayed	:	Itching Temporary mechanical abrasion (itching) of skin, eyes and respiratory tract may occur upon exposure to fibers or dust during handling of this product and cannot occur unless there is direct contact. Trace amounts of formaldehyde may be released when in contact with moisture, including humidity. This release is most prevalent in conditions of high heat and humidity.
Protection of first-aiders	:	If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Notes to physician	:	Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Avoid dust formation.
Methods and materials for containment and cleaning up	:	Pick up and arrange disposal without creating dust.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Provide appropriate exhaust ventilation at places where dust is formed.
Advice on safe handling	:	For personal protection see section 8. Smoking, eating and drinking should be prohibited in the

Mineral Wool Commercial and Industrial Insulation

Version 3.3

Revision Date 10/13/2021

Print Date 10/19/2021

Conditions for safe storage : application area.
 : Keep in a dry, cool place.
 Materials to avoid : No materials to be especially mentioned.

 Further information on storage stability : Stable at normal ambient temperature and pressure.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Inert or Nuisance Dust, Particulates Not Otherwise Regulated (PNOR)	Not Assigned	PEL (Total dust)	15 mg/m ³	OSHA
		PEL (Respirable fraction)	5 mg/m ³	OSHA

As a member of the North American Insulation Manufacturers Association (NAIMA), JM subscribes to the NAIMA Product Stewardship Program (NPSP). Under the NPSP, JM recommends that exposures be limited to the voluntary concentration of 1 f/cc TWA. The NPSP also includes work practice and respiratory protection recommendations. For more information, see NAIMA's Health and Safety Reference Library (website: <http://insulationinstitute.org/tools-resources/resource-library/health-safety/>) to find the Product Stewardship Program Pocket Folder (N052) and other Fact Sheets.

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.
 : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

 Hand protection
 Material : Protective gloves

 Remarks : For prolonged or repeated contact use protective gloves.
 Eye protection : Safety glasses
 Skin and body protection : Wear protective clothing, such as long-sleeved shirts and pants.
 : Remove and wash contaminated clothing before re-use.
 Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : solid
 Colour : beige, light yellow, tan
 Odour : not significant
 Odour Threshold : No data available

 pH : Not applicable

 Melting point/range : > 2,000 °F

Mineral Wool Commercial and Industrial Insulation

Version 3.3

Revision Date 10/13/2021

Print Date 10/19/2021

Initial boiling point and boiling range	: Not applicable
Flash point	: Not applicable
Evaporation rate	: Not applicable
Flammability (solid, gas)	: No data available
Upper explosion limit	: Not applicable
Lower explosion limit	: Not applicable
Vapour pressure	: Not applicable
Relative vapour density	: Not applicable
Relative density	: No data available
Density	: Not applicable
Solubility(ies)	
Water solubility	: Not applicable
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Thermal decomposition	: Not applicable
Viscosity	
Viscosity, dynamic	: Not applicable
Viscosity, kinematic	: Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Stable under recommended storage conditions. No hazards to be specially mentioned.
Conditions to avoid	: No data available

SECTION 11. TOXICOLOGICAL INFORMATION

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA (29 CFR 1910 Subpart Z, Toxic and Hazardous Substances).

Mineral Wool Commercial and Industrial Insulation

Version 3.3

Revision Date 10/13/2021

Print Date 10/19/2021

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Further information**Product:**

Remarks: Temporary mechanical abrasion (itching) of skin, eyes and respiratory tract may occur upon exposure to fibers or dust during handling of this product and cannot occur unless there is direct contact. Trace amounts of formaldehyde may be released when in contact with moisture, including humidity. This release is most prevalent in conditions of high heat and humidity.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects**Product:**

Additional ecological information : Due to the properties of the product, a hazard to the environment may not be expected.

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

SECTION 14. TRANSPORT INFORMATION**International transport regulations**

Land transport

USDOT: Not classified as a dangerous good under transport regulations

TDG: Not classified as a dangerous good under transport regulations

Sea transport

IMDG: Not classified as a dangerous good under transport regulations

Air transport

Mineral Wool Commercial and Industrial Insulation

Version 3.3

Revision Date 10/13/2021

Print Date 10/19/2021

IATA/ICAO: Not classified as a dangerous good under transport regulations

SECTION 15. REGULATORY INFORMATION**TSCA list**

TSCA - 5(a) Significant New Use Rule List of Chemicals : Not relevant

U.S. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpart D) : Not relevant

EPCRA - Emergency Planning and Community Right-to-Know Act**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity


This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

California Prop. 65

 **WARNING:** This product can expose you to chemicals including formaldehyde, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

The components of this product are reported in the following inventories:

TSCA : On the inventory, or in compliance with the inventory

DSL : On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION**Further information**

Revision Date : 10/13/2021

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Calcium Silicate Pipe, Block and Board Insulation

Version 2.2

Revision Date 06/17/2019

Print Date 06/17/2019

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Trade name : HP Block Insulation, Thermo-12® Gold, Thermo-1200®

Manufacturer or supplier's details

Company : Johns Manville
Address : P.O. Box 5108
Denver, CO USA 80127
Telephone : +1-303-978-2000
Emergency telephone : +1-800-424-9300 (CHEMTREC)
numberCompany : Johns Manville Canada Inc.
Address : 5301 42 Avenue
Innisfail, AB Canada T4G 1A2
Telephone : +1-303-978-2000
Emergency telephone : +1-800-424-9300 (CHEMTREC)
number

Recommended use of the chemical and restrictions on use

Restrictions on use : For professional users only.

Prepared by : productsafety@jm.com

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with 29 CFR 1910.1200 (OSHA HCS 2012) and the Hazardous Products Regulations (WHMIS 2015)**

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards

Temporary mechanical abrasion (itching) of skin, eyes and respiratory tract may occur upon exposure to fibers or dust during handling of this product and cannot occur unless there is direct contact.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Chemical nature**

Pipe or block insulation with a tan color throughout to indicate the product is asbestos free.

Hazardous components

Chemical name	CAS-No.	Concentration (%)
synthetic calcium silicate	1344-95-2	>= 90
cellulose	9004-34-6	>= 0 - <= 4

SECTION 4. FIRST AID MEASURES

General advice : No hazards which require special first aid measures.

Calcium Silicate Pipe, Block and Board Insulation

Version 2.2

Revision Date 06/17/2019

Print Date 06/17/2019

If inhaled	:	If symptoms persist, call a physician.
In case of skin contact	:	If symptoms persist, call a physician.
In case of eye contact	:	Remove contact lenses. Protect unharmed eye. Rinse thoroughly with plenty of water, also under the eyelids. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
Most important symptoms and effects, both acute and delayed	:	None known.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Hazardous combustion products	:	No hazardous combustion products are known
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Further information	:	Standard procedure for chemical fires.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Avoid dust formation.
Methods and materials for containment and cleaning up	:	Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Provide appropriate exhaust ventilation at places where dust is formed.
Advice on safe handling	:	For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.

Calcium Silicate Pipe, Block and Board Insulation

Version 2.2

Revision Date 06/17/2019

Print Date 06/17/2019

- Conditions for safe storage : Keep in a dry, cool place.
- Materials to avoid : No materials to be especially mentioned.
- Further information on storage stability : Stable at normal ambient temperature and pressure.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
synthetic calcium silicate	1344-95-2	TWA (respirable)	5 mg/m ³	NIOSH REL
		TWA (total)	10 mg/m ³	NIOSH REL
		TWA (total dust)	15 mg/m ³	OSHA
		TWA (respirable fraction)	5 mg/m ³	OSHA
		TWA (inhalable fraction)	1 mg/m ³	ACGIH
cellulose	9004-34-6	TWA	10 mg/m ³	ACGIH
		TWA (respirable)	5 mg/m ³	NIOSH REL
		TWA (total)	10 mg/m ³	NIOSH REL
		TWA (total dust)	15 mg/m ³	OSHA
		TWA (respirable fraction)	5 mg/m ³	OSHA

Personal protective equipment

- Respiratory protection : No personal respiratory protective equipment normally required.
Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.
- Filter type : Particulates type
- Hand protection
- Remarks : For prolonged or repeated contact use protective gloves.

Calcium Silicate Pipe, Block and Board Insulation

Version 2.2

Revision Date 06/17/2019

Print Date 06/17/2019

Eye protection	:	Safety glasses
Skin and body protection	:	If used and stored as directed, no special protective equipment is necessary.
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	solid
Color	:	tan
Odor	:	odorless
Odor Threshold	:	No data available
pH	:	Not applicable
Melting point/range	:	Not applicable
Initial boiling point and boiling range	:	Not applicable
Flash point	:	Not applicable
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	No data available
Upper explosion limit	:	Not applicable
Lower explosion limit	:	Not applicable
Vapour pressure	:	Not applicable
Relative vapour density	:	Not applicable
Relative density	:	0.24
Solubility(ies) Water solubility	:	insoluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	No data available
Thermal decomposition	:	No data available
Viscosity	:	

Calcium Silicate Pipe, Block and Board Insulation

Version 2.2

Revision Date 06/17/2019

Print Date 06/17/2019

Viscosity, dynamic : Not applicable

Viscosity, kinematic : Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : No decomposition if stored and applied as directed.

Possibility of hazardous reactions : Stable under recommended storage conditions.
No hazards to be specially mentioned.

Conditions to avoid : No data available

SECTION 11. TOXICOLOGICAL INFORMATION**IARC** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.**ACGIH** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.**OSHA** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.**NTP** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.**STOT - single exposure****Components:****synthetic calcium silicate:**
Target Organs: Eyes, Lungs**Further information****Product:**

Remarks: Temporary mechanical abrasion (itching) of skin, eyes and respiratory tract may occur upon exposure to fibers or dust during handling of this product and cannot occur unless there is direct contact.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

No data available

Calcium Silicate Pipe, Block and Board Insulation

Version 2.2

Revision Date 06/17/2019

Print Date 06/17/2019

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects**Product:**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82
Protection of Stratospheric Ozone - CAA Section 602 Class I
Substances
Remarks: This product neither contains, nor was
manufactured with a Class I or Class II ODS as defined by the
U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A +
B).

Additional ecological information : Due to the properties of the product, a hazard to the
environment may not be expected.

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Disposal of residual product : Dispose of contents/container to an approved facility in
accordance with local, regional, national and international
regulations.

SECTION 14. TRANSPORT INFORMATION**International transport regulations**

Land transport

USDOT: Not classified as a dangerous good under transport regulations

TDG: Not classified as a dangerous good under transport regulations

Sea transport

IMDG: Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO: Not classified as a dangerous good under transport regulations

SECTION 15. REGULATORY INFORMATION**TSCA list**

TSCA - 5(a) Significant New Use Rule List of : Not relevant
Chemicals

U.S. Toxic Substances Control Act (TSCA) Section : Not relevant

Calcium Silicate Pipe, Block and Board Insulation

Version 2.2

Revision Date 06/17/2019

Print Date 06/17/2019

12(b) Export Notification (40 CFR 707, Subpart D)

EPCRA - Emergency Planning and Community Right-to-Know Act**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards**SARA 302** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.**Clean Air Act**

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

This product does not require a warning under the California Safe Drinking Water and Toxic Enforcement Act (Proposition 65).

The components of this product are reported in the following inventories:

TSCA : On the inventory, or in compliance with the inventory

DSL : On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION**Further information**

Revision Date : 06/17/2019

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SAFETY DATA SHEET

Following Regulation 1910.1200

SDS Number: 350 Date of first issue: 24 March 1992 Date of last revision: 21 February 2022

1 - Identification of product

a - Product identifier used on the label

Tradenames: Calsimag CSM, FireMaster 607 Blanket, FireMaster 607 Bulk, FireMaster Dryer Wrap, FireMaster Duct Wrap, FireMaster Duct Wrap +, FireMaster Duct Wrap 2x2, FireMaster Fast Wrap +, FireMaster FastWrap XL, Firemaster FastWrap XLS, FireMaster Marine Blanket, FireMaster Marine Bulk, Firemaster Marine Mats, Firemaster Marine Modules, FireMaster Marine Plus Blanket, Firemaster Plenumwrap Plus, Isoblanket E, Mix 436-C Component B, Plenumwrap+, Pyro-Log SW HT, Pyroscat Duct Wrap XL, Superwool 607 Max Blanket, Superwool 607 Max Bulk, Superwool 607 Max Mat, Superwool 607 Max Modules, Superwool 612 Blanket, Superwool 612 Bulk, Superwool 612 Mat, Superwool 612 Modules, Superwool Blankets, Superwool Bulks, Superwool Enfil Engineered Fiber, Superwool HT Blanket, Superwool HT Bulk, Superwool HT Die-Cut, Superwool HT Log, Superwool HT Mat, Superwool HT Strip, Superwool Plus Blanket, Superwool Plus Bulk, Superwool Plus Diecut, Superwool Plus Log, Superwool Plus Mat, Superwool Plus Strip, Superwool Plus Tank Car Wrap, Superwool Pyro-Bloc, Pyro-Stack and Pyro-Fold Modules, Superwool Pyrofold M, Superwool Pyrofold Y, Superwool Unibloc

b - Other means of identification

ALKALINE EARTH SILICATE (AES) WOOL PRODUCT

c - Recommended use of the chemical and restrictions on use

Application as thermal insulation, heat shields, heat containment, gaskets and expansion joints in industrial furnaces, ovens, kilns, boilers and other process equipment and in the aerospace, automotive and appliance industries, and as passive fire protection systems and firestops. (Please refer to specific technical data sheets for more information)

d - Name, address, and telephone number

Morgan Advanced Materials
P. O. Box 923; Dept. 300
Augusta, GA 30903-0923
Telephone: 706-796-4200

e - Emergency Phone Number

For Product Stewardship and Emergency Information:
Hotline - 1-800-722-5681
Fax - 706-560-4054

For additional SDSs and to confirm this is the most current SDS for the product, visit our web page www.morganthermalceramics.com or send a request to MT.NorthAmerica@morganplc.com

2 - Hazard Identification

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

Not classified. Read the entire safety data sheet.

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

None.

Emergency Overview

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
Alkaline-Earth Silicate Wool ⁽¹⁾	436083-99-7	100
⁽¹⁾ CAS definition: Alkaline Earth Silicate (AES) consisting of silica (50-82 wt %), calcia and magnesia (18-43 wt %), alumina, titania and zirconia (less than 6 wt %), and trace oxides. This CAS composition also covers Morgan Thermal Ceramics products Calcium-Magnesium-Silicate Wool (CAS no. 329211-92-9) and Calcium-Magnesium Zirconium-Silicate Wool (CAS no. 308084-09-5).		

b - Common Name

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

d - 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

Eyes

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.

Skin

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.

Respiratory Tract

If respiratory tract irritation develops, move the person to a dust free location. See Section 8 for additional measures to reduce or eliminate exposure.

Gastrointestinal

If gastrointestinal tract irritation develops, move the person to a dust free environment.

c - Indication of immediate medical attention and special treatment needed, if necessary

5 - Fire-fighting measures

a - Suitable (and unsuitable) extinguishing media and

Use extinguishing media suitable for type of surrounding fire

c - Special Protective Equipment and Precautions for Firefighters

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

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

None

6 - Accidental Release Measures

a - Personal precautions, protective equipment, and emergency procedures

Minimize airborne dust. Compressed air or dry sweeping should not be used for cleaning. See Section 8 "Exposure Controls / Personal Protection" for exposure guidelines.

b - Methods and materials for containment and cleaning up

Pick up large pieces and dispose in a closed container. Follow precaution stated in above section for clean up.

7 - Handling and storage

a - Precautions for safe handling

Limit the 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 clean-up.

b - Conditions for safe storage, including any incompatibilities

Store in a manner to minimize airborne dust.

c - empty containers

Product packaging may contain residue. Do not reuse.

8 - Risk Management Measures / Exposures 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

EXPOSURE GUIDELINES			
MAJOR COMPONENT	OSHA PEL	ACGIH TLV	MANUFACTURER'S REG
Alkaline-Earth Silicate Wool	None Established	None Established	1 f/cc, 8-hr TWA

OTHER OCCUPATIONAL EXPOSURE LEVELS (OEL)

Industrial hygiene standards and occupational exposure limits vary between countries and local jurisdictions. Check which exposure levels apply to your facility and comply with local regulations. If no regulatory dust or other standards apply, a qualified industrial hygienist can assist with a specific workplace evaluation including recommendations for respiratory protection.

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 - Individual protection measures, such as personal protective equipment

PPE - Skin

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.

PPE - Eye

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

PPE – Respiratory

When engineering and/or administrative controls are insufficient to maintain workplace concentrations below the appropriate REG/PEL/REL, the use of appropriate respiratory protection, pursuant to the requirements of OSHA Standards 29 CFR 1910.134 and 29 CFR 1926.103, 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. Selection of filter efficiency (i.e. 95%, 99% or 99.97%) depends on how much filter leakage can be accepted and the concentration of airborne contaminants. 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 CFR 1910.134. 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.

You may also refer to health and safety information on the HTIW Coalition website www.HTIWCoalition.org

9 - Physical and chemical properties

a - Appearance	White odorless material with a wool type appearance
b - Odor	Not applicable
c - Odor Threshold	Not applicable
e - pH	Not applicable
d - Melting Point	1275 - 1300°C (2327 - 2372°F)
f - Initial Boiling Point/Range	Not applicable
g - Flashpoint	Not applicable
h - Evaporation Rate	Not applicable
i - Flammability	Not applicable
j - Upper/Lower Flammability or Explosive Limits	Not applicable
k - VAPOR PRESSURE	Not applicable
l - VAPOR DENSITY	Not applicable
m - Solubility	Less than 1 mg/litre
n - Relative Density	2.5 - 3.0
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

b - Chemical Stability

This is a stable material.

c - Possibility of Hazardous Reaction

Not applicable.

d - Conditions to Avoid

Please refer to handling and storage advise in Section 7.

e - Incompatible Materials

Avoid contact with strong acids

f - Hazardous decomposition products

None

11 - Toxicological information

a - TOXICOKINETICS, METABOLISM AND DISTRIBUTION

b - Acute Toxicity

IRRITANT PROPERTIES

Superwool fibers are negative when tested using approved methods (Directive 67/548/EEC, Annex 5, Method B4). Like all man-made mineral fibers and some natural fibers, fibers contained in this product can produce a mild mechanical irritation resulting in temporary itching or rarely, in some sensitive individuals, in a slight temporary reddening. Unlike other irritant reactions, this is not the result of allergy or chemical skin damage but is caused by mechanical effects.

c - Epidemiology

d - Toxicology

Fibers contained in the products listed in the title have been designed to be rapidly cleared from lung tissue. This low biopersistence has been confirmed in many studies on AES using EU protocol ECB/TM/27(rev 7). When inhaled, even at very high doses, they do not accumulate to any level capable of producing a serious adverse biological effect. In lifetime chronic studies there was no exposure-related effect more than would be seen with any "inert" dust. Subchronic studies at the highest doses achievable produced at worst a transient mild inflammatory response. Fibers with the same ability to persist in tissue do not produce tumors when injected into the peritoneal cavity of rats.

International Agency for Research on Cancer and National Toxicology Program

Not applicable.

12 - Ecological information

These products are not reported to have any ecotoxicity effects.

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 and Disposal

Unless wetted, such a waste is normally dusty and should therefore be properly sealed in containers for disposal. At some authorized disposal sites dusty waste may be treated differently, in order to ensure that they are dealt with promptly and to avoid them being windblown. Check for any national and/or regional regulations which may apply.

Additional information

This product, as manufactured, is not classified as a listed or characteristic hazardous waste according to U. S. Federal regulations (40 CFR 261). Any processing, use, alteration or chemical additions to the product, as purchased, may alter the disposal requirements. Under U. S. 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

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 hazards (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

15.1 - United States Regulations

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: AES wools have been assigned several CAS numbers; however, as "article", they are not required to be listed on the TSCA inventory.

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

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

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

15.2 - 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.

initial statement**Devitrification****PRECAUTIONARY MEASURES TO BE TAKEN AFTER SERVICE UPON REMOVAL**

High temperature insulating wool (HTIW) is typically used in insulation applications to keep temperature exposure at 900°C or above in a closed space. The exposure temperature maximum occurs at the hot face surface of the insulation. The heat exposure on the insulation decreases from the hot face to the cold face as the insulation "insulates itself". As a result, only thin layers of the hot face surface of the insulation become devitrified and respirable dust generated during removal operations typically do not contain detectable levels of crystalline silica (CS).

Toxicological evaluation of the effect of the presence of CS in artificially heated HTIW material has not shown any increased toxicity in vitro and in vivo. The results from different factor combinations such as increased brittleness of fibers or micro crystals embedded in the glass structure of the fiber and therefore not biologically available, may explain the lack of toxicological effects. IARC evaluation as provided in Monograph 68 is not relevant since CS is not biologically available in after-service HTIW.

Product Stewardship Program

High concentrations of fibers and other dusts may be generated when after-service products are mechanically disturbed during removal. Therefore, ECFIA and HTIW Coalition recommend:

- a) Controlled measures are taken to reduce dust emissions and
- b) All personnel directly involved wear an appropriate respirator to minimize and comply with local regulatory limits.

For more information, call the Morgan Thermal Ceramics Product Stewardship Hotline (800-722-5681).

HMIS HAZARD RATING

HMIS Health: 1

HMIS Flammable: 0

HMIS Reactivity: 0

HMIS Personal Protective: To be determined by user

TECHNICAL DATA SHEETS

1114-100, 1114-105, 1114-160, 1114-130, 714-300, 714-100, 714-101, 714-236, 714-233

Revision Summary

Update to section 1

MSDS prepared by

SDS Prepared By: MORGAN THERMAL CERAMICS ENVIRONMENTAL, HEALTH & SAFETY DEPARTMENT

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, Morgan Thermal Ceramics 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.



Section 1. Identification

GHS product identifier: BNZ Insulating Fire Brick
All Grades

**Other means
Of identification:** Insulating Fire Brick, IFB

Product type: Refractory Brick

SDS No.: BNZ-10-101

Relevant identified uses of the substance or mixture and uses advised against:

Identified uses: Refractory lining, back-up insulation

Uses advised against: None known

Supplier: BNZ Materials, Inc.
6901 S. Pierce St., Suite 260
Littleton, CO 80128

Technical Support: 800-955-8650
www.bnzmaterials.com

**Emergency telephone
Number:** CHEMTREC - 800-424-9300 or 703-741-5970 (Outside USA and Canada – collect calls accepted). 24 Hour service.

Section 2. Hazards Identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the
substance or mixture:** CARCINOGENICITY - Category 1A
SPECIFIC TARGET ORGAN TOXICITY (STOT) REPEATED EXPOSURE – Category 1
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 0%

GHS label elements
Hazard pictograms:



Signal word: Danger

Hazard statements: **If dust is present:**
Causes damage to lungs through prolonged or repeated exposure.
May cause cancer.

Precautionary statements

Prevention: If dust is present:

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves, protective clothing, eye protection, face protection
Do not breathe dust.
Wash thoroughly after handling.
Do not eat, drink, or smoke while using this product.

Response: If exposed, concerned, or feel unwell: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplementary Information Use precautions if exposure exceeds the established OSHA limits.
This material does not present a hazard unless dust is generated from processing operations.

Hazards not otherwise Classified None known

Section 3.	Composition/Information on Ingredients
-------------------	---

Substance or mixture: Mixture

Other means of identification Insulating Fire Brick, IFB

CAS number/other identifiers

CAS number : Mixture
Product code : BNZ Insulating Fire Brick

Ingredient name	CAS number	%
Ceramic Matrix	Proprietary	60 – 98
Product contains:		
Crystalline Silica	14808-60-7	0.1 – 46
Crystalline Silica (cristobalite)	14464-46-1	0.1 – 22

Any concentration shown as a range it to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4.

First Aid Measures

Description of necessary first aid measures

- Inhalation:** Remove victim to fresh air.
Drink plenty of water and blow nose to evacuate remaining dust.
If coughing or irritation persist seek medical attention.
- Eye contact:** Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids.
Check for and remove any contact lenses.
Rinse for at least 15 minutes.
If irritation persists seek medical attention.
- Skin contact:** Gently wash with plenty of soap and water.
If irritation persists seek medical attention.
- Ingestion** Emergency procedures not normally required.
If prolonged irritation to gastrointestinal tract or mouth persist seek medical attention.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Inhalation :** Respirable airborne particles may cause temporary irritation to the lungs and upper respiratory system.
- Skin contact:** Prolonged exposure may cause dryness or irritation to the skin.
- Eye contact:** Will cause mechanical irritation to the eyes. May cause moderate to severe eye irritation and dryness.
- Ingestion:** May cause irritation to gastrointestinal tract or mouth.

Over-exposure signs/symptoms

- Inhalation:** Adverse symptoms may include the following:
Irritation
- Eye contact:** Adverse symptoms may include the following:
Irritation
Dryness
- Skin contact:** Adverse symptoms may include the following:
Irritation
Dryness
- Ingestion:** Adverse symptoms may include the following:
Irritation
Stomach pains

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

- Notes to physician:** Medical conditions which may be aggravated by exposure include dry skin, dermatitis, and pre-existing lung conditions such as bronchitis, emphysema, and asthma.
- Specific treatments:** No specific treatment.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training
Wear a suitable NIOSH-approved dust mask if airborne dust is present.
Wash contaminated clothing before re-use.

Section 5.

Firefighting Measures

Specific hazards arising from the chemical: None known other than those represented elsewhere in this SDS.

Hazardous thermal decomposition products Decomposition products may include the following materials:
• Crystalline Silica
During initial exposure to service temperatures, smoke may be emitted which can cause transitory irritation to the lungs and upper respiratory system.

Special protective actions for firefighters Material will not burn.
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.
No action shall be taken involving any personal risk or without suitable training.
No special firefighting equipment is necessary.

Special protective equipment for fire-fighters Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6.

Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

For non-emergency Personnel No action shall be taken involving any personal risk or without suitable training.
Evacuate surrounding areas.
Keep unnecessary and unprotected personnel from entering.
Provide adequate ventilation.
Wear appropriate respirator when ventilation is inadequate.
Put on appropriate personal protective equipment.

For emergency responders If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions This material does not pose a significant threat to the environment.

Avoid dispersion of material and runoff and contact with waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, or air)

Methods and materials for containment and cleaning up

Small spill

Stop source of spill .
Avoid creating airborne dust
Use dust suppressant as necessary
Place material into closed waste disposal container.
Any sweeper or vacuum should be equipped with High Efficiency Particulate (HEPA) filter.
Dispose of using a licensed waste disposal contractor.

Large spill

Stop source of spill.
Avoid creating airborne dust
Use dust suppressant as necessary
Place material into closed waste disposal container.

Any sweeper or vacuum should be equipped with High Efficiency Particulate (HEPA) filter.
Dispose of using a licensed waste disposal contractor.
Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7.

Handling and Storage

Protective measures for safe handling

Protective Measures: Minimize dust generation
Use appropriate respiratory protection if dust is present above the established exposure limits.
If dusty conditions exist (such as during cutting, sanding, or milling) use engineering controls and/or respiratory protection (See Section 8).

Advice on general occupational hygiene

Eating and smoking should be prohibited in areas where this material is handled, stored and processed.
Workers should wash hands and face before eating and smoking.
Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations.
Store in original container in a dry area, away from incompatible materials (see Section 10) and food and drink.

Section 8.	Exposure Controls/Personal Protection
-------------------	--

Control parameters

Occupational exposure limits:

US Occupational Safety and Health Administration Permissible Exposure Limit (OSHA PEL):

Irritant (Nuisance) Dust:	5 mg/m ³
Crystalline Silica	
Permissible Exposure Limit	50 µg/m ³
Action Level	25 µg/m ³

(See 29 CFR 1910.1053, effective June 23, 2018. Regulation contains additional requirements, including written exposure plan, medical exams, training, and recordkeeping.)

American Conference of Governmental and Industrial Hygienists Threshold Limit Value (ACGIH TLV®):

Irritant (Nuisance) Dust:	3 mg/m ³
Crystalline Silica	0.025 mg/m ³

Note: TLV® and PEL values are for eight hour exposures, unless noted.

Appropriate

Engineering controls: If user operations generate dust, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Power equipment should be fitted with a properly designed dust collection device.

Environmental

Exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.
In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene Measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.
Appropriate techniques should be used to remove potentially contaminated clothing.
Wash contaminated clothing before reusing.
Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory Protection: Wear a NIOSH-approved dust mask to limit exposure to product dust.
Higher dust levels may require use of a half or full mask respirator with dust filters.

Use local exhaust if necessary to lower dust levels.

Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Eye/Face Protection: Wear safety glasses with side shields or goggles complying with an approved standard to avoid exposure to dust.

Hand Protection: Protective gloves should be worn when handling and to avoid abrasion or drying of skin.

Body Protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Other Skin Protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved.

Section 9.	Physical and Chemical Properties
-------------------	---

Appearance

Physical State	Solid Blocks of various size
Color	Off-white to gray
Odor	None
Odor Threshold	Not Applicable
pH	Not Applicable
Melting Point	> 2300 °F (1260 °C)
Boiling Point	N/A
Flash Point	None
Burning Time	Not applicable
Specific Gravity	1.5 – 1.7
Burning Rate	Not applicable
Evaporation Rate	0 (butyl acetate = 1)
Flammability (solid, gas)	Not applicable
Lower Explosive (flammable) Limit	Not available
Upper Explosive (flammable) Limit	Not available
Vapor Pressure	Not applicable
Vapor Density	Not applicable
Relative Density	Not available
Solubility	Insoluble
Solubility in Water	Insoluble
Partition coefficient: n-octanol/water	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
SADT	Not available
Viscosity	Not available

Section 10.	Stability and Reactivity
--------------------	---------------------------------

Reactivity: This product is normally not reactive.

Chemical stability: The product is stable.

Possibility of

Hazardous Reactions: Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to Avoid: Avoid strong acids and ammonium salts. Contact with strong oxidizing agents (such as fluorine, chlorine trifluoride) may present a fire hazard.

Incompatible

Materials: Reactive or incompatible with the following materials:
Hydrofluoric acid, fluorine, chlorine trifluoride, oxygen difluoride

Hazardous Decomposition

Products Crystalline silica will dissolve in hydrofluoric acid and produce silicon tetrafluoride, a corrosive gas.

Section 11.	Toxicological Information
--------------------	----------------------------------

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
None Known	--	--	--	--
	--	--	--	--

Irritation/Corrosion: Not available

Sensitization Not available

Mutagenicity Not available

Carcinogenicity: Not available

Reproductive toxicity Not available

Teratogenicity Not available

Specific target organ toxicity (single exposure) Not available

Specific target organ toxicity (repeated exposure) This material contains Crystalline Silica, which is known to cause silicosis. Silicosis is a rapidly progressive, non-cancerous lung disease that is often fatal.

Aspiration hazard Not available

Information on the likely

routes of exposure Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation : Respirable airborne particles may cause temporary irritation to the lungs and upper respiratory system.

Skin contact: Prolonged exposure may cause dryness or irritation to the skin.

Eye contact: Will cause mechanical irritation to the eyes. May cause moderate to severe eye irritation and dryness.

Ingestion: May cause irritation to gastrointestinal tract or mouth.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: Adverse symptoms may include the following:
Irritation

Eye contact: Adverse symptoms may include the following:
Irritation
Dryness

Skin contact: Adverse symptoms may include the following:
Irritation
Dryness

Ingestion: Adverse symptoms may include the following:
Irritation
Stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects: Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects: Not available.

Potential delayed

effects : Not available.

Potential chronic health

effects: Not available

General: No other known significant effects or critical hazards.

Carcinogenicity: Crystalline silica – long term overexposure may cause permanent and irreversible lung damage, including silicosis, and increase the risk of lung cancer, kidney, and liver damage. Silicosis is a rapidly progressive, non-cancerous lung disease that is often fatal.

IARC (International Agency for Research on Cancer) 014808-60-7 Silica dust, crystalline, in the form of quartz or cristobalite - Group 1 (Sup 7, 68,100C, 2012)

National Toxicology Program (NTP) Report on Carcinogens Silica, Crystalline (Respirable Size) - Known To Be Human Carcinogen

OSHA: Crystalline Silica classified as a Category 1A Carcinogen

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Developmental: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12.

Ecological Information

Toxicity Not available.

Persistence and Degradability: Not available.

Bioaccumulative Potential: Not available.

Mobility in soil

Soil/water partition coefficient (K_{OC}): Not available

Other adverse effects: Most of the ingredients in this product are naturally occurring minerals, and, unless contaminated in service, are not hazardous to the environment.

Section 13.

Disposal Considerations

Disposal methods:

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
Dispose of surplus and non-recyclable products via a licensed waste disposal contractor.
Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.
Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
This material and its container must be disposed of in a safe way.
Care should be taken when handling emptied containers that have not been cleaned or rinsed out.
Empty containers or liners may retain some product residues.
Avoid dispersal of spilled material and runoff and contact with waterways, drains and sewers.

Section 14.

Transport Information

	DOT Classification	TDG Classification	IMDG	IATA
UN Number	Not Regulated	Not Regulated	Not Regulated	Not Regulated

Special precautions for user:

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage

Section 15.

Regulatory Information

U.S. Federal regulations

TSCA 8(a) CDR Exempt/Partial exemption: Not applicable
United States inventory (TSCA 8b): This material is listed.

Clean Air Act Section 112

(b) Hazardous Air

Pollutants (HAPs): Not listed

Clean Air Act Section 602

Class I Substances: Not listed

Clean Air Act Section 602

Class II Substances: Not listed

DEA List I Chemicals

(Precursor Chemicals): Not listed

DEA List II Chemicals

(Essential Chemicals): Not listed

SARA 302/304

Composition/information on ingredients: No products were found.

SARA 304 RQ: Not applicable.

SARA 311/312

Classification :

Composition/information on ingredients:

Name	%	Immediate (acute) Health Hazard	Delayed (chronic) Health Hazard	Fire Hazard	Reactivity Hazard	Sudden Release of Pressure
Ceramic Matrix	60 – 98	No	No	No	No	No
Crystalline Silica (Quartz)	0.1 – 46	Yes	Yes	No	No	No
Crystalline Silica (cristobalite)	0.1 – 22	Yes	Yes	No	No	No

Section 313 listed: No

Listed material/compound: Not Applicable

State regulations

New York: Crystalline Silica
New Jersey: Crystalline Silica
Pennsylvania: Crystalline Silica
Massachusetts: Crystalline Silica
Rhode Island: Crystalline Silica
California Prop. 65: Crystalline Silica

International Lists

DSL (Canada) All ingredients are listed, or exempt from inclusion, on the Canadian Domestic Substances List (DSL).

WHMIS 2015 (Canada): See Section 2.

Australia inventory (AICS): Not determined.
China inventory (IECSC): Not determined.
Japan inventory: Not determined.
Korea inventory: Not determined.
Malaysia Inventory (EHS Register): Not determined.

New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan inventory (CSNN): Not determined.

Chemical Weapons Convention List Schedule I Chemicals: Not listed
Chemical Weapons Convention List Schedule II Chemicals: Not listed
Chemical Weapons Convention List Schedule III Chemicals: Not listed

DSCL (Europe): R48/20: Harmful – Danger of serious damage to health by prolonged exposure through inhalation.
R36: Irritating to the eyes
R39: Danger of serious irreversible side effects.
R45: May cause cancer.

Section 16.

Other Information

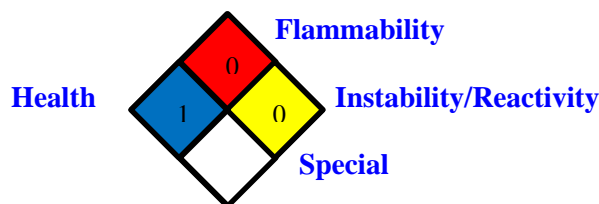
Hazardous Material Information System (U.S.A.)

Health	2
Flammability	0
Physical Hazards	0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

DISCLAIMER – BNZ Materials, Inc., (BNZ) believes the information contained in this Safety Data Sheet (SDS) to be accurate and reliable as of the date of issue, and is provided in good faith as a service to our customers and to comply with applicable laws. This document is intended as a guide for the safe handling, storage, and use of this material under normal conditions of use. No representation, warranty, or guarantee, either express or implied, is intended or given. BNZ does not accept any liability for any loss, injury, or damage resulting from the use of this product.

History

Date of issue/Date of revision:	November 7, 2018
Date of previous issue:	June 1, 2015
Changes :	Added new OSHA exposure limit for crystalline silica Modifications to meet Canadian WHMIS 2015 requirements.
Prepared by:	T Square Associates, Inc. www.tsquare.us

Safety Data Sheet

AMI-SIL[®] AS, CAS, ASBR, AS/AR, CAS/AR, and AST SERIES

1 | Page

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<u>Trade Names/Synonyms:</u>	AMI-SIL [®] /amorphous silica in various forms - cloth, tapes, blankets, tubing, rope, etc.
<u>Product Identification:</u>	AS, CAS, ASBR, AS/AR, CAS/AR, and AST series.
<u>Chemical Name/Synonyms:</u>	Continuous filament silicon dioxide (SiO ₂)/fibrous silica, amorphous silica chemical family.
<u>Manufacturer's Name:</u>	Auburn Manufacturing, Inc P. O. Box 220 Mechanic Falls, ME 04256 207/345-8271

2. HAZARDS IDENTIFICATION

OSHA HCS Status: This product is not a hazardous chemical, as defined by OSHA at 29 CFR 1910.1200



Precautionary Statements:

- P281: Wear personal protective equipment as required
- P302: If on skin, wash with mild soap and running water
- P304: If inhaled, move individual to fresh air. Seek medical attention if irritation persists
- P305: If in eyes, flush eyes at least 15 minutes; seek medical attention if irritation persists

Hazard Statements: N/A

Safety Data Sheet

AMI-SIL® AS, CAS, ASBR, AS/AR, CAS/AR, and AST SERIES

2 | Page

3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Hazardous Ingredients</u>	<u>Weight %</u>	<u>OSHA-PEL</u>	<u>ACGIH-TLV</u>	<u>OTHER</u>
Silicone dioxide, continuous filament	≥ 90	a.	10 mg/ m ³ . 8-hr TWA	none known

Nonhazardous Ingredients

Sizing/bound water	≤ 10	-----none established-----		
--------------------	------	----------------------------	--	--

a. OSHA has not established a specific PEL for fibrous silicone dioxide (amorphous silica). It is considered to be a "particulate not otherwise regulated" (PNOR) and is covered under the OSHA nuisance dust PEL's of 5 mg/m³ for the respirable dust fraction and 15 mg/m³ for the total dust fraction for an 8-hr TWA (Time Weighted Average). Chemically, AMI-SIL® is amorphous silica which has an OSHA limit of 20 mppcf or 80 mg/m³.

4. FIRST AID MEASURES

Inhalation: Move individual to fresh air. Seek medical attention if irritation persists.

Skin Contact: Wash with mild soap and running water. Use a washcloth to help remove fibers. To avoid further irritation do not rub or scratch irritated areas. Rubbing or scratching may force fibers into the skin. Seek medical attention if irritation persists.

Eye Contact: Flush eyes with flowing water for at least 15 minutes. Seek medical attention if irritation persists.

Ingestion: N. A. (Not Applicable)

5. FIRE FIGHTING MEASURES

Extinguishing Media: Water, foam, carbon dioxide, dry chemical

Special Fire-Fighting Instructions: In a sustained fire, self contained breathing apparatus should be worn.

Unusual Fire and Explosion Hazards: None known.

6. ACCIDENTAL RELEASE MEASURES

ACTION TO TAKE FOR SPILLS (Use Appropriate Safety Equipment/PPE):

For solid product, not applicable.

For dusts and fibers generated during fabrication, vacuum and containerize.

Safety Data Sheet

AMI-SIL[®] AS, CAS, ASBR, AS/AR, CAS/AR, and AST SERIES

3 | Page

7. HANDLING, STORAGE AND DISPOSAL

Handling: See Section 8.

The toxicologic data indicate that these materials should be handled with caution. The handling practices described in Section 8 of this SDS must be strictly followed.

Product which has been in service at elevated temperature (> 1800° F) may undergo partial conversion to cristobalite, a form of crystalline silica. This reaction occurs at the lining hot face. As a consequence, this material becomes more friable (brittle); special caution must be taken to minimize generation of airborne dust. The amount of cristobalite present will depend on the temperature and length in service.

IARC has recently reviewed the animal, human and other relevant experimental data on silica in order to critically evaluate and classify the cancer causing potential. Based on its review, IARC has now classified crystalline silica/cristobalite as a Group 1 carcinogen. Crystalline silica inhaled in the form of quartz or cristobalite from industrial sources was classified as *carcinogenic to humans* on the basis of a relatively large number of epidemiological studies that together provided *sufficient evidence* in humans for the carcinogenicity of inhaled crystalline silica under the conditions specified. Crystalline silica is also listed by the NTP as a substance reasonably anticipated to be a carcinogen.

Therefore, special care should be taken when working with "used" material to minimize the generation of dust. The OSHA permissible exposure limit (PEL) for cristobalite is 0.05 mg/m³ (resp.). The ACGIH threshold limit value (TLV) for cristobalite is 0.05 mg/m³ (resp.). (ACGIH 1989 - 90). If exposure limits are exceeded or if irritation is experienced, NIOSH approved respiratory protection should be worn. NIOSH approved respirator for particulates with a TLV of less than 0.05 mg/m³ is generally acceptable, except that supplied air respirators are required for high airborne dust concentrations.

Storage: Store in a clean, dry area. Keep containers closed.

Disposal: Dispose in accordance with federal, state and local regulations as a solid nonhazardous waste.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation: General dilution ventilation and/or local exhaust ventilation should be provided, as necessary, to maintain exposures below PEL's or TLV's. **Adequate ventilation must be provided at elevated temperatures.** The base silica material is noncombustible; however, at temperatures above 250°F, the coating may generate some light steam and/or smoke for a brief period which may require local ventilation and/or exhaust.

Safety Data Sheet

AMI-SIL® AS, CAS, ASBR, AS/AR, CAS/AR, and AST SERIES

4 | Page

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory Protection: A properly fitted NIOSH/MHSA approved disposable dust respirator such as the 3M model 8210 or model 9900 (in high humidity environments) or equivalent should be used when: high dust levels are encountered; the level of fibers in the air exceeds the OSHA permissible exposure limits; or if irritation occurs. Use respiratory protection in accordance with your company's respiratory protection program and OSHA regulations under 29 CFR 1910.134.

Eye Protection: Wear safety glasses or chemical goggles to prevent eye contact. Contact lenses should not be worn unless chemical goggles are also used and care is taken not to touch the eyes with contaminated body parts or materials. Have eye washing facilities readily available where eye contact can occur.

Protective Clothing: Wear loose fitting, long sleeved shirt that covers to the base of the neck, and long pants. Skin irritation from exposure to fiberglass is known to occur chiefly at pressure points such as around the neck, wrist and waist. Wear gloves when handling product.

Work/Hygienic Practices: Handle in accordance with good industrial hygiene and safety practices:

- = Avoid unnecessary exposure to dusts and fibers
- = Remove fibers from skin after exposure
- = Be careful not to rub or scratch irritated areas. Rubbing or scratching may force the fibers into the skin. The fibers should be washed off. Use of barrier creams can, in some instances, be helpful.
- = Use vacuum equipment to remove fibers and dusts from clothing. **COMPRESSED AIR SHOULD NEVER BE USED.** Always wash work clothes separately and wipe out the washer/sink in order to prevent loose glass fibers from getting on other clothes.
- = Keep the work area clean of any dusts and fibers generated during fabrication. Use vacuum equipment to clean up dusts and fibers. Avoid sweeping or using compressed air as these techniques resuspend dusts and fibers into the air.
- = Have access to safety showers and eye wash fountains.
- = For professional use only. **Keep out of children's reach.**

Exposure Limits (TLVS): see sec 7

Safety Data Sheet

AMI-SIL[®] AS, CAS, ASBR, AS/AR, CAS/AR, and AST SERIES

5 | Page

9. PHYSICAL AND CHEMICAL PROPERTIES

Melting Point (Softening): >3000°F Boiling Point(°C): N/A (Not Applicable)
Specific Gravity (Bare Glass): 2.2 Percent Volatile: N/A
Vapor Pressure: (mm Hg): N/A Vapor Density (Air = 1): N/A
Evaporative Rate (Ethyl Ether = 1): N/A Solubility in Water: Not soluble
Appearance and Odor: White/off-white/tan colored solid with no odor; AR series has an orange or black color.
pH: N/A Relative Density: N/A
Upper/Lower Flammability or Exposure Limits: N/A
Freezing Point: N/A Flash Point: N/A
Partition coefficient (n-octanol/water): N/A Auto Ignition Temperature: N/A
Decomposition Temperature: N/A Viscosity: N/A

10. STABILITY AND REACTIVITY

Stability (Conditions to Avoid): Product is stable.
Stabilizers: N/A
Incompatibility (Materials to Avoid): Basic phosphates, hydrofluoric acid, some oxides and hydroxides.
Hazardous Decomposition Products: Sizings or binders may decompose in a fire. Primary decomposition products include carbon monoxide, carbon dioxide, other hydrocarbons and water.
Hazardous Polymerization: Will not occur.
Flash Point (°F): N/A (Not Applicable)
Auto Ignition Temperature (°F): N/A
Flammability Limits (%): LEL: N/A UEL: N/A

Safety Data Sheet

AMI-SIL® AS, CAS, ASBR, AS/AR, CAS/AR, and AST SERIES

6 | Page

11. TOXICOLOGICAL INFORMATION

Primary Routes of Exposure: Inhalation and skin contact.

Health Hazards (Including acute and chronic effects and symptoms of overexposure):

<u>ACUTE:</u>	<u>Inhalation:</u>	Inhalation of dusts and fibers may result in irritation of the upper respiratory tract (mouth, nose and throat).
	<u>Skin Contact:</u>	Skin contact with dusts and fibers may produce itching and temporary mechanical irritation.
	<u>Eye Contact:</u>	Eye contact with fibers and dusts may produce temporary mechanical irritation.
	<u>Ingestion:</u>	Temporary mechanical irritation of the digestive tract. Observe individual. If symptoms develop, consult a physician.

CHRONIC: See carcinogenicity section below. There are no known health effects associated with chronic exposure to this product.

CARCINOGENICITY:

Hazardous Ingredients:	Listed as carcinogen by:	<u>ACGIH</u>	<u>IARC</u>	<u>NTP</u>	<u>OSHA</u>
Silicone dioxide, continuous filament		NA	NA	NA	NA

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Persons with a history of chronic respiratory or skin conditions that are aggravated by mechanical irritants may be at increased risk for worsening their condition from exposure during use of the product.

12. ECOLOGICAL INFORMATION

N/A

13. DISPOSAL CONSIDERATIONS

See Section 8 (if applicable)

14. TRANSPORT INFORMATION

N/A

Safety Data Sheet

AMI-SIL[®] AS, CAS, ASBR, AS/AR, CAS/AR, and AST SERIES

7 | Page

15. REGULATORY INFORMATION

No products made by Auburn Manufacturing Incorporated contain any California Proposition 65 substances as of the 12/29/17 update or come in contact with California Proposition 65 substances during the manufacturing process.

16. OTHER INFORMATION

SDS #5 Date prepared

May 23, 2014

Added California Proposition 65 Statement

Sept. 10, 2018

To the best of our knowledge, the information contained herein is accurate. The information provided is based upon data furnished by our suppliers. However, neither Auburn Manufacturing, Inc. nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. While believed to be reliable, the information or products are intended for use by skilled persons at their own risk. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.