SAFETY DATA SHEET
CLASSIC SILICA™ AEROGEL MONOLITH

1. IDENTIFICATION

PRODUCT NAME: Classic Silica™ Aerogel Monolith

MANUFACTURER/SUPPLIER INFORMATION:

Name:	Aerogel Technologies, LLC
Address:	Boston, MA 02136
Telephone:	(888) X-AEROGEL
	(888) 923-7643
Fax:	(801) 650-1463
Email:	safety@aerogeltechnologies.com
Emergency telephone:	+1 (414) 944-0019

IDENTIFIED USE: Insulation, engineering material
RECOMMENDED RESTRICTIONS: None known

2. HAZARD(S) IDENTIFICATION

EMERGENCY OVERVIEW

OSHA Hazards:	No known or identified OSHA hazards
GHS Hazards:	No known or identified GHS dangerous substances
Hazard pictograms:	Not applicable

HMIS CLASSIFICATION (scale 0-4):

Health Hazard:	0
Flammability:	0
Physical Hazards:	0

The production of this material uses precursors with the following GHS dangerous substance codes. All precursors are expected to be removed during processing, but this has not been confirmed at the time of publishing:

PRECAUTIONARY HAZARDS:

P261	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

POTENTIAL HEALTH EFFECTS:

Inhalation	Dust may be harmful if inhaled. May cause respiratory tract irritation.
Eye Contact:	Exposure to fragments or dust from this product can produce a drying sensation and mechanical irritation of the eyes.
Skin Contact:	Skin contact with fragments or dust from this product can produce a drying sensation and mechanical irritation of the skin and mucous membranes
Ingestion:	This material is not intended to be ingested. If ingested in large quantity, the material may locally dehydrate contacted tissue, produce mechanical irritation, and or result in blockage.
Acute Health Hazards:	Fragments and dust from this product are a physical irritant and may cause temporary irritation or scratchiness of the throat and/or itching and redness of the eyes and skin
Chromic Health: Hazards:	Product is not known to pose any chronic health hazards.
Medical Conditions Aggravated by Exposure:	Excessive inhalation of fragments or dust may aggravate pre-existing chronic lung conditions including, but not limited to, bronchitis, emphysema, and asthma. Dermal contact may aggravate existing dermatitis.

This product is composed of amorphous silicon dioxide, also referred to as silica gel or amorphous precipitated silica. Amorphous silica should not be confused with crystalline silica. Epidemiological studies indicate low potential for adverse health effects from exposure to amorphous silica.

3. COMPOSITION/INFORMATION OF INGREDIENTS

CHEMICAL NAME:	Silicon Dioxide
SYNONYM(S):	Silica aerogel, Silica, Silicon Dioxide, SiO_2

CAS-No.: 7631-86-9

4. FIRST AID MEASURES

IF INHALED: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Seek medical advice.

IN CASE OF SKIN CONTACT: Wash off with soap and plenty of water. Seek medical advice.

IN CASE OF EYE CONTACT: Flush eyes with water as a precaution. Seek medical advice.

IF SWALLOWED: Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek medical advice.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:

No further relevant information available

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:

No further relevant information available

5. FIREFIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA:

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

HAZARDOUS COMBUSTION PRODUCTS:

No data available. Treat material as having potential for emission of toxic gases upon combustion.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTING:

Wear self-contained breathing apparatus for firefighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PERCAUTIONS:

Use personal protective equipment. Avoid formation of fragments or dust. Avoid dust of fragment formation. Avoid breathing dust or fragments. Ensure adequate ventilation. Use personal protective equipment as necessary.

ENVIRONMENTAL PRECAUTIONS:

Material is not soluble. Do not let product enter drains. No special environmental precautions required.

METHODS/MATERIALS FOR CONTAINMENT AND CLEAN-UP:

Collect released material fragments and/or dust. Keep in suitable, closed containers for disposal. Dry vacuuming is the preferred method of cleanup.

7. HANDLING AND STORAGE

SAFE HANDLING PRECAUTIONS:

Avoid pinching, squeezing, crushing, or applying concentrated load to monolith as these actions will result in fragmentation and/or formation of dust. Avoid grinding and powderization that may result in dust formation. Provide appropriate exhaust ventilation if dust or fragments are formed.

CONDITIONS FOR SAFE STORAGE:

Keep material in a tightly closed container, in a dry and well-ventilated place.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE LIMIT VALUES:

There are no exposure limits identified for the main product component, classified as synthetic amorphous silica. Exposure limits for synthetic amorphous silica are based on silica (CAS Number 7631-86-9).

US OSHA PEL (TWA)[a]	15 mg m^{-3} (total dust)
	5 mg m^{-3} (respirable fraction)
US ACGH[b]	10 mg m^{-3} (inhalable)
	3 mg m^{-3} (respirable)
UK WEL	6 mg m^{-3} (inhalable fraction)
	2.4 mg m^{-3} (respirable fraction)
Germany TRGS 900	4 mg m^{-3} (inhalable fraction)

[a] US OSHA standard for amorphous silica is 80 mg m^{-3}% SiO2. *NIOSH Sampling Method 7501 for Amorphous Silica* calculates the % SiO2based on the percentage of crystalline

silica in the sample. The particulate limit for 0% crystalline silica applies for silica aerogel as it is amorphous.

[b] US ACGH based on "particles not otherwise specified" (PNOS).

PERSONAL PROTECTIVE EQUIPMENT:

Ventilation:

Local exhaust in accordance with general industrial hygiene practices is recommended if dust or fragments form

Respiratory protection:

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection:

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection:

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene protection:

General industrial hygiene practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPERANCE:

Form: Monolithic Solid

Color: Transparent blue to white

GENERAL INFORMATION:

Melting point/freezing point:	>1600 °C - lit
Initial boiling point/boiling range:	2230 °C – lit
Sintering point:	600 °C to 800 °C
Flash point:	No data available
Ignition temperature:	No data available
Auto-ignition temperature:	No data available
Evaporation rate	No data available
Decomposition temperature:	No data available
Flammability (solid, gas):	May form combustible dust concentrations in air
Lower explosion limit:	No data available
Upper explosion limit:	No data available
Vapor pressure:	<0.01 hPa (<0.01 mmHg) at 20 °C (68 °F)
Density:	0.02 g/cc to 0.1 g/cc
Viscosity:	infinite (solid)
Water solubility:	insoluble
Partition coefficient:	No data available (n-octanol/water)
Odor:	odorless
Odor threshold:	No data available
pH value:	Not applicable

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:

Stable under recommended storage conditions

POSSIBILITY OF HAZARDOUS REACTIONS:

No data available

CONDITIONS TO AVOID:

No data available

MATERIALS TO AVOID:

Strong oxidizing agents or substances that combine explosively with organic compounds.

HAZARDOUS DECOMPOSITION PRODUCTS:

No data available.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Oral LD50 (rat):	3,160 mg/kg
Inhalation LC50:	No data available
Dermal LD50:	No data available
Other information on acute toxicity:	No data available

SKIN CORROSION/IRRITATION: No data available

SERIOUS EYE DAMAGE/EYE IRRITATION: No data available

RESPIRATORY OR SKIN SENSITIZATION: No data available

GERM CELL MUTAGENICITY: No data available

CARCINOGENICITY:

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 data available
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.
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.

REPRODUCTIVE TOXICITY: No data available

TERATOGENICITY: No data available

SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE (GLOBALLY HARMONIZED SYSTEM):
No data available

SPECIFIC TARGET ORGAN TOXICITY – REPEATED EXPOSURE (GLOBALLY HARMONIZED SYSTEM):

No data available

ASPIRATION HAZARD:
No data available

POTENTIAL HEALTH EFFECTS:

Inhalation:	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion:	May be harmful if swallowed.
Skin:	May be harmful if absorbed through skin. May cause skin irritation.
Eyes:	May cause eye irritation.

Synergistic effects: No data available

ADDITIONAL INFORMATION:
RTECS: No data available

12. ECOLOGICAL INFORMATION

TOXICITY:
No data available

PERSISTENCE AND DEGRADABILITY:
No data available

BIO-ACCUMULATIVE POTENTIAL:
No data available

MOBILITY IN SOIL:
No data available

PBT AND VPVB ASSESSMENT:
No data available

OTHER ADVERSE EFFECTS:
No data available

13. DISPOSAL CONSIDERATIONS

PRODUCT:

Offer surplus and non-recyclable materials to a licensed disposal company.

CONTAMINATED PACKAGING:

Dispose of as unused product.

14. TRANSPORT INFORMATION

UN number:	Not applicable
(DOT, AND, IMDG, IATA) UN proper shipping name:	Not applicable
(DOT, AND, IMDG, IATA) Transport hazard class(es):	Not applicable
(DOT, AND, IMDG, IATA) Packing Group:	Not applicable
(DOT, AND, IMDG, IATA) Environmental hazards:	Not applicable
Special precautions for user:	Not applicable
Transport in bulk (Annex II of MARPOL 73/78)	Not applicable
IBC Code	Not applicable
Marine Pollutant IMDG Code	No

15. REGULATORY INFORMATION

OSHA HAZARDS:

No known hazards

SARA 302 COMPONENTS:

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 COMPONENTS:

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.

SARA 311/312 HAZARDS:

No SARA Hazards

MASSACHUSETTS, PENNSYLVANIA, NEW JERSEY RIGHT TO KNOW COMPONENTS:

Component: Silicon Dioxide

CAS: 7631-86-9

CALIFORNIA PROP. 65 COMPONENTS:

To best of our knowledge, this product does not contain chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm

16. OTHER INFORMATION

Date of preparation / last revision: 05/16/2018

FURTHER INFORMATION:

The information contained within this MSDS document is believed to be correct and accurate, but does not purport to be inclusive or comprehensive and should only be used as a guide. The information contained within this document is based on the present state of knowledge but does not represent a guarantee of properties or safety. Aerogel Technologies LLC assumes no legal responsibility for use of the information contained within this MSDS and furnishes no warranty, expressed or implied, for the material.