Safety Data Sheet
acc. to OSHA HCS

Printing date 11/02/2022 Reviewed on 11/02/2022

1 Identification

Product identifier

This Safety Data Sheet (SDS) is provided as a courtesy in response to customer requests. The product is classified as an article. Articles are not subject to this geography's hazard communication regulations. As generally defined: "Article" means any article that is formed to a specific shape or design during manufacture, the intended use of which when in that form is dependent in whole or in part on its shape or design, and that, when being installed, if the intended use of the article requires it to be installed, and under normal conditions of use, will not release or otherwise cause an individual to be exposed to a hazardous product.

Trade name: Pyrogel® XTF

Application of the substance / the mixture High performance insulation material
Uses advised against None specified.

Details of the supplier of the safety data sheet

Manufacturer/Supplier:
Aspen Aerogels, Inc.
30 Forbes Road Bld. B
Northborough, MA 01532
+1 (508) 691-1111
Information department: EHS@aerogel.com

Emergency telephone number
INFOTRAC : 800-535-5053 (US only)
+1-352-323-3500 (international)

2 Hazard(s) identification

Classification of the substance or mixture The product is not classified, according to the Globally Harmonized System (GHS).

Label elements

GHS label elements None
Hazard pictograms None
Signal word None
Hazard statements None

Other hazards

Results of PBT and vPvB assessment
The components in this formulation do not meet the criteria for classification as PBT or vPvB.
PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization:

Hazardous components: No hazardous components in this proprietary formulation.

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4 First-aid measures

Description of first aid measures

After inhalation: Remove person to fresh air.

After skin contact:

Wash with soap and water.

Observe good occupational hygiene for work.

If skin irritation or rash occurs: seek medical attention.

After eye contact:

Do not rub eyes.

Dust particles may cause abrasive injury.

Flush eyes with water for several minutes.

After swallowing: No need for first aid is anticipated.

Most important symptoms and effects, both acute and delayed

Dust may cause mechanical eye and skin irritation.

Inhalation of dust may cause irritation of the respiratory system.

Silica aerogels are hydrophobic (repel water) and may cause temporary drying and irritation of the skin, eyes, and mucous membranes.

Indication of any immediate medical attention and special treatment needed

Immediate medical attention is generally not required.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents: Use fire fighting measures that suit the environment.

Special hazards arising from the substance or mixture

Product is a super-insulator. Rolls of material will retain heat within internal layers that may be a source of ignition after the fire is extinguished. Keep hot material away from combustible materials and cool hot insulation with water.

Advice for firefighters

Protective equipment: Normal firefighting procedures should be followed to avoid inhalation of smoke and gases produced by a fire.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment as required.

Ensure adequate ventilation.

Avoid formation of dust.

Environmental precautions: Report spills as required under national and local regulations.

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Methods and material for containment and cleaning up:
Collect using methods that avoid the generation of dust (pick up or vacuum dust) and place in appropriate container for disposal.

Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Precautions for safe handling:
Prevent formation of dust.
Aerogel blankets may generate dust when handled. Workplace exposures to all dusts should be controlled with standard industrial hygiene practices. Local exhaust should be the primary dust control method. Dry vacuuming is the preferred method for cleaning up dust. Because aerogel dust is hydrophobic, water is not an effective dust control agent. Unpack material in the work area. This will help to minimize the area where dust exposure may occur. Trimmed material should be promptly packed in disposal bags. Trims and offcuts may be reused in secondary applications. Scrap material should be packed for disposal. Avoid dust contact with eyes, skin and clothing and avoid breathing dust. Wash hands with soap and water after handling.
Information about protection against explosions and fires: No special measures required.

Conditions for safe storage, including any incompatibilities
Information about storage in one common storage facility:
Keep tightly closed in the packaging until ready for use.
Store in a dry place.
Further information about storage conditions:
Dispose of contents/container in accordance with local/regional/national/international regulations.

Specific end use(s) No relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical systems:
Technical measures and the application of adequate working methods take priority over the use of personal protection equipment.
Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Control parameters

Components with limit values that require monitoring at the workplace:	
CAS: 65997-17-3 Glass, oxide, chemicals	
PEL	Long-term value: 5* 15** mg/m³ (respirable*) (total dust**)
CAS: 7631-86-9 silica, amorphous	
TWA	Long-term value: 6 mg/m³

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CAS: 1317-80-2 Titanium dioxide	
PEL	Long-term value: 15 mg/m³ (total dust)
CAS: 21645-51-2 aluminium hydroxide	
REL	Long-term value: 2 mg/m³ as Al
Proprietary Non-Hazardous Pigment (iron/manganese)	
PEL	Ceiling limit value: 5 mg/m³

Regulatory information
PEL: Guide to Occupational Exposure Values (OSHA PELs)
REL: Guide to Occupational Exposure Values (NIOSH RELs)

Regulatory information
Monitoring of substance concentrations in air at the workplace may be necessary to ensure compliance with official exposure limit values and adequacy of exposure controls. For further information contact the supplier or the competent authorities.

Exposure controls

Personal protective equipment:
General protective and hygienic measures: Observe good hygiene practices.

Breathing equipment: Select fit and use in accordance with local and national regulations.

Protection of hands:
Material of gloves Impervious gloves recommended for handling product.
Penetration time of glove material Not applicable.

Eye protection: Appropriate safety eye wear is recommended.

Body protection: Appropriate work clothing is recommended.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information
Appearance:

Form:	Non-woven fabric
Color:	Grey
Odor:	Ammonia-like
Odor threshold:	Not determined.
pH-value:	No data available.

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Change in condition	
Melting point/Melting range:	No data available.
Boiling point/Boiling range:	Undetermined.
Flash point:	Not applicable.
Flammability (solid, gaseous):	Not Flammable.
Ignition temperature:	No data available.
Decomposition temperature:	Not determined.
Auto igniting:	Not determined.
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
Oxidizing properties:	Not applicable.
Vapor pressure:	Not applicable.
Density:	Not determined.
Relative density:	Not determined.
Vapour density:	Not applicable.
Evaporation rate:	Not applicable.
Solubility in / Miscibility with	
Water:	Insoluble.
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
Other information	No further relevant information available.

10 Stability and reactivity

Reactivity Not reactive under normal conditions.
Chemical stability Stable under normal conditions.
Possibility of hazardous reactions No dangerous reactions known.
Conditions to avoid Avoid prolonged exposure above the recommended use temperature.
Incompatible materials: Strong acids and bases
Hazardous decomposition products: No hazardous decomposition products during normal storage and handling.

11 Toxicological information

Information on toxicological effects
Acute toxicity:
Based on available data, components are not acutely toxic.

Skin Corrosion/Irritation: Handling may cause dryness and may cause temporary irritation to skin.

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Serious eye damage/irritation: Handling may cause dryness and may cause temporary irritation to skin.
Sensitization: The chemical structure does not suggest a sensitizing effect.

Additional toxicological information:

Carcinogenic categories
IARC (International Agency for Research on Cancer)
IARC is a research organization that evaluates the evidence on the causes of cancer but does not make regulation, legislation, or public health intervention recommendations. The IARC Monographs Programme identifies cancer hazards but does not evaluate the risks associated with specific levels or circumstances of exposure.

Group 1: The agent is carcinogenic to humans
Group 2A: The agent is probably carcinogenic to humans
Group 2B: The agent is possibly carcinogenic to humans
Group 3: The agent is not classifiable as to its carcinogenicity to humans
All Components have the value 3.

NTP (National Toxicology Program)
None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

Germ cell mutagenicity Based on available data, the classification criteria are not met.
Reproductive toxicity: Based on available data, the classification criteria are not met.
STOT-single exposure: Based on available data, the classification criteria are not met.
STOT-repeated exposure: Based on available data, the classification criteria are not met.
Aspiration hazard: Based on available data, the classification criteria are not met.

12 Ecological information

Toxicity
Aquatic toxicity: Not toxic to aquatic environment.

Persistence and degradability No relevant information available.
Bioaccumulative potential No relevant information available.
Mobility in soil No relevant information available.

Ecotoxical effects:

General notes: Not hazardous for water.

Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

(Contd. on page 7)

Other adverse effects No relevant information available.

13 Disposal considerations

Waste treatment methods
Recommendation: Dispose of contents/container in accordance with local/regional/national/international regulations.

Uncleaned packagings:
Recommendation:
Cover promptly to avoid dust generation.
Disposal must be made according to official regulations.

14 Transport information

UN-Number
DOT, IMDG, IATA Not applicable

UN proper shipping name
DOT, IMDG, IATA Not applicable

Transport hazard class(es)

DOT, IMDG, IATA
Class Not applicable

Packing group
DOT, IMDG, IATA Not applicable

Environmental hazards: Not applicable.

Special precautions for user Not applicable.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not determined

UN "Model Regulation": Not applicable

15 Regulatory information

TSCA (Toxic Substances Control Act):
All ingredients are listed.

Hazardous Air Pollutants
None of the ingredients is listed.

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Proposition 65

California Proposition 65 is a law that applies to products sold to consumers in the State of California. The law mandates disclosure, in consumer products, of certain chemicals that are known to the state to cause cancer and/or reproductive harm.

Chemicals known to cause cancer:

NOTE: Company test data on particle size of the raw material is not classified as hazardous or carcinogenic.

CAS: 1317-80-2	Titanium dioxide

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

16 Other information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not valid for the new made-up material.

Date of preparation / last revision 11/02/2022

Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit

Sources Data arise from reference works and literature.