

SDS Reference AS4621  
Version No. 1  
Revision Date -  
Origination Date 24/AUG/2012

# Safety Data Sheet



Prepared for US/CA/EU Markets as International Trade

Product Name	PYROGEL® XT-E
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## SECTION 1. IDENTIFICATION OF SUBSTANCE / MIXTURE AND COMPANY / UNDERTAKING

<b>Product Identifier</b>	<b>PYROGEL® XT-E</b>
	CAS No. Not applicable      EC No. Not applicable      Index No. Not applicable
<b>Synonym (s)</b>	Silica aerogel material
<b>REACH Registration Number</b>	Not applicable. Aerogel insulation blankets are considered to be an article, not a substance or mixture, under the REACH Regulation.
<b>Relevant identified uses and uses advised against</b>	<b>Industrial and Professional:</b> High performance insulation material. <b>Consumer:</b> Not applicable. <b>Avoid any use:</b> None reported.
<b>Details of the supplier</b>	<b>Aspen Aerogels, Inc.</b> <b>30 Forbes Road</b> <b>Northborough</b> <b>Telephone: (508) 691-1111</b> <b>MA 01532</b>
<b>e-mail address</b>	<a href="mailto:EHS@aerogel.com">EHS@aerogel.com</a>
<b>Emergency Telephone number</b>	<b>800-535-5053 US (INFOTRAC)</b> <b>352-323-3500 INTERNATIONAL</b>

## SECTION 2. HAZARDS IDENTIFICATION

<b>Classification (EC 1272/2008)</b>	Product is not classified as a hazardous material.
<b>Classification (1999/45/EC / CHIP)</b>	Product is not classified as a hazardous material.
<b>Label Elements:</b>	No pictogram required
<b>Signal Word</b>	Not applicable
<b>Hazard Statements</b>	Not applicable
<b>Precautionary Statements</b>	Not applicable
<b>Supplemental information</b>	None reported.
<b>Other hazards</b>	Dust from the product when handling and in use may cause mechanical irritation to the respiratory tract, eyes and skin. Not classified as PBT or vPvB, based on the assessment carried out according to Annex XIII of REACH regulation.

NFPA HAZARD CLASSIFICATION		HMIS HAZARD CLASSIFICATION	
Health	1	Health	1
Flammability	0	Flammability	0
Reactivity	0	Reactivity	0
Other	Not applicable	Protection	Please refer to Section 8.

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## SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name	CAS No	EC No	REACH Reg No	Classification	Conc'n %
*Methylsilylated silica (synthetic amorphous silica)	68909-20-6	272-697-1	Not registered	Not classified	40-50
*Fibrous glass (textile grade)	-	-	Not registered	Not classified	40-50
*Iron oxide (iron(III) oxide)	1309-37-1	215-168-2	Not available	- GHS09 H411 4.1/2 N R51/53	1-5
*Aluminium trihydrate (aluminium hydroxide)	21645-51-2	244-492-7	Not available	Not classified	1-5

Other components are either not classified or are below the concentration limit for classification. Balance

**Further information** \*CONTAINS A SUBSTANCE WITH AN OCCUPATIONAL EXPOSURE LIMIT  
 Key to abbreviations, hazard statements and risk phrases in Section 16.

## SECTION 4. FIRST AID MEASURES

<b>Description of first aid measures</b>	Take measures to avoid further contamination or contact. Remove contaminated clothing immediately, to be washed before reuse.
<b>Inhalation</b>	Remove to fresh air. Drink water to clear throat and blow nose to remove dust. If necessary seek medical advice
<b>Skin contact</b>	Clean areas of skin affected with soap and plenty of water.
<b>Eye contact</b>	In case of contact with eyes, rinse immediately with plenty of water until irritation subsides. If necessary (e.g. irritation persists), consult an eye specialist / ophthalmologist.
<b>Ingestion</b>	No first aid treatment required.
<b>Most important symptoms and effects, both acute and delayed</b>	Irritation of the throat and upper respiratory tract, irritation of skin and eyes. Inhalation of excessive amounts of dust from the product may cause mechanical irritation to the respiratory tract. Dermal contact may aggravate existing dermatitis.
<b>Indication of any immediate medical attention and special treatment needed</b>	None reported.

## SECTION 5. FIRE FIGHTING MEASURES

<b>General hazard</b>	THE PRODUCT IS NON-COMBUSTIBLE
<b>Extinguishing media</b>	To suit local surroundings (e.g. water spray, carbon dioxide, foam, chemical powder)
<b>Extinguishing media not to be used</b>	None reported.
<b>Special hazards arising from the substance or mixture</b>	Decomposition products released in a fire, (e.g. oxides of carbon), should be considered toxic if inhaled. Rolls of material can retain heat within internal layers and re-ignite combustible materials if heat is not removed.
<b>Advice for fire-fighters</b>	Wear self-contained breathing apparatus.

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures** Adhere to personal protective measures.  
 Minimize dust generation and ensure adequate ventilation.

**Environmental precautions** Do not allow to get into waste water or waterways; if this occurs, inform the relevant water authority at once

**Methods and materials for containment and cleaning up** Take up mechanically (e.g. vacuum up) into tightly closable containers. Label container and dispose of as prescribed.

**Reference to other sections** Section 8 – personal protective measures  
 Section 13 – disposal of waste

## SECTION 7. HANDLING AND STORAGE

**Precautions for safe handling** Handle in accordance with good hygiene and safety practice.  
 Unpack material in the work area to minimize the area where dust exposure may occur.  
 Pack trimmed material and scrap in disposal bags promptly.

**Conditions for safe storage, including any incompatibilities** Ensure adequate ventilation of the storage area. Keep containers tightly closed, cool and dry.  
 Keep product in packaging until ready for use.  
 Do not store near strong acids or strong bases.

**Specific end use(s)** Industrial and Professional:  
 Ensure safe systems of work or equivalent arrangements are in place to manage risks.

## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Control parameters** Monitoring of the workplace should be considered in accordance with Community Exposure Limits or other data as indicated below.

LTEL (TWA):	- ppm	15 mg/m <sup>3</sup>	PEL data for silica, amorphous, total dust, OSHA
LTEL (TWA):	- ppm	5 mg/m <sup>3</sup>	PEL data for silica, amorphous, respirable fraction, OSHA
LTEL (TWA):	- ppm	10 mg/m <sup>3</sup>	Data for silica, amorphous, inhalable, ACGIH
LTEL (TWA):	- ppm	3 mg/m <sup>3</sup>	Data for silica, amorphous, respirable, ACGIH
LTEL (8 hour TWA):	- ppm	6 mg/m <sup>3</sup>	WEL data for silica, amorphous, inhalable dust EH40 (2005)
LTEL (8 hour TWA):	- ppm	2.4 mg/m <sup>3</sup>	WEL data for silica, amorphous, respirable dust EH40 (2005)
LTEL (8 hour TWA):	- ppm	4 mg/m <sup>3</sup>	data for silica, amorphous, inhalable fraction, TRGS 900

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## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

LTEL (TWA):	1.0 fibers/cc	- mg/m <sup>3</sup>	Data for continuous filament glass fibers, ACGIH
LTEL (TWA):	- ppm	5 mg/m <sup>3</sup>	Data for continuous filament glass fibers, inhalable, ACGIH
LTEL (TWA):	- ppm	10 mg/m <sup>3</sup>	Data for continuous filament glass fibers, total dust, OSHA
LTEL (TWA):	- ppm	5 mg/m <sup>3</sup>	Data for continuous filament glass fibers, respirable fraction, OSHA
LTEL (TWA):	- ppm	10 mg/m <sup>3</sup>	PEL data for iron oxide fume, OSHA
LTEL (TWA):	- ppm	5 mg/m <sup>3</sup>	Data for iron oxide, respirable, ACGIH
LTEL (8 hour TWA):	- ppm	5 mg/m <sup>3</sup>	WEL data for iron oxide fume, EH40 (2005)
STEL (15 min):	- ppm	10 mg/m <sup>3</sup>	WEL data for iron oxide fume, EH40 (2005)
STEL (15 min):	- ppm	3 mg/m <sup>3</sup>	Data for iron oxide, respirable dust, TRGS 900
STEL (15 min):	- ppm	10 mg/m <sup>3</sup>	Data for iron oxide, inhalable dust, TRGS 900
LTEL (TWA):	- ppm	15 mg/m <sup>3</sup>	PEL data for aluminium trihydrate, total dust, OSHA
LTEL (TWA):	- ppm	5 mg/m <sup>3</sup>	PEL data for aluminium trihydrate, respirable fraction, OSHA
LTEL (TWA):	- ppm	10 mg/m <sup>3</sup>	Data for aluminium trihydrate, inhalable, ACGIH
LTEL (TWA):	- ppm	3 mg/m <sup>3</sup>	Data for aluminium trihydrate, respirable, ACGIH
Long-term		3.59 mg/m <sup>3</sup>	DNEL, local, inhalation, data for aluminium trihydrate
Long-term		10 mg/m <sup>3</sup>	DNEL, systemic, inhalation, data for iron oxide
Long-term		10 mg/m <sup>3</sup>	DNEL, local, inhalation, data for iron oxide
Aqua (freshwater)		74.9 µg/l	PNEC data for aluminium trihydrate

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## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

STP 20 mg/l PNEC data for aluminium trihydrate

<b>Engineering controls</b>	Provide local exhaust ventilation.
<b>Personal protection</b>	Observe normal standards for handling chemicals. Avoid breathing dust. Avoid eye and skin contact. Wash hands before breaks and after work. Wear personal protective equipment appropriate to the task (see below).
<b>Eye protection</b>	Safety glasses or chemical goggles
<b>Skin protection</b>	Nitrile gloves Disposable coveralls
<b>Respiratory protection</b>	Dust masks, NIOSH or CE-approved respirator or air fed visor (if ventilation is insufficient).
<b>Other personal protection</b>	None reported.
<b>Environmental exposure controls</b>	Do not allow to get into waste water or waterways.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical form</b>	Fabric blanket
<b>Colour</b>	Maroon
<b>Odour</b>	Faint ammonia
<b>Odour threshold</b>	0.6–53ppm
<b>Molecular weight</b>	Not applicable
<b>Molecular formula</b>	Not applicable
<b>pH</b>	Not applicable
<b>Melting pt / range</b>	Not applicable
<b>Boiling pt / range</b>	Not applicable
<b>Flash point</b>	Not applicable
<b>Relative Evaporation Rate (n-Butyl Acetate = 1)</b>	Not applicable
<b>General Flammability</b>	NON-COMBUSTIBLE
<b>Flammability/explosive limits</b>	Not applicable
<b>Vapour pressure</b>	Not applicable
<b>Vapour Density</b>	Not applicable
<b>Relative Density</b>	Not applicable
<b>Solubility</b>	Insoluble in water

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Partition coefficient (log P or log K n-octanol / water) Not applicable  
Auto-ignition temperature Not applicable  
Decomposition temperature Not applicable  
Viscosity Not applicable  
Explosive properties Not applicable  
Oxidising properties Not applicable  
Other information None reported

## SECTION 10. STABILITY & REACTIVITY

Reactivity The product is hydrophobic and repels water.  
Chemical stability Stable under normal conditions of handling  
Possibility of hazardous reactions None reported.  
Conditions to avoid Prolonged exposure to temperatures above the recommended use temperatures.  
Incompatible materials Strong acids, strong bases.  
Hazardous decomposition products None reported.

## SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects Information refers to dust that may be produced when product is used.  
Target organs: respiratory system, eyes, skin.  
Routes of exposure: inhalation, eye and skin contact.

Acute toxicity - oral	LD <sub>50</sub>	>5,000mg/kg	Data for synthetic amorphous silica
	LD <sub>50</sub>	>10,000mg/kg	Data for iron oxide
	LD <sub>50</sub> (rat)	>2,000mg/kg	Data for aluminium trihydrate
Acute toxicity - inhalation	LC <sub>50</sub>	>2,000mg/m <sup>3</sup>	Data for synthetic amorphous silica
	LD <sub>50</sub>	>210mg/m <sup>3</sup>	Data for iron oxide
Acute toxicity - dermal	LD <sub>50</sub>	>3,000mg/kg	Data for synthetic amorphous silica

Skin corrosion/irritation Dust may cause irritation and dryness to skin.  
Serious eye damage/irritation Dust may cause irritation and dryness to eyes.  
Respiratory sensitisation None reported for product.  
Skin sensitisation None reported for product.

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## SECTION 11. TOXICOLOGICAL INFORMATION

### CMR effects

**Carcinogenicity:** Data conclusive, but not sufficient for classification.

Component	ACGIH	NTP	IARC
Continuous Filament Glass Fibers	A4	Not Listed	3
Amorphous silica	NA	Not Listed	None
Natural micaceous iron oxide	A4	Not Listed	None
Aluminium trihydrate	Not listed	Not Listed	None

**Mutagenicity:** Data conclusive, but not sufficient for classification.

**Reproductive toxicity:** Data conclusive, but not sufficient for classification.

### Single dose toxicity

No data available for product.

### Repeated dose toxicity

No data available for product

### Aspiration hazard

None reported.

### Adverse health effects and symptoms

Excessive inhalation of dust may aggravate pre-existing chronic lung conditions including, but not limited to, bronchitis, emphysema, and asthma. Dermal contact may cause mechanical irritation.

### Other information

None reported.

## SECTION 12. ECOLOGICAL INFORMATION

### Toxicity

Product is insoluble and inert.

### Fish, acute

LC<sub>50</sub> (*Danio rerio*) >10,000 mg/l/96H Data for synthetic amorphous silica  
 LC<sub>50</sub> (*Salmo trutta*) >100 mg/l/96H Data for aluminium trihydrate

### Fish, chronic

No data available for product.

### Invertebrates

EC<sub>50</sub> (*Daphnia magna*) >10,000 mg/l/24H Data for synthetic amorphous silica  
 EC<sub>50</sub> (*Daphnia magna*) >100mg/l/48H Data for iron oxide

### Algae

No data available for product.

### Soil organisms

No data available for product.

### Micro-organisms

EC<sub>50</sub> (activated sludge) >10,000mg/l/3H Data for iron oxide

### Other organisms

No data available for product.

### Persistence and degradability

Not applicable for inorganic material.

### Bioaccumulative potential

None expected due to insoluble nature of product.

### Mobility in soil

None expected due to insoluble nature of product.

### Results of PBT and vPvB assessment

Not classified, based on the assessment carried out according to Annex XIII of REACH regulation.

### Other adverse effects

None reported.

## SECTION 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

In accordance with national (i.e. Hazardous Waste Regulations) and local authority regulations. Avoid generation of dust and use appropriate control measures (see Section 8). Do not allow to get into waste water or waterways.

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## SECTION 14. TRANSPORT INFORMATION

**Land transport (ADR/RID)** The product is not classified for transport.

**UN number**

**UN proper shipping name**

**Transport hazard class(es)**

**Packing group**

**Environmental hazards**

**Special precautions for user**

**Emergency action code**

**Hazard Identification Number**

**Marine transport (IMDG)** The product is not classified for transport.

**UN number**

**UN proper shipping name**

**Transport hazard class(es)**

**Packing group**

**Environmental hazards**

**Special precautions for user**

**Air transport (ICAO/IATA)** The product is not classified for transport.

**UN number**

**UN proper shipping name**

**Transport hazard class(es)**

**Packing group**

**Environmental hazards**

**Special precautions for user**

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## SECTION 15. REGULATORY INFORMATION

### Safety, health and environmental regulations/legislation specific for product

**US:**  
Toxic Substances Control Act (TSCA)  
Comprehensive Response Compensation, and Liability Act (CERCLA)  
Superfund Amendments And Reauthorization Act (SARA)  
**Canada:**  
Canadian Environmental Protection Act (CEPA)  
Workplace Hazardous Materials Information System (WHMIS)  
**Europe:**  
Classification, Labelling and Packaging Regulation (EC) 1272/2008  
**United Kingdom:**  
Chemicals (Hazard Information and Packaging) for Supply Regulations 2009 (CHIP4)

### Federal Regulations (US)

**TSCA (Toxic Substances Control Act) Section 8b – Inventory Status:**  
All chemical substances in this product are included on or exempted from listing on the TSCA Inventory of Chemical Substances.  
**TSCA (Toxic Substances Control Act) Section 12b – Export Notification:**  
All chemicals comprising this product are not subject to TSCA Section 12b export notification.  
**CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT)**  
Product is not classified as hazardous or reportable under this requirement.  
**SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)**  
Product is not classified as hazardous or reportable under this requirement.  
**Section 311/312 HAZARD CATEGORIES**  
Materials in this product are classified as hazardous or reportable under this requirement.

### State Regulations (US)

**Section 313**  
Materials in this product are not classified as hazardous or reportable under this requirement.  
Materials in this product appear on the following state hazardous substance lists:  
CA, IN, KY, MA, MN, NC, NJ, OR, PA. Check individual state requirements.

#### California Proposition 65

This product does not contain a chemical known to the state of California to cause cancer.

Chemical	CAS No	% Wt
None	Not applicable	Not applicable

### International Regulations (Canada)

#### Controlled Products Regulations

This product has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

#### Canadian Domestic Substance List (DSL)

All chemical substances in this product are exempt from, or included on, the Domestic Substances List.

#### WHMIS Ingredient Disclosure List

Chemical	CAS No.	% Wt
Amorphous silica	7631-86-9	≥1

#### WHMIS Classifications

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and is not a controlled material.

### International Regulations (Europe and UK)

This product is not classified as a dangerous mixture as defined in the Classification, Labelling and Packaging Regulation (EC) 1272/2008 and the Chemicals (Hazard Information and Packaging) for Supply Regulations 2009 (CHIP4).

### Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out.

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## SECTION 16. OTHER INFORMATION

<b>Key to abbreviations and acronyms</b>	1999/45/EC ACGIH ADR  CAS No CHIP 4 CLP CMR DNEL EC <sub>50</sub> EC No ECHA EH40 (2005) GHS GHS09 HMIS HSE IARC LC <sub>50</sub> LD <sub>50</sub> LTEL µg/l mg/kg mg/l mg/m <sup>3</sup> N NFPA NIOSH NTP OSHA PBT PEL PNEC REACH  STEL STP TLV TRGS  TWA vPvB WEL WHMIS	EU Dangerous Preparations Directive American Conference of Governmental Industrial Hygienists, Inc. (US) European agreement governing the international carriage of dangerous goods by road  Chemical Abstracts Service Registry Number The Chemical (Hazard Information and Packaging for Supply) Regulations 2009 Classification, Labelling and Packaging Regulation (EC) 1272/2008 Carcinogen, Mutagen, Reprotoxin Derived No Effect Level Concentration of a material that induces a 50% effect in the test subjects European Inventory of Chemical Substances number European Chemicals Agency HSE's list of Workplace Exposure Limits, as updated and amended Globally Harmonised System for classification and labelling chemicals Pictogram – Environment Hazardous Materials Identification System Health and Safety Executive (UK) International Agency for Research on Cancer Concentration of a material in air that kills 50% of the test subjects Amount of a solid or liquid material that kills 50% of test subjects Long Term Exposure Limit micrograms per litre milligrams per kilogram milligrams per litre milligrams per cubic metre Dangerous for the Environment National Fire Protection Association The National Institute for Occupational Safety and Health (US) National Toxicology Program Occupational Health & Safety Administration (US) Persistent, Bioaccumulative and Toxic Permissible Exposure Limit Predicted No Effect Concentration Registration, Evaluation and Authorisation of Chemicals Regulation (EC) 1907/2006 Short Term Exposure Limit Sewage Treatment Plant Threshold Limit Value Technischen Regeln für Gefahrstoffe (Technical Rules for Hazardous Substances, Germany) Time Weighted Average very Persistent, very Bioaccumulative Workplace Exposure Limit Workplace Hazardous Materials Identification System
<b>Sources of data</b>	REACH Registration dossiers, suppliers' Safety Data Sheets, EH40(2005), TRGS, GESTIS-database, ACGIH, OSHA	
<b>Methods used to evaluate information used for classification</b>	Annex I, Classification, Labelling and Packaging Regulation (EC) 1272/2008	
<b>Key to Hazard Statements in Section 3</b>	H411 Toxic to aquatic life with long lasting effects.	

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## SECTION 16. OTHER INFORMATION

**Key to Risk Phrases in Section 3**      R51/53      R51/53 Dangerous for the environment; Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**DISCLAIMER:** The information herein is presented in good faith and believed to be accurate as of the effective data given. However, no warranty, expressed or implied, is given. Users are urged to consult the primary documents referenced here and evaluate them for relevance to their actual use of the product. It is the users' responsibility to ensure that their activities comply with applicable Federal, State or Provincial, and local laws.

Data sheet prepared by Environmental Science Limited.

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