SECTION 1. IDENTIFICATION OF SUBSTANCE / MIXTURE AND COMPANY / UNDERTAKING

Product Name: PYROGEL® 2250, 3250, 6250, 9250

Product Identifier: PYROGEL® 2250, 3250, 6250, 9250

CAS No. Not applicable  EC No. Not applicable  Index No. Not applicable

Synonym (s) Silica aerogel material

REACH Registration Number: Not applicable. Aerogel insulation blankets are considered to be an article, not a substance or mixture, under the REACH Regulation.

Relevant identified uses and uses advised against

Industrial and Professional: High performance insulation material.

Consumer: Not applicable.

Avoid any use: None reported.

Details of the supplier Aspen Aerogels, Inc.

30 Forbes Road
Northborough MA 01532

Telephone: (508) 691-1111

e-mail address FHS@aerogel.com

Emergency Telephone number

800-535-5053 US (INFOTRAC)
352-323-3500 INTERNATIONAL

SECTION 2. HAZARDS IDENTIFICATION

Classification (EC 1272/2008) Product is not classified as a hazardous material.

Classification (1999/45/EC / CHIP) Product is not classified as a hazardous material.

Label Elements: No pictogram required

Signal Word Not applicable

Hazard Statements Not applicable

Precautionary Statements Not applicable

Supplemental information None reported.

Other hazards 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.

<table>
<thead>
<tr>
<th>NFPA HAZARD CLASSIFICATION</th>
<th>HMIS HAZARD CLASSIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>Health</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Flammability</td>
<td>Flammability</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Reactivity</td>
<td>Reactivity</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>Protection</td>
</tr>
<tr>
<td>Not applicable</td>
<td>Please refer to Section 8.</td>
</tr>
</tbody>
</table>
SECTION 4. FIRST AID MEASURES

Description of first aid measures
Take measures to avoid further contamination or contact. Remove contaminated clothing immediately, to be washed before reuse.

Inhalation
Remove to fresh air. Drink water to clear throat and blow nose to remove dust. If necessary seek medical advice.

Skin contact
Clean areas of skin affected with soap and plenty of water.

Eye contact
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.

Ingestion
No first aid treatment required.

Most important symptoms and effects, both acute and delayed
Irritation of the throat and upper respiratory tract, irritation of skin and eyes.
Excessive inhalation of dust may aggravate pre-existing chronic lung conditions. Dermal contact may aggravate existing dermatitis.

Indication of any immediate medical attention and special treatment needed
None reported.

SECTION 5. FIRE FIGHTING MEASURES

General hazard
THE PRODUCT IS NON-COMBUSTIBLE

Extinguishing media
To suit local surroundings (e.g. water spray, carbon dioxide, foam, chemical powder)

Extinguishing media not to be used
None reported.

Special hazards arising from the substance or mixture
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 causing re-ignition in the presence of oxygen if heat is not removed.

Advice for fire-fighters
Wear self-contained breathing apparatus.
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.

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.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTEL (TWA):</td>
<td>ppm</td>
<td>15 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEL data for silica, amorphous, total dust, OSHA</td>
</tr>
<tr>
<td>LTEL (TWA):</td>
<td>ppm</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEL data for silica, amorphous, respirable fraction, OSHA</td>
</tr>
<tr>
<td>LTEL (TWA):</td>
<td>ppm</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data for silica, amorphous, inhalable, ACGIH</td>
</tr>
<tr>
<td>LTEL (TWA):</td>
<td>ppm</td>
<td>3 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data for silica, amorphous, respirable, ACGIH</td>
</tr>
<tr>
<td>LTEL (8 hour TWA):</td>
<td>ppm</td>
<td>6 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WEL data for silica, amorphous, inhalable dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EH40 (2005)</td>
</tr>
<tr>
<td>LTEL (8 hour TWA):</td>
<td>ppm</td>
<td>2.4 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WEL data for silica, amorphous, respirable dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EH40 (2005)</td>
</tr>
<tr>
<td>LTEL (8 hour TWA):</td>
<td>ppm</td>
<td>4 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data for silica, amorphous, inhalable fraction,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TRGS 900</td>
</tr>
</tbody>
</table>

Derived No Effect Levels (DNEL) not available for product or ingredients.
SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Predicted No Effect Concentration (PNEC) not available for product or ingredients.

Engineering controls
Provide local exhaust ventilation.

Personal protection
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).

Eye protection
Safety glasses or chemical goggles

Skin protection
Nitrile gloves
Disposable coveralls

Respiratory protection
Dust masks, NIOSH or CE-approved respirator or air fed visor (if ventilation is insufficient).

Other personal protection
None reported.

Environmental exposure controls
Do not allow to get into waste water or waterways.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical form
Fabric blanket

Colour
Black

Odour
Faint ammonia

Odour threshold
0.6–53ppm

Molecular weight
Not applicable

Molecular formula
Not applicable

pH
Not applicable

Melting pt / range
Not applicable

Boiling pt / range
Not applicable

Flash point
Not applicable

Relative Evaporation Rate
Not applicable

General Flammability
NON-COMBUSTIBLE

Flammability/explosive limits
Not applicable

Vapour pressure
Not applicable

Vapour Density
Not applicable
SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Relative Density
Not applicable

Solubility
Insoluble in water

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
None reported.

Hazardous decomposition products
None reported.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Target organs: respiratory system, eyes, skin.
Routes of exposure: inhalation, eye and skin contact.

Acute toxicity - oral
LD₅₀ >5,000mg/kg Data for synthetic amorphous silica

Acute toxicity - inhalation
LC₃₀ >2,000mg/m³ Data for synthetic amorphous silica

Acute toxicity - dermal
LD₅₀ >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.
SECTION 11. TOXICOLOGICAL INFORMATION

**CMR effects**

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH</th>
<th>NTP</th>
<th>IARC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amorphous silica</td>
<td>NA</td>
<td>Not Listed</td>
<td>3</td>
</tr>
<tr>
<td>Oxidized polyacrylonitrile fiber</td>
<td>NA</td>
<td>Not Listed</td>
<td>None</td>
</tr>
<tr>
<td>Proprietary Opacifier</td>
<td>A4</td>
<td>Not Listed</td>
<td>None</td>
</tr>
</tbody>
</table>

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

**Carcinogenicity**: 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**
Inhalation of excessive amounts of dust from the product may cause mechanical irritation to the respiratory tract including, but not limited to, bronchitis, emphysema, and asthma. Dermal contact may aggravate existing dermatitis.

**Other information**
None reported.

SECTION 12. ECOLOGICAL INFORMATION

**Toxicity**
Product is insoluble and inert.

**Fish, acute**
LC\textsubscript{50} (*Danio rerio*) >10,000 mg/l/96H Data for synthetic amorphous silica

**Fish, chronic**
No data available for product.

**Invertebrates**
EC\textsubscript{50} (*Daphnia magna*) >10,000 mg/l/24H Data for synthetic amorphous silica

**Algae**
No data available for product.

**Soil organisms**
No data available for product.

**Micro-organisms**
No data available for product.

**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.
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

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
### Safety Data Sheet

**Product Name** | PYROGEL® 2250, 3250, 6250, 9250

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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.

**State Regulations (US)**

- **Section 311/312 HAZARD CATEGORIES**
  Materials in this product are classified as hazardous or reportable under this requirement.

- **Section 313**
  Materials in this product are classified as hazardous or reportable under this requirement.

**State Regulations (US)**

- **California Proposition 65**
  This product does not contain a chemical known to the state of California to cause cancer:

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS No.</th>
<th>% Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amorphous silica</td>
<td>7631-86-9</td>
<td>≥1</td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS No.</th>
<th>% Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amorphous silica</td>
<td>7631-86-9</td>
<td>≥1</td>
</tr>
</tbody>
</table>

**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.
## SECTION 16. OTHER INFORMATION

### Key to abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999/45/EC</td>
<td>EU Dangerous Preparations Directive</td>
</tr>
<tr>
<td>ACGIH</td>
<td>American Conference of Governmental Industrial Hygienists, Inc. (US)</td>
</tr>
<tr>
<td>ADR</td>
<td>European agreement governing the international carriage of dangerous goods by road</td>
</tr>
<tr>
<td>CAS No</td>
<td>Chemical Abstracts Service Registry Number</td>
</tr>
<tr>
<td>CHIP 4</td>
<td>The Chemical (Hazard Information and Packaging for Supply) Regulations 2009</td>
</tr>
<tr>
<td>CLP</td>
<td>Classification, Labelling and Packaging Regulation (EC) 1272/2008</td>
</tr>
<tr>
<td>CMR</td>
<td>Carcinogen, Mutagen, Reprotoxin</td>
</tr>
<tr>
<td>DNEL</td>
<td>Derived No Effect Level</td>
</tr>
<tr>
<td>EC50</td>
<td>Concentration of a material that induces a 50% effect in the test subjects</td>
</tr>
<tr>
<td>EC No</td>
<td>European Inventory of Chemical Substances number</td>
</tr>
<tr>
<td>ECHA</td>
<td>European Chemicals Agency</td>
</tr>
<tr>
<td>EH40 (2005)</td>
<td>HSE’s list of Workplace Exposure Limits, as updated and amended</td>
</tr>
<tr>
<td>GHS</td>
<td>Globally Harmonised System for classification and labelling chemicals</td>
</tr>
<tr>
<td>HMIS</td>
<td>Hazardous Materials Identification System</td>
</tr>
<tr>
<td>HSE</td>
<td>Health and Safety Executive (UK)</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>LC50</td>
<td>Concentration of a material in air that kills 50% of the test subjects</td>
</tr>
<tr>
<td>LD50</td>
<td>Amount of a solid or liquid material that kills 50% of test subjects</td>
</tr>
<tr>
<td>LTEL</td>
<td>Long Term Exposure Limit</td>
</tr>
<tr>
<td>µg/l</td>
<td>micrograms per litre</td>
</tr>
<tr>
<td>mg/kg</td>
<td>milligrams per kilogram</td>
</tr>
<tr>
<td>mg/l</td>
<td>milligrams per litre</td>
</tr>
<tr>
<td>mg/m³</td>
<td>milligrams per cubic metre</td>
</tr>
<tr>
<td>NFPA</td>
<td>National Fire Protection Association</td>
</tr>
<tr>
<td>NIOSH</td>
<td>The National Institute for Occupational Safety and Health (US)</td>
</tr>
<tr>
<td>NTP</td>
<td>National Toxicology Program</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Health &amp; Safety Administration (US)</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>PEL</td>
<td>Permissible Exposure Limit</td>
</tr>
<tr>
<td>PNEC</td>
<td>Predicted No Effect Concentration</td>
</tr>
<tr>
<td>REACH</td>
<td>Registration, Evaluation and Authorisation of Chemicals Regulation (EC) 1907/2006</td>
</tr>
<tr>
<td>STEL</td>
<td>Short Term Exposure Limit</td>
</tr>
<tr>
<td>STP</td>
<td>Sewage Treatment Plant</td>
</tr>
<tr>
<td>TLV</td>
<td>Threshold Limit Value</td>
</tr>
<tr>
<td>TRGS</td>
<td>Technischen Regeln für Gefahrstoffe (Technical Rules for Hazardous Substances, Germany)</td>
</tr>
<tr>
<td>TWA</td>
<td>Time Weighted Average</td>
</tr>
<tr>
<td>vPvB</td>
<td>very Persistent, very Bioaccumulative</td>
</tr>
<tr>
<td>WEL</td>
<td>Workplace Exposure Limit</td>
</tr>
<tr>
<td>WHMIS</td>
<td>Workplace Hazardous Materials Identification System</td>
</tr>
</tbody>
</table>

### Sources of data

- REACH Registration dossier, suppliers’ Safety Data Sheets, EH40(2005), TRGS, ACGIH, OSHA
- Annex I, Classification, Labelling and Packaging Regulation (EC) 1272/2008

### Methods used to evaluate information used for classification

- Annex I, Classification, Labelling and Packaging Regulation (EC) 1272/2008

### Key to Hazard Statements in Section 3

- Not applicable

### Key to Risk Phrases in Section 3

- Not applicable
SECTION 16. OTHER INFORMATION

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.  

Printing date 15 Aug. 14