

	<b>SAFETY DATA SHEET</b>	Page: 1/9
		Version: 6
		Date: 3-Aug-2017
		Supersedes: 16-Jun-2017
<b>LyTherm® Refractory Media</b>		<b>LYDALL</b>

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/UNDERTAKING

<b>1.1 Product identifier:</b>	LyTherm® Refractory Media (All grades are listed at the end of the SDS)
<b>1.2 Relevant identified uses of the substance or mixture and uses advised against:</b>	Thermal Barrier Application.
<b>1.3 Details of the supplier of the safety data sheet</b>	
<b>Name:</b>	Lydall Performance Materials, Inc.
<b>Address:</b>	134 Chestnut Hill Road Rochester, NH USA 03867
<b>Telephone number:</b>	1-603-332-4600/4605
<b>Fax number:</b>	1-603-332-9602
<b>E-mail:</b>	info@lydall.com
<b>1.4 Emergency Telephone Number:</b>	1-603-332-4600/4605 (8 AM – 5 PM)
Fax Number:	1-603-332-9602

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1 Classification of the Substance or Mixture

<b>MOST IMPORTANT HAZARD:</b>	The product does not present any hazard for final use. However, where a workplace assessment indicates there is a potential for a combustible dust hazard, the release of product dust during manufacturing or handling, respirable glass wool and ceramic fibers may be released and result in the classification of the product as hazardous.
<b>Adverse human health effects:</b>	Product dust may be irritating to eyes, skin and respiratory system. Prolonged inhalation of respirable glass wool and ceramic fibers is suspected to cause cancer.
<b>Environmental effects:</b>	Presents no particular risk to the environment, provided the recommendations concerning disposal (see section 13) and any applicable national or local regulations are complied with.
<b>Physical and chemical hazards - Fire or explosion:</b>	May form combustible dust concentrations in air during processing.
<b>Classification of the product:</b>	According to European regulations (67/548/EEC), this product is classified as Manufactured Article
<b>OSHA/CLP/GHS Classification:</b>	Carcinogen Category 1B Combustible dust
<b>EU Classification (67/548/EEC):</b>	Carc. Cat 2, T R49 (Dust generated from processing)

## LyTherm® Refractory Media

**LYDALL**

### 2.2 Label Elements

#### - Hazard pictograms:



#### - Signal words:

#### - Hazard statements:

#### - Precautionary statements:

**Danger!** Contains refractory ceramic fiber respirable size  
H350: May cause cancer by inhalation  
May form combustible dust concentrations in air during processing.  
P201: Obtain special instructions before use  
P202: Do not handle until all safety precautions have been read and understood  
P280: Wear eye protection, protective clothing, and protective gloves.  
P308+P313: IF exposed or concerned: Get medical advice  
P501: Dispose of container and contents to approved disposal site in accordance with all local and national regulations.

### 2.3 Other Hazards:

None.

Refer to Section 16 for Full Text of EU Classes and R Phrases.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Substance name	Contents	CAS No.	EINECS No.	Classification
Refractories, Fibers, Aluminosilicate	0-95%	142844-00-6	604-314-4	Carc. Cat 2; T R49 Carc. 1B H350
Aluminum Oxide (fibrous) polycrystalline	0-94%	1344-28-1	215-691-6	Carc. Cat 3, Xi, R38, R40 Carc. 2 H351
Polymer Binder	0-15%	Proprietary	Proprietary	Not classified as dangerous
Special Purpose Glass Fiber Respirable Size	0-10%	65997-17-3	266-046-0	Carc. Cat 3, Xi, R38, R40 Carc. 2 H351

See Section 16 for full text of GHS and EU Classifications.

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of First Aid Measures

#### Eye contact:

Do not rub your eyes. Dust particles may cause abrasive eye injury. Flush eyes with water, holding the eyelids apart for several minutes. Get medical attention if irritation persists.

#### Skin contact:

Do not rub or scratch. Rinse exposed skin with cold water then wash skin with soap and water. Do not use hot water as that opens skin pores and may increase fiber penetration and irritation. Remove contaminated clothing and launder before re-use. Get medical attention if irritation persists.

**LyTherm® Refractory Media**

**LYDALL**

**Inhalation:** Remove victim to fresh air. Drink water to clear throat and blow nose to remove dust. Get medical attention if irritation persists.

**Ingestion:** If small quantities are swallowed, rinse out mouth with water. Drink plenty of water to help reduce irritation. If large amounts are swallowed or if irritation or discomfort occurs, get medical attention.

**4.2 Most Important symptoms and effects, both acute and delayed:** May cause eye irritation. May cause mild skin and respiratory irritation. Suspected of causing cancer.

**4.3 Indication of any immediate medical attention and special treatment needed:** No immediate treatment is normally required.

See Section 11 for more detailed information on health effects.

**SECTION 5: FIREFIGHTING MEASURES**

**5.1 Extinguishing Media:** Use water, water fog, carbon dioxide, foam or dry chemical.

**5.2 Special Hazards Arising from the Substance or Mixture:** This product is not classified as flammable or combustible. However, where a workplace assessment indicates there is a potential for a combustible dust hazard: Dust generated in cutting or other processing of this material may present a potential fire and explosion hazard if suspended in air at high concentrations. Settled dust presents a fire hazard. Re-suspension of the dust into the air by vibration, traffic, material handling, etc. in high concentrations in the presence of an ignition source could result in a dust explosion. Minimize the generation and accumulation of dust.

**5.3 Advice for Fire-Fighters:** Firefighters should wear full emergency equipment and NIOSH approved positive pressure self-contained breathing apparatus for all fires involving chemical products.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**6.1 Personal Precautions, Protective Equipment and Emergency Procedures:** Wear appropriate protective clothing and equipment (see section 8). Avoid contact with skin, eyes or clothing. Do not breathe dust.

**6.2 Environmental Precautions:** Avoid release to the environment.

**6.3 Methods and Material for Containment and Cleaning Up:** Pick up material and place into a container for disposal. Where a workplace assessment indicates there is a potential for a combustible dust hazard: Wet down and collect in a manner to minimize the generation of airborne dusts or vacuum with a high efficiency vacuum cleaner. If a vacuum is used, explosion proof equipment is required. Nonsparking tools should be used. Dust deposits should not be allowed to accumulate on surfaces, as these may form an

## LyTherm® Refractory Media

## LYDALL

explosive mixture if they are released into the atmosphere in sufficient concentrations. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

**6.4 Reference to Other Sections:**

Refer to Section 8 for personal protective equipment and Section 13 for disposal information.

### SECTION 7: HANDLING and STORAGE

**7.1 Precautions for Safe Handling**

Avoid contact with eyes, skin and clothing. Avoid creating and breathing dusts. Wear protective clothing and equipment as described in Section 8. Use only with adequate ventilation. Do not eat, drink or smoke when using this material. Launder contaminated clothing before re-use. Wash thoroughly with soap and water after handling. Minimize the generation and accumulation of dust. Where a workplace assessment indicates there is a potential for a combustible dust hazard: Keep dust away from open flames, hot surfaces and sources of ignition. Follow good housekeeping practices to keep surfaces, including areas overhead such as piping, drop ceilings, ductwork, etc. free from settled dust. Dry powders can build static electricity charges when subjected to friction of transfer and in mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.

Empty containers retain product residues. Follow all SDS precautions in handling empty containers.

**7.2 Conditions for Safe Storage, Including any Incompatibilities:**

Store in a dry, well-ventilated area.

**7.3 Specific end use(s):**

Filter media for the manufacture of air filters.

### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1 Control Parameters:**

Refractories, Fibers, Aluminosilicate	5 mg/m <sup>3</sup> (respirable) 15 mg/m <sup>3</sup> (total dust) TWA OSHA PEL 0.2 f/cc TWA ACGIH TLV 0.5 f/cc TWA RCFC* recommended 1 fibre/mL TWA UK OEL 0.1 fibre.cm <sup>3</sup> VME France 0.25 respirable fibers/mL Germany
Aluminum Oxide (fibrous) polycrystalline	5 mg/m <sup>3</sup> (respirable) 15 mg/m <sup>3</sup> (total dust) TWA OSHA PEL 0.5 f/cc TWA manufacturer recommended
Polymer Fiber and Binder (as particulates not otherwise classified)	5 mg/m <sup>3</sup> (respirable) 15 mg/m <sup>3</sup> (total dust) TWA OSHA PEL
Special Purpose Glass Fiber Respirable Size	5 mg/m <sup>3</sup> (respirable) 15 mg/m <sup>3</sup> (total dust) TWA OSHA PEL 1 f/cc TWA OSHA HSP* 1 f/cc TWA ACGIH TLV 5 mg/m <sup>3</sup> or 2 fibre/mL TWA UK OEL 1 fibre.cm <sup>-3</sup> VME France 0.25 respirable fibers/mL Germany

## LyTherm® Refractory Media

**LYDALL**

\* HSPP = OSHA voluntary Health and Safety Partnership Program  
Note: If not listed above, refer to local regulations for specific country exposure limits

### 8.2 Exposure Controls:

#### - Engineering Measures:

Use with adequate local exhaust ventilation to minimize exposures. Provide local exhaust ventilation where product is cut or processed in a manner that generates dust. Where a workplace assessment indicates there is a potential for a combustible dust hazard: It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust handling systems (such as exhaust ducts, dust collectors, vessels and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e. there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks.

#### - Respiratory Protection:

If the occupational exposure limits are exceeded or irritation is experienced, wear an approved particulate respirator. Selection of respiratory protection depends on the contaminant type, form and concentration. Select and use in accordance with all applicable regulations (in the US follow OSHA 1910.134) and good Industrial Hygiene practice.

#### - Hand Protection:

Wear protective gloves to minimize skin contact. Barrier creams may be useful in reducing irritation.

#### - Eye/face Protection:

Wear safety glasses with side shields or dust proof goggles.

#### - Other Protective Clothing or Equipment:

Clothing with long sleeves and pants should be worn to avoid skin contact. Washing facilities should be available in the work area. Work clothing should be laundered separately from normal clothing.

## SECTION 9: PHYSICAL and CHEMICAL PROPERTIES

### 9.1 Information on basic Physical and Chemical Properties

<b>Appearance:</b>	White bonded web.
<b>Odor:</b>	Odorless.
<b>Odor Threshold:</b>	Not determined
<b>pH:</b>	Not applicable
<b>Melting/Freezing Point:</b>	>700°C (>1,292°F) (glass fiber)
<b>Boiling Point:</b>	Not applicable
<b>Flash Point:</b>	Not applicable
<b>Evaporation Rate:</b>	Not applicable
<b>(n-butylacetate =1)</b>	
<b>% Volatile by Volume:</b>	0%
<b>Lower Flammability Limit:</b>	Not applicable
<b>Upper Flammability Limit:</b>	Not applicable
<b>Vapor Pressure:</b>	Not applicable
<b>Vapor Density(Air=1):</b>	Not applicable
<b>Solubility:</b>	Insoluble
<b>Autoignition</b>	Not applicable

LyTherm® Refractory Media

LYDALL

<b>Temperature:</b>	
<b>Decomposition Temperature:</b>	Not determined
<b>Viscosity:</b>	Not applicable
<b>Explosive Properties:</b>	If assessed as a combustible dust hazard: High concentrations of dust in the presence of an ignition source could result in a dust explosion.
<b>Oxidizing Properties:</b>	Not applicable
<b>Specific Gravity (H<sub>2</sub>O= 1):</b>	Not determined
<b>Molecular Formula:</b>	Not determined
<b>Molecular Weight:</b>	Not determined

9.2 Other Information: None.

SECTION 10: STABILITY and REACTIVITY

<b>10.1 Reactivity:</b>	This material is not reactive under normal conditions.
<b>10.2 Chemical Stability:</b>	Stable
<b>10.3 Possibility of Hazardous Reactions:</b>	Will not occur.
<b>10.4 Conditions to Avoid:</b>	Avoid dust formation.
<b>10.5 Incompatible Materials:</b>	Avoid strong acids.
<b>10.6 Hazardous Decomposition Products:</b>	Thermal decomposition of polymer binder will generate oxides of carbon, fluorine, hydrogen fluoride and various hydrocarbons.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects:  
Potential Health Effects:

<b>Eye Contact:</b>	Dust may cause mechanical irritation and possible injury.
<b>Skin Contact:</b>	Dust may cause mechanical irritation.
<b>Inhalation:</b>	Dust may cause nose, throat and upper respiratory tract irritation. Symptoms include coughing, sneezing and scratchy throat.
<b>Ingestion:</b>	May cause irritation of the mouth and intestinal tract.
<b>Acute toxicity:</b>	No specific data is available
<b>Skin corrosion/irritation:</b>	Not a skin corrosive.
<b>Eye damage/irritation:</b>	Dust may cause mechanical irritation and possible injury.
<b>Respiratory Irritation:</b>	Dust may be irritating to the respiratory system.
<b>Respiratory Sensitization:</b>	Not a respiratory sensitizer.
<b>Skin Sensitization:</b>	Not a skin sensitizer.
<b>Germ Cell Mutagenicity:</b>	Not classified a germ cell mutagen.
<b>Carcinogenicity:</b>	Glass wool including special purpose glass fibers (respirable size) are classified by NTP as reasonably anticipated to be a carcinogen. IARC has classified special purpose glass fibers as group 2B, possibly carcinogenic to humans. ACGIH has classified special purpose glass fibers as A3, confirmed animal carcinogen with

## LyTherm® Refractory Media

## LYDALL

unknown relevance to humans. Mineral wool (special purpose glass fibers) is classified as a category 3 carcinogen in the EU CLP. OSHA has not classified special purpose glass fibers. Ceramic fibers (respirable size) are classified by NTP as reasonably anticipated to be a carcinogen. IARC has classified refractory ceramic fibers as group 2B, possibly carcinogenic to humans. Refractory ceramic fibers are classified as a category 2 carcinogen in the EU CLP. Both IARC and NTP have classified respirable crystalline silica as a known human carcinogen. ACGIH has classified refractory ceramic fibers and cristobalite as A2, suspected human carcinogens. OSHA has not classified ceramic fibers or crystalline silica. None of the other components is classified as a carcinogen by IARC, NTP, ACGIH or OSHA. None of the other components is classified as a carcinogen by IARC, NTP, ACGIH, OSHA or the EU CLP.

**Specific Target Organ Toxicity:**

Single Exposure: No data available.

Repeat Exposure: No data available.

### SECTION 12: ECOLOGICAL INFORMATION

**12.1 Toxicity:**

No data available.

**12.2 Persistence and degradability:**

No data available.

**12.3 Bioaccumulative Potential:**

No data available.

**12.4 Mobility in Soil:**

No data available.

**12.5 Results of PVT and vPvB assessment:**

Not required.

**12.6 Other Adverse Effects:**

None.

### SECTION 13: DISPOSAL CONSIDERATIONS

**13.1 Waste Treatment Methods:**

Dispose in accordance with local, state and national regulations.

### SECTION 14: TRANSPORTATION INFORMATION

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Hazard Class(s)	14.4 Packing Group	14.5 Environmental Hazards
US DOT	N/A	Not classified for transport	N/A	N/A	N/A
Canadian TDG	N/A	Not classified for transport	N/A	N/A	N/A
EU ADR/RID	N/A	Not classified for transport	N/A	N/A	N/A
IMDG	N/A	Not classified for transport	N/A	N/A	N/A
IATA/ICAO	N/A	Not classified for transport	N/A	N/A	N/A

**14.6 Special Precautions for User:** None

**14.7 Transport in Bulk According to Annex III MARPOL 73/78 and the IBC Code:** Not determined.

	<b>SAFETY DATA SHEET</b>	Page: 8/9
		Version: 6
		Date: 3-Aug-2017
		Supersedes: 16-Jun-2017
<b>LyTherm® Refractory Media</b>		<b>LYDALL</b>

## SECTION 15: REGULATORY INFORMATION

### 15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

#### U.S. REGULATIONS:

**CERCLA:** This product is not subject to CERCLA reporting requirements. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

#### SARA TITLE III:

**Hazard Category For Section 311/312:** This product is a manufactured article and not subject to reporting.

**Section 313 Toxic Chemicals:** This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None.

**Section 302 Extremely Hazardous Substances (TPQ):** None.

#### U.S. STATE REGULATIONS:

**California Proposition 65:** This product contains special purpose glass fiber and ceramic fibers (airborne particles of respirable size) which are known to the State of California to cause cancer. This product may also contain trace amounts of formaldehyde which is known to the State of California to cause cancer.

#### INTERNATIONAL REGULATIONS:

**RoHS (Restriction on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations):** This product is RoHS compliant.

**EU Labeling:** Finished product is an article and no labeling is required.

**REACH:** This product is an article and not subject to registration.

**Canadian WHMIS:** If dust is generated in processing this dust would be classified as Class D-2-A (eye, skin and respiratory irritant, carcinogen).

#### INTERNATIONAL INVENTORIES

**US Toxic Substances Control Act Inventory (TSCA):** This product is an article and not subject to TSCA.

**EU Chemical Inventory (EINECS)/REACH:** This product is considered an article under EINECS and REACH.

**Australian Inventory of Chemical Substances:** This product is an article and not subject to chemical notification requirements.

**China Inventory of Existing Chemicals and Chemical Substances:** This product is an article and not subject to chemical notification requirements.

**Japanese Existing and New Chemical Substances:** This product is an article and not subject to chemical notification requirements.

	<b>SAFETY DATA SHEET</b>	Page: 9/9
		Version: 6
		Date: 3-Aug-2017
		Supersedes: 16-Jun-2017
<b>LyTherm® Refractory Media</b>		<b>LYDALL</b>

**Korean Existing Chemicals List:** This product is an article and not subject to chemical notification requirements.

**Philippine Inventory of Chemicals and Chemical Substances:** This product is an article and not subject to chemical notification requirements.

**Canadian CEPA New Chemical Notification:** This product is an article and not subject to new chemical notification.

**New Zealand:** This product is an article and not subject to new chemical notification.

## SECTION 16: OTHER INFORMATION

**Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.**

**SDS Date of preparation/revision:** 3-Aug-2017: Added grade 3000-LK.

**Revision History:**

16-Jun-2017: Updated combustible dust statement and removed 800 number.

2-Sep-2016: Added grade 550-LK.

15-Apr-2015: Update to GHS SDS.

2-Mar-2012: Section 1: Product use and product name change. Section 16: Addition of product grades.

EU Classes and Risk Phrases for Reference (See Sections 2 and 3)

Carc Cat 2 Carcinogen Category 2

Carc Cat 3 Carcinogen Category 3

Xi Irritant

R38 Irritating to skin.

R40 Limited evidence of a carcinogenic effect.

R49 May cause cancer by inhalation.

CLP/GHS Classification and H Phrases for Reference (See Section 3)

Carc.1B Carcinogen Category 1B

Carc. 2 Carcinogen Category 2

H351: Suspected of causing cancer.

**Grade List:** 155, 167, 167-1, 196, 550-LF, 550-LJ, 550-LK, 880-LAH, 880-LFH, 880-LJH, 970-LA, 970-LAH, 970-LF, 970-LFH, 970-LJ, 970-LJH, 970-LK, 970-LKH, 971-LAH, 971-LFH, 1530-LA, 1530-LAR, 1530-LF, 1530-LJ, 1530-MI, 1535-GC, 1535-LK, 3000-LF, 3000-LFH, 3000-LJ, 3000-LJH, 3000-LK, Rollboard 1/8, Rollboard 1/10, and Rollboard 1/16.

**Disclaimer**

The information presented on this SDS (1) provides details on material identity, manufacturer/supplier information, hazard characterization and prevention, emergency response and other specialized information, (2) is considered to be accurate to the best of our knowledge, information and belief as of the date of publication, (3) is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release of the material named, (4) should be read and used in conjunction with the company's relevant literature, (5) relates only to the specific material designated and may not be valid for such material used in combination with any other material or process and (6) is provided without warranty, expressed or implied, in law or in fact, of merchantability or fitness for a particular purpose.

**This document does not constitute a product specification and should not be relied on as such.**



## SAFETY DATA SHEET

Page: 10/9

Version: 6

Date: 3-Aug-2017

Supersedes: 16-Jun-2017

**LyTherm® Refractory Media**

**LYDALL**