

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : TPU/TCS COMBUSTOR LINERS

1. Product and Company Identification

Product name: TPU (Thermal Processing Unit)/TCS (Thermal Conditioning System) Combustor Liners
Synonyms: Alzeta Combustor Liner Matrix - trade name Fiberfrax
Item Numbers: A554-01-054 (24 inch Combustor Liner), A554-05-001 (12 inch Combustor Liner),
Y04210309 (12 inch HT Combustor Liner), Y04210517 (12 inch HTA Combustor Liner Spare),
Y04210590 (6 inch HT Combustor Liner Spare),
Y35201093 (6 inch x 7 inch HTA Combustor Liner Spare).

European Contact Details

Edwards, Manor Royal, Crawley
West Sussex, RH10 9LW, England
Email: info@edwardsvacuum.com

General enquiries

UK : +44 (0)1293 528844
France : +(33) 1 47 98 24 01
Germany : +(49) 6420-82-410
Italy : +(39) 0248-4471

US Contact Details

Edwards, Three Highwood Drive, Suite 3-10E,
Highwood Office Park, Tewksbury, MA 01876

General enquiries

+(1) 978-658-5410
Toll Free: 1-800-848-9800

24 h Emergency telephone number:

Chemtrec: 1-800-424-9300

2. Hazards Identification

EMERGENCY OVERVIEW

The liner, when properly handled according to the guidelines and instructions provided with the liner, is not dangerous to human health and the environment.

For short and long term exposure effects, refer to Section 11 Toxicological Information.

Eye Effects: If released from the liner, fibres may be slightly to moderately irritating. Abrasive action may cause damage to the outer surface of the eye.

Skin Effects: Slightly to moderately irritating. Fibres may irritate or penetrate the skin.

Ingestion/Oral Effects: Ingestion of fibres may cause gastro-intestinal disturbances. Symptoms may include irritation, nausea, vomiting and diarrhoea.

Inhalation Effects: Inhaled fibres may cause irritation and possible long-term respiratory health problems: refer to Section 11.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

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NFPA Hazard codes		HMIS Hazard codes		Rating System
Health	0	Health	0	0 = No Hazard
Flammability	0	Flammability	0	1 = Slight Hazard
Instability	0	Reactivity	0	2 = Moderate Hazard
				3 = Serious Hazard
				4 = Severe Hazard

3. Composition/Information on Ingredients

Ingredient	% Weight	CAS No	Hazard class*	Risk phrase*
Aluminosilicate (vitreous)	> 99	142844-00-6	Not applicable	R36/37/38

*Hazard class & Risk phrase. These columns are only completed for ingredients which are classified as hazardous under EU Directive No 1272/2008 (as amended) and are present in sufficient concentration to make the overall substance hazardous. In all other situations, the column will be completed as "Not applicable".

4. First Aid Measures

Eyes:	Flush eyes with large amounts of lukewarm water. If irritation persists, seek medical attention.
Skin:	Wash skin thoroughly with soap and water. If irritation persists, seek medical attention.
Ingestion/Oral:	The product is non-toxic. Ingestion of solid product is not anticipated.
Inhalation:	Acute exposure is not anticipated. If irritation occurs, remove to fresh air. If breathing problems occur, give oxygen or artificial respiration as indicated and seek immediate medical attention.
Other Information:	None.

5. Firefighting Measures

Extinguishing Media:	Not applicable.
Fire and Explosion Hazard:	Not applicable.
Special Protective Equipment for Firefighters:	Firefighters should wear a full face piece Self-Contained Breathing Apparatus (SCBA) which meets appropriate standards operated in positive pressure mode and full turnout gear.

For Flammability Properties - refer to Section 9.

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6. Accidental Release Measures

Accidental release is not expected: the product is a burner liner comprised of fibres. If dusts or fibres are released, clean up spilled materials promptly so that fibres are not dispersed. Wear personal protective equipment appropriate for the magnitude of exposure. Moist towels may be used to remove small amounts of dust. Use a vacuum or wet clean-up methods for larger amounts. Do not use dry sweeping or compressed air to remove dusts from work area.

7. Handling and Storage

Handling: Prevent skin and eye contact with fibres/dust. Prevent inhalation of fibres/dust.

Storage: Store in dry, well ventilated area.

8. Exposure Controls/Personal Protection

Exposure Limits:

Ingredient	ACGIH - TLV	OSHA - PEL	Occupational Exposure Limits EH40 (UK)
Aluminosilicate (vitreous)	1 fibre/cc TWA*	None Established	5 mg/m ³ (2 fibres/ml)

* Fibres longer than 5 µm; diameter less than 3 µm; aspect ratio greater than 5:1 as determined by the membrane filter method at 400-450X magnification (4-mm objective) phase contrast illumination.

Personal Protection:

Engineering Measures: Use local ventilation to control or reduce airborne fibre/dust concentrations. Make eye baths readily available where eye contact with fibres/dust can occur.

Respiratory Protection: Use NIOSH or MSHA approved equipment when airborne exposure limits are exceeded.
NIOSH / MSHA approved breathing equipment may be required for non-routine and emergency use. Ventilation may be used to control or reduce airborne concentrations. Acceptable respirators recommended for airborne ceramic fibre concentrations exceeding 2 fibres/cc are:
Up to 5.0 fibres/cc - 3M 8710 or equivalent
5.0 to 50.0 fibres/cc - Survivair full face piece with high efficiency filter 1090-00 or equivalent
> 50 fibres/cc - MSA 01-00-06 full face piece type C supplied air or equivalent.
OSHA approved air source required.

Hand/Skin Protection: Wear gloves, hats and full body clothing to prevent skin contact.

Eye/Face Protection: Wear safety glasses or chemical goggles to prevent eye contact. Do not wear contact lenses when working with this substance.

Hygiene Measures: Wash thoroughly after handling.
Use separate lockers for work clothes to prevent fibre transfer to street clothes. Avoid taking unwashed work clothes home, or provide disposable work clothing. Wash work clothes separately from outer clothing. Rinse washing machine thoroughly after use. If clothing is to be laundered by someone else, inform them of the necessary proper procedures.

Other/General Protection: None.

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9. Physical and Chemical Properties

Appearance and Odour	Grey fibre - no odour	Melting Point	Not applicable	°C/°F
pH (as supplied)	Not applicable	Freezing Point	Not applicable	°C/°F
Solubility in Water	Not applicable	Auto Ignition	Not applicable	°C/°F
Volatile Content by Volume	Not applicable	Flash Point	Not applicable	°C/°F
Specific Gravity	No data available			
Vapour Pressure (mbar)	Not applicable	Vapour Pressure (Torr)	Not applicable	

10. Stability and Reactivity

Stability:	Stable.
Material/Conditions to Avoid:	None.
Hazardous Decomposition:	None.
Hazardous Polymerisation:	Will not occur.

11. Toxicological Information

For a comprehensive description of the various toxicological (health) effects which may arise if the user comes into contact with the substance or preparation, refer to Section 2 Hazards Identification.

Animal data:

LD50 value:	No data available.
LC50 value:	No data available.

Chronic:

Pending the results of chronic health effects studies, airborne exposures should be controlled at or below the recommended exposure limit of 2 fibres/cc TWA.

Carcinogenicity:

Fibres/dust pose a possible cancer hazard based on tests with laboratory animals. Refractory ceramic fibres have caused increased incidence of lung fibrosis and cancer in hamsters and rats via instillation, but these results have been reproduced in only 1 inhalation study in which rats inhaled high fibre concentrations (145-247 fibres/cc rockwool fibres).

Epidemiological evidence to date does not indicate increased risk of pulmonary fibrosis or respiratory disease in human workers. There is some evidence of increased lung cancer in humans; however, dose response relationships were not evident and confounding factors (such as smoking) may have affected results.

Ceramic fibres, rockwool, slagwool, and glasswool are classified as possibly carcinogenic to humans (Group 2B). The U.S. NTP classifies ceramic fibres and glasswool as substances which are "reasonably anticipated to be human carcinogens".

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12. Ecological Information

No information available.

13. Disposal Considerations

Disposal should be carried out in accordance with all local and national safety and environmental requirements. Account must be taken of any powders which have been in contact with the liner (Silica powder will be a very common one).

14. Transport Information

This product is not classified as dangerous under transport regulations.

PARAMETER	EUROPEAN	CANADIAN TDG	UNITED STATES DOT
Proper Shipping Name	Not applicable	Not applicable	Not applicable
Hazard Class	Not applicable	Not applicable	Not applicable
Identification Number	Not applicable	Not applicable	Not applicable
Shipping Label	Not applicable	Not applicable	Not applicable

15. Regulatory Information

European Regulatory Information

This product has been classified in accordance with EU Regulation No 1272/2008 (as amended) on the Classification, Labelling and Packaging of Substances and Mixtures.

Classified as dangerous to supply: No.

Risk Phrases: R36/37/38 - Irritating to eyes/respiratory system/skin.

Safety Phrases: Not applicable.

Symbols: None.

United States Regulatory Information

Product is a manufactured article not subject to TSCA listing.

California Proposition 65: This product does not contain chemicals known to the State of California to cause cancer or reproductive toxicity.

SARA TITLE III - SECTION 313 SUPPLIER NOTIFICATION:

This product constitutes an "article" and, as such is exempt from SARA 313 reporting requirements (40 CFR Part 372.38, Paragraph B).

OSHA Regulatory Status: Under normal conditions and use, this material is not classified as hazardous by OSHA regulations.

Canadian Regulatory Information

Product is a manufactured article not subject to WHMIS or DSL regulations.

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16. Other Information

This MSDS is compiled in accordance with ANSI Z400.1 and Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Glossary:

ACGIH - American Conference of Governmental Industrial Hygienists; **ANSI** - American National Standards Institute; **Canadian TDG** - Canadian Transportation of Dangerous Goods; **CAS** - Chemical Abstracts Service; **CFR** - Code of Federal Regulations; **Chemtrec** - Chemical Transportation Emergency Center (US); **DSL** - Domestic Substances List; **EEC** - European Economic Community; **EH40 (UK)** - HSE Guidance Note EH40 Occupational Exposure Limits; **EPCRA** - Emergency Planning and Community Right-to-Know Act; **EU** - European Union; **HMIS** - Hazardous Material Information Service; **LC** - Lethal Concentration; **LD** - Lethal Dose; **NFPA** - National Fire Protection Association; **NIOSH** - National Institute for Occupational Safety and Health; **MSHA** - Mine Safety and Health Administration; **NTP** - National Toxicology Program; **OSHA** - Occupational Safety and Health Administration, US Department of Labour; **PEL** - Permissible Exposure Limit; **SARA (Title III)** - Superfund Amendments and Reauthorization Act; **SARA 313** - Superfund Amendments and Reauthorization Act, Section 313; **SCBA** - Self-Contained Breathing Apparatus; **SOHIO** - TBA; **TCS** - Thermal Conditioning System; **TLV** - Threshold Limit Value; **TPU** - Thermal Processing Unit; **TSCA** - Toxic Substances Control Act Public Law 94-469; **TWA** - Time-Weighted Average; **US DOT** - US Department of Transportation; **WHMIS** - Workplace Hazardous Materials Information System.

Revisions:

April 2009 - Data Sheet updated to reflect the latest supplier safety information.

June 2010 - Data Sheet updated to reflect current regulatory information.

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