Induction Melting Repairs Limited

INSULFLEX®

Product: Thermosleeve™ B

MATERIAL SAFETY DATA SHEET

1. Chemical product and Company identification

Emergency contact:	ADL Insulflex, Inc. (address & emergency phone numbers - page 6)
Revised:	June 2008
Chemical family:	Fibrous glass
Formula:	Proprietary mixture
Product description:	White continuous-filament fiberglass yarn woven to produce a hollow sleeve.

2. Composition / Information on ingredients

Product Composition CAS Reg. No.	Approx. % Wt.
A. HAZARDOUS	
Fibrous Glass #65997-17-3	98-100%
Filament (non-respirable)	
Non-respirable filaments & particulate	>98%
Respirable particulate	<1%
Respirable particulate with fiber-like dimensions (glass shards)	<0.002%

3. Hazards identification

Potential health effects:

ACUTE

Fiberglass continuous filament is a mechanical irritant. Breathing dusts and fibers may cause short-term irritation of the mouth, nose and throat. Skin contact with dust and fibers may cause itching and short-term irritation. Eye contact with dust and fibers may cause short term mechanical irritation. Ingestion may cause short term mechanical irritation of the stomach and intestines.

CHRONIC	There are no known chronic health effects connected with long term use or contact with this product. In a lab test of a different product with comparable composition and durability, animals breathing very high concentrations of respirable fibers on a long-term basis developed fibrosis, lung cancer and mesothelioma.
Ingestion:	See below
Medical Conditions Aggravated:	Respiratory or skin conditions that are aggravated by mechanical irritants may be at an increased risk for worsening from exposure to this product.
Sub-chronic (Target Organ) Effects:	None known
Principle Routes of Exposure:	Inhalation, skin, eyes
Other:	

4. First Aid measures

Ingestion:	Ingestion is unlikely. If it does occur, watch person for several days to make sure intestinal blockage does not occur. If there is blockage, seek medical attention.
Skin:	Wash with soap and running water. Do not rub; use a cloth to help remove fibers..
Inhalation:	Move person to fresh air. Seek medical attention if irritation persists.
In case of eye contact:	Flush with water for 15 minutes and get medical attention if irritation persists.
Note to physician:	None known.

5. Fire Fighting measures

Flash point:	None
Auto-ignition temp.	N/A
Flammable limits in air – upper %	None
Sensitivity to mechanical impact:	No
Extinguishing media:	Standard fire-fighting media.
Special fire fighting procedures:	Use self-contained breathing apparatus and full bunker turnout gear in a sustained fire.
Hazardous combustion products:	Primary combustion products are carbon monoxide, carbon dioxide and water.

6. Accidental release measures

Releases of this product to land, water or air may require reporting to the local authorities.

Land spill:	Scoop up material and put into suitable container for disposal as a non-hazardous waste
Water spill:	This material will sink and disperse along the bottom of waterways and ponds. It can not be easily removed after it is waterborne; however, the material is non-hazardous in water.
Air release:	This material will settle out of the air. If concentrated on land it can then be scooped up for disposal as a non-hazardous waste.

7. Handling and storage

Precautions for handling and storage: Normal warehouse conditions.

Ventilation: General dilution ventilation and/or local exhaust ventilation should be provided as necessary to maintain appropriate exposure limits.

8. Exposure controls / Personal protection

Ingredient	OSHA PEL (8-hr TWA)	ACGIH TLV (8-hr TWA)
Fiberglass continuous filament Non-respirable fibers & particulate	15 mg/m^3 (total dust)	5 mg/m^3 (inhalable fraction)
Respirable particulate	5 mg/m^3	3 mg/m^3 (PNOC*)
Respirable particulate with fiber-like dimensions (glass shards)	None established 1 fiber/cc aspect ratio >5:1	
*PNOC	Particles not otherwise classified	

As manufactured, continuous filament glass fibers are not respirable. Continuous filament glass products that are chopped, crushed or severely mechanically processed during manufacturing or use may contain a very small amount of respirable particulate, some of which may be glass shards.

Respiratory protection: A properly fitted NIOSH/MSHA approved disposable dust respirator such as the 3M model 8210 (formerly 8710), or 8271 (formerly 9900) in high humidity environments, or equivalent should be used when: high dust levels are encountered; the level of glass fibers in the air exceeds the occupational exposure limits; or if irritation occurs. Use respiratory protection in accordance with your company's respiratory protection program, local regulations and OSHA regulations under 29 CFR1910.134.

Skin protection: Loose fitting long sleeved shirt that covers to the base of the neck, long pants and gloves. Skin irritation is known to occur chiefly at pressure points such as around neck, wrist, waist and between fingers.

Eye protection: Safety glasses, goggles or face shield.

Work and hygienic practices: Handle using good industrial hygiene and safety practices. Avoid unnecessary exposures by using adequate local exhaust ventilation. Remove material from the skin and eyes after contact. Remove material from clothing using vacuum equipment (never use compressed air).

Always wash work clothes separately from other clothing. Wipe out the washer or sink to prevent loose glass fibers from getting on other clothing.

Keep work area clean of dusts and fibers released during processing or fabrication. Use vacuum equipment to clean up product. Avoid dry sweeping or compressed air use; these techniques re-suspend dusts and fibers in air. Have access to safety showers and eye wash stations.

9. Physical and chemical properties

Boiling point:	N/A
Vapor pressure:	N/A
Vapor density:	N/A
Freezing point:	N/A
Melting point:	N/A
Physical state:	Solid
Odor:	None
Specific gravity:	2.60
pH:	N/A
VOC:	N/A
Solubility in water:	Insoluble

10. Stability and reactivity

Stability:	Stable
Hazardous polymerization:	Will not occur.
Hazardous thermal decomposition/ Combustion products:	Carbon dioxide, carbon monoxide, water. Other undetermined compounds could be released in small quantities.
Materials/conditions to avoid:	None known.

11. Toxicological information

Carcinogenicity: The table below indicates whether or not each agency has listed each ingredient as a carcinogen:

Ingredient	ACGIH	IARC	NTP	OSHA	97/69/EC
Fiber glass continuous Filament[(a)]	A4	3	No	No	No
Size	No	No	No	No	No

ACGIH: A4 not classifiable as a human carcinogen
IARC 3: Not classifiable with respect to human carcinogenicity

(a) Includes: Non-respirable glass particulate, respirable glass particulate, and respirable particulate with fiber-like dimensions (glass shards).

Product Information:

Acute Oral LD50:	Unknown
Acute Dermal LD50:	Unknown
Acute Inhalation LC50:	Unknown
Ames Test:	Unknown

Fiberglass continuous filament

The International Agency for Research on Cancer (IARC) in June, 1987, categorized fiberglass continuous filament as not classifiable with respect to human carcinogenicity (group 3). The evidence from human as well as animal studies was evaluated by IARC as insufficient to classify fiberglass continuous filament as a possible, probable, or confirmed cancer causing material.

The American Conference of Governmental Industrial Hygienists (ACGIH) A4 classification, not classifiable as a human carcinogen, for respirable continuous filament glass fibers is based on inadequate data in terms of its carcinogenicity in humans and/or animals.

For respirable continuous filament glass fibers, a TLV-TWA of 1 fiber/cc was adopted to protect workers against mechanical irritation. The TLV-TWA of 5mg/m^3 was adopted for non-respirable glass filament fiber, measured as inhalable dust, to prevent mechanical irritation to the upper respiratory tract.

Note: There are no known chronic health effects connected with long term use or contact with these products. Products that are chopped crushed or severely mechanically processed during manufacture or use may contain a very small amount of respirable glass fiber-like fragments. NIOSH defines “respirable fibers” as greater than 5 microns in length and less than 3 microns in diameter with an aspect ratio of >=5:1(length to width ratio)

Chronic study in animals

A laboratory test was conducted with a different product (special application glass fiber) with comparable composition a& durability. Test animals breathing very high concentrations of respirable fibers on a long-term basis developed fibrosis, lung cancer and mesothelioma.

About 23% of the rats (n=43) exposed to 1022 f/cc for 5 hrs/day, 7 days/week for 52 weeks developed lung tumors (adenoma and carcinoma). Five percent of the unexposed control group (n=38) developed lung tumors (adenoma and carcinoma).

Five percent of the rats in the exposed group developed mesothelioma and 12.5% developed advanced fibrosis. None of the rats in the unexposed control group developed mesothelioma and 0.6% developed advanced fibrosis.

A second group of rats was exposed to a similar concentration of asbestos (respirable amosite fibers) for 5 hours/day, 7 days/week for 52 weeks. 38% of the rats developed lung tumors (adenoma and carcinoma) and 5% developed mesothelioma. 14.5% developed advanced fibrosis.

Importantly, this result showing similar disease rates for the special application fiber and amosite asbestos, had been predicted in a 1996 scientific paper (Inhal. Tox. 8:323-343, 1996 ref). That paper specifically stated that, in rats, all fibers durable enough to remain in a rat lung for two years or more, would produce the same disease rates if the exposures were the same. While the special application fiber is much less durable than asbestos, it is stable enough to remain in the rat lung for more than a two year time period. The results of the current study are therefore not unexpected, and they do not indicate that similar disease rates would be seen in longer-lived species or humans, exposed to these fibers.

12. Ecological information

This material is not expected to cause harm to animals, plants or fish.

13. Disposal considerations

Disposal method:	Normal methods in accordance with any governmental regulations.
RCRA hazard class:	Non-hazardous

14. Transport information

DOT shipping name:	N/A
DOT hazard class:	None
DOT label:	N/A
UN/NA label:	N/A
Placards:	N/A
IATA:	N/A
IMO IMDG code:	N/A
European class:	
RID (OCTf):	N/A
ADR (ECE):	N/A
RAR (IATA):	N/A

15. Regulatory information

SARA Title III: Hazard Categories:	
Acute health:	Yes
Chronic health:	No
Fire hazard:	No
Pressure hazard:	No
Reactivity hazard:	No
Reportable Ingredients:	
Sec. 302/304:	None
Sec. 313:	None
CPSC classification:	N/A
WHMIS hazard class:	None
Harmonized code:	7019.90
Hazard rating systems	
HMIS:	Flammability 0, Reactivity 0, Health 1
NFPA:	Flammability 0, Reactivity 0, Health 1

16. Other

Users are advised to ensure that this information is brought to the attention of their employees handling the product. The information given herein is believed to be reliable. However, ADL Insulflex, Inc. makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. ADL Insulflex, Inc.'s obligations shall be only as set forth in ADL Insulflex, Inc.'s standard terms and conditions of sale for this product. In no case will ADL Insulflex, Inc. be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product.

Users of ADL Insulflex, Inc. products should make their own evaluation to determine the suitability of each such product for the specific application and to establish safe handling and installation procedures.

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