



**Flexible Lining Systems**

**1-855-545-4900**

9 E Loockerman Street

Dover, DE 19901

## **MATERIAL SAFETY DATA SHEET**

Trade name: Flexible Lining Systems – SLPH-50-A

CHEMICAL FAMILY: ISOCYANATE

TRANSPORTATION EMERGENCY ASSISTANCE / CALL CHEMTREC / 1 (800) 424 – 9300

MANUFACTURER: Flexible Lining Systems  
9 E Loockerman St  
Dover, DE  
19901

### **NFPA HAZARD RATING**

H	2
F	1
R	1
PP	0

DEGREE OF HAZARD: 4=EXTREME 3=HIGH 2=MODERATE 1=SLIGHT 0=INSIGNIFICANT

### **SECTION II (HAZARDOUS SUBSTANCES)**

<b>HAZARDOUS INGREDIENTS</b>	<b>CAS #</b>	<b>% by weight</b>	<b>ACGIH TLV</b>
Diphenylmethane Diisocyanate	26447-40-5	50-60%	Not Listed
Modified MDI	Not Disclosed	20-40%	Not Listed
Proprietary Blend	Not Disclosed	10-15%	Not Listed

\* THIS CHEMICAL IS SUBJECT TO SARA TITLE III, SECTION 313 REPORTING

### **SECTION III (PHYSICAL DATA)**

BOILING POINT: N/A WEIGHT PER GALLON: 9.41 +0.3 lbs.

% VOLATILE BY VOLUME: No data EVAPORATION RATE (ether=1): No data

VAPOR DENSITY (air=1): 8.5 approx. VAPOR PRESSURE: <0.0003 mmHG @ (20°C/68°F)



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## SECTION IV (HEALTH HAZARD DATA)

**Health Hazards:** Irritating to eyes, respiratory system and skin. Inhalation at levels above the occupational exposure limit could cause respiratory sensitization. Risk of serious damage to respiratory system. The onset of the respiratory symptoms may be delayed for several hours after exposure. A hyper-reactive response to even minimal concentrations of MDI may develop in sensitized persons. Sensitized persons should not be exposed to any mixture containing unreacted MDI.

**Physical Hazards:** Reacts slowly with water to produce carbon dioxide, which may rupture closed containers. This reaction accelerates at higher temperatures.

**General:** Polymeric MDI:

Oral LD50 (rat) > 5,000 mg/kg

Dermal LD50 (rabbit) > 5,000 mg/kg

Inhalation LC50 (rat) > 490 mg/ m<sup>3</sup>/4 hour (respirable aerosol)

**Inhalation:** This product is a respiratory irritant and potential respiratory sensitizer. Inhalation of vapor or aerosol at levels above the occupational exposure limit could cause respiratory sensitization and lung injury. Symptoms may include irritation to the eyes, nose, throat, and lungs, possibly combined with dryness of the throat, tightness of chest and difficulty in breathing and/or flu-like symptoms. The onset of the respiratory symptoms may be delayed for several hours after exposure. A hyper-reactive response to even minimal concentrations of MDI may develop in sensitized persons.

**Skin Contact:** Moderate irritant. Repeated and/or prolonged contact may cause skin sensitization. There is limited evidence from animal studies that skin contact may play a role in respiratory sensitization. These results emphasize the need for protective clothing including gloves to be worn at all times when handling these chemicals or in maintenance work.

**Eye Contact:** The aerosol, vapor or liquid will irritate human eyes following contact.

**Ingestion:** Ingestion may cause irritation of the gastrointestinal tract. Based on the acute oral LD50, this product is considered practically non-toxic by ingestion.

**Chronic Effects:** A study was conducted where groups of rats were exposed for 6 hours a day, 5 days a week for a lifetime to atmospheres of respirable polymeric MDI aerosol either at concentrations of 0, 0.2, 1, 6 mg/m<sup>3</sup>. No adverse effects were observed at 0.2 mg/m<sup>3</sup> concentrations. At the 1 mg/m<sup>3</sup> concentrations, minimal nasal and lung irritant effects were seen. Only at the top concentration (6.0 mg/m<sup>3</sup>) there was an increased incidence of a beginning tumor of the lung (adenoma) and on malignant tumor (adenocarcinoma). Overall, the tumor incidence, both benign and malignant, and the number of animals with tumors were not different. The increased incidence of lung tumors is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung. In the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage, it is highly unlikely that a tumor formation will occur.

There are reports that excessive chronic exposure to diisocyanates may result in permanent decrease in lung function.

**Carcinogenicity:** The ingredients of this product are not classified as carcinogenic by ACGIH or IARC, not regulated as carcinogens by OSHA, and not listed as carcinogens by NTP.



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**Mutagenicity:** There is no substantial evidence of mutagenic anticipated.

**Reproductive Effects:** No adverse reproductive effects are anticipated.

**Teratogenicity & Fetotoxicity:** No birth defects were seen in two independent animal (rat) studies. Fetotoxicity was observed at doses that were extremely toxic (including lethal) to the mother. Fetotoxicity was not observed at doses that were not maternally toxic. The doses used in these studies were maximal, respirable concentrations well in excess of the defined occupational limits.

## SECTION V (First Aid Measures)

### First Aid Procedures

**General:** In case of accident or if you feel unwell, seek medical advice IMMEDIATELY (show the label where possible).

**Inhalation:** Remove patient from exposure, keep warm and at rest. Obtain medical attention. Treatment is symptomatic for primary irritation or difficulty in breathing. If breathing is labored, oxygen should be administered by qualified personnel. Apply artificial respiration if breathing has ceased or shows signs of failing.

**Skin Contact:** Remove contaminated clothing. Wash affected areas thoroughly with soap and lukewarm water. If irritation, redness, or a burning sensation develops and persists, obtain medical advice. Contaminated clothing should be thoroughly cleaned before reuse.

**Eye Contact:** Immediately flush eyes with running water for a minimum of 15 minutes. Hold eyelids open during flushing. If irritation persists, repeat flushing eyes. Obtain medical attention IMMEDIATELY.

**Ingestion:** *Do not* induce vomiting. Provided the patient is conscious, wash out mouth with water, then give 1 or 2 glasses of water to drink. Refer person to medical personnel for immediate attention.

**Note to Physician:** Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.

## SECTION VI (REACTIVITY DATA)

**STABILITY:** Stable

**CONDITIONS TO AVOID:** Heat, sparks, open flame and water contamination.

**INCOMPATIBILITY:** Water, alcohols, liquid chlorine, concentrated oxygen, NaOH, amines, alkaline materials and organometallic compounds.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Burning may produce nitrogen oxides, hydrogen cyanide, carbon monoxide and/or carbon dioxide.

**HAZARDOUS POLYMERIZATION:** May occur at elevated temperatures in the presence of alkalis, tertiary amines and metal compounds.



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## **SECTION VII (SPILL OR LEAK PROCEDURES)**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Remove all sources of ignition. In enclosed areas, cleanup personnel should wear self-contained breathing apparatus. Cover spills with sawdust, vermiculite, or other absorbent material. Add an equal volume of a 6% ammonia solution in water and allow to react for 10 minutes. Collect into open containers and add more solution. Cover loosely to vent carbon dioxide gas generated.

**WASTE DISPOSAL METHOD:** Dispose in accordance with local, state, and federal regulations.

## **SECTION VIII (SPECIAL PROTECTION INFORMATION)**

**RESPIRATION PROTECTION:** Use organic vapor canister for low concentrations. Use self-contained breathing apparatus in enclosed areas involving higher vapor concentrations.

**VENTILATION (Local/Mechanical Exhaust):** Explosion proof mechanical equipment capable of keeping vapor concentration below the TLV.

**PROTECTIVE GLOVES:** Chemical resistant neoprene, nitrile-butadiene or butyl rubber gloves.

**EYE PROTECTION:** Safety goggles or face shield.

**OTHER PROTECTIVE EQUIPMENT:** Eye bath & safety shower should be available.

## **SECTION IX (SPECIAL PRECAUTIONS & TOXICOLOGICAL PROPERTIES)**

**SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING & STORING:** Keep containers closed and store in a cool dry place with adequate explosion proof ventilation. Keep away from heat, sparks, open flame and moisture. Open container should be blanketed with dry nitrogen before resealing if there is no moisture contamination. If water contamination is suspected, do not reseal. Ground equipment to prevent accumulation of static charge.

**TOXICOLOGICAL PROPERTIES:** The International Isocyanate Institute is currently sponsoring a lifetime study on polymeric MDI in rats for carcinogenicity. Monomeric MDI is positive for mutagenicity in the Ames assay. Oral LD50 (rats) is greater than 15800 mg/Kg. Dermal LD50 (rabbits) is greater than 7900 mg/Kg. Inhalation LC50 (rats - 2hr) is greater than 400 mg/M3 on dust of monomeric MDI. Harmful or fatal if swallowed. Vapor harmful. May cause skin or eye irritation.