

# X-TREME® SLM PART B

SELF-LEVEL MEMBRANE (SLM)

Tex-Trude, LP urges each customer or recipient of this Safety Data Sheet to study it carefully to become aware of and understand the hazards (or not) that are associated with the product. This (SDS) is applicable to all X-TREME® construction materials manufactured by Tex-Trude, LP regardless of sizes.

**NOTICE:** This product is not FDA, CPSC, or NSF approved. It is unsuitable for use in applications such as direct or indirect food contact, toys, medical device, or pharmaceutical applications or for potable water applications.

## 1. IDENTIFICATION

<b>GHS product identifier</b>	X-TREME SLM - Part B
<b>Other means of identification</b>	Not available
Relevant identified uses of the substance or mixtures and uses advised against component of a polyurethane system	
<b>Supplier's details</b>	Tex-Trude 2001 Sheldon Rd. Channelview, Texas 77530 Phone 281.452.5961 (8:00am - 5:00pm CST)
<b>Emergency telephone number</b>	CHEMTREC, US 1-800-424-9300 International 1-703-527-3887
<b>Hours of operation</b>	24/7

## 2. HAZARDS IDENTIFICATION

<b>OSHA/HCS status</b>	This material is considered hazardous by the OSHA Hazardous Communications Standard (49CFR1910.1200).
<b>Classification of the substance or mixture</b>	Acute toxicity: Inhalation- Category 4 Skin Corrosion/Irritation- Category 2 Serious Eye Damage/Eye Irritation- Category 2B. Respiratory Sensitization- Category 1 Skin Sensitization- Category 1 Specific target organ toxicity ( single exposure) (Respiratory system) - Category 3

**GHS label elements**  
Hazard pictogram



<b>Signal word hazard statement</b>	Danger Harmful if inhaled. Causes skin and eye irritation May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. May cause respiratory irritation.
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### PRECAUTIONARY STATEMENTS

<b>Prevention</b>	Avoid breathing dust/fume/gas/mist/vapors/spray. Wash skin thoroughly after handling. Use only outdoors or in a well ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves. In case of inadequate ventilation wear respiratory protection.
<b>Response</b>	IF INHALED – Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a Poison Center or physician if you feel unwell. If experiencing respiratory symptoms: Call a Poison Center or physician. IF ON SKIN – Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. IF IN EYES – Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
<b>Storage</b>	Store locked up. Store in a well-ventilated place. Keep container tightly closed.
<b>Disposal</b>	Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Hazards not otherwise classified</b>	None known

### 3. COMPOSITION, INFORMATION ON INGREDIENTS

<b>Substance/Mixture</b>	Mixture
<b>Other means of identification</b>	Not available

INGREDIENT NAME	%	CAS #
4,4'-Methylenediphenyl diisocyanate	50 - 70	101-68-8
Diphenylmethanediisocyanate	30 - 50	9016-87-9
Diphenylmethane-2,4'- diisocyanate	10 - 20	5873-54-1

Any concentration shown as a range is to protect confidentiality or is due to batch variation. Occupational exposure limits, if available, are listed in Section 8.

## 4. FIRST AID MEASURES

### DESCRIPTION OF NECESSARY FIRST AID MEASURES

<b>General advise</b>	Move out of dangerous area. Do not leave the victim unattended. Consult a physician. Show this safety data sheet to the doctor in attendance.
<b>Eye contact</b>	In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under eyelids, for at least 15 minutes. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
<b>Inhalation</b>	If breathed in, move person into fresh air. Call a physician or poison control center immediately. Keep patient warm and at rest. Keep respiratory tract clear. If breathing is difficult, give oxygen. If breathing is irregular or stopped, administer artificial respiration. If unconscious, place in recovery position and seek medical advice. Consult a physician immediately if symptoms such as shortness of breath or asthma are observed. A hyperactive response to even minimal concentrations of diisocyanates may develop in sensitized persons. LC50(rat): ca. 490 mg/m <sup>3</sup> (4 hours): using experimentally produced respirable aerosol having aerodynamic diameter < 5 microns.
<b>Skin contact</b>	In case of contact, immediately flush skin with soap and plenty of water. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before reuse. Thoroughly clean shoes before reuse. Call a physician if irritation develops or persists. An MDI study has demonstrated that a polyglycol- based skin cleaner (such as D-Tam <sup>TM</sup> PEG-400) or corn oil may be more effective than soap and water.
<b>Ingestion</b>	Gently wipe or rinse the inside of the mouth with water. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Keep respiratory tract clear. Keep at rest. If a person vomits when lying on his back, place him in the recovery position. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

### MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED

Severe allergic skin reactions, bronchospasms and anaphylactic shock.

### INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED, IF NECESSARY

<b>Notes to physician</b>	Symptomatically treatment and supportive therapy as needed. Following severe exposure, medical follow-up should be monitored for at least 48 hours. The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.
<b>Protection of first-aiders</b>	No action shall be taken involving any personal risk or without suitable training. If potential for exposure exists refer to Section 8 for specific personal protective equipment. First Aid responders should pay attention to self-protection and use the recommended protective clothing. It may be dangerous to the person providing the aid to give mouth to mouth resuscitation.

## 5. FIRE FIGHTING MEASURES

### EXTINGUISHING MEDIA

<b>Suitable extinguishing media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use CO <sub>2</sub> , foam or dry powder.
<b>Unsuitable extinguishing media</b>	High volume water jets.
<b>Specific hazards arising from the chemical</b>	Do not allow run-off from fire-fighting to enter drains or water courses. The pressure in sealed containers can increase under the influence of heat. Exposure to hazardous products may be hazardous to health.
<b>Hazardous thermal decomposition products</b>	Decomposition products may include the following materials: Carbon Monoxide, Carbon Dioxide, nitrogen oxides, hydrocarbons and HCN and unburned hydrocarbon smoke.
<b>Specific extinguishing methods</b>	Cool containers/tanks with water spray.
<b>Special protective equipment for fire fighters</b>	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full-face piece operated in a positive pressure mode.
<b>Remarks</b>	Standard procedure for chemical fires. Due to reaction with water producing CO <sub>2</sub> gas, a hazardous build-up of pressure could result if contaminated containers are re-sealed. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Prevent fire extinguishing water from contaminating surface water or the ground water system. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

## 6. ACCIDENTAL RELEASE MEASURES

### PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

<b>For non emergency personal</b>	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
<b>For emergency responders</b>	Use personal protective equipment. Immediately evacuate personnel to safe area. Ensure adequate ventilation. Keep away from and upwind of spill/leak. Only qualified personnel equipped with suitable protective equipment may intervene. Never return spills in original containers for re-use. Treat recovered material as described in section "Disposal considerations". For disposal considerations see section 13. Make sure there is a sufficient amount of neutralizing/absorbent material near the storage area. The danger areas must be delimited and identified using relevant warning and safety signs.
<b>Environmental precautions</b>	Do not allow uncontrolled discharge of product into the environment. Do not allow material to contaminate ground water system. Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. Local authorities should be advised if significant spillages cannot be contained. If product contaminates rivers and lakes or drains inform respective authorities.

## METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

<b>Clean up methods - small spillage</b>	Dilute with plenty of water. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local/national regulations (See section 13). Clean contaminated surfaces thoroughly. Sweep up or vacuum up spillage and collect in suitable container for disposal. Neutralize small spillages with decontaminate. The compositions of liquid decontaminates are given in section 16. Remove and dispose of residues.
<b>Clean up methods - large spills</b>	If the product is in its solid form: Spilled MDI flakes should be picked up carefully. The area should be vacuum cleaned to remove remaining dust particles completely. If the product is in its liquid form: Absorb spillages with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, saw dust). Leave to react for at least 30 minutes. Shovel into open- top drums for further decontamination. Wash spillage area with water. Test atmosphere for MDI vapors. Keep in suitable, closed containers for disposal.

## 7. HANDLING AND STORAGE

### PRECAUTIONS FOR SAFE HANDLING

<b>Protective measures/Advice on general occupation hygiene</b>	Ensure that eyewash stations and safety showers are close to the workstation location. Use only with adequate ventilation. Normal measures for preventive fire protection. For personal protection see section 8. Avoid formation of aerosol. Do not breath vapors/dust. Avoid exposure-obtain special instruction before use. Avoid contact with skin and eyes. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Open container carefully as contents may be under pressure. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used.
<b>Conditions for safe storage, including any incompatibilities</b>	Keep container tightly closed in a cool, well ventilated place. Observe label precautions. Electrical installations/working materials must comply with technological safety standards.

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters.

### OCCUPATIONAL EXPOSURE LIMITS

INGREDIENT NAME	EXPOSURE LIMITS
4,4'-Methylenediphenyl diisocyanate	ACGIH TLV ( United States, 3/2012) TWA: 0.005 ppm 8 hours OSHA PEL ( United States, 6/2010) CEIL: 0.02 ppm
<b>Protective measures</b>	Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing. The type of protective clothing must be selected according to the concentration and amount of the dangerous substance at the specific work place. Ensure that eye flushing systems and safety showers are located close to the working place.

<b>Hygiene measures</b>	Handle in accordance with good industrial hygiene and safety practices. Wash face, hands and any exposed skin thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating area. When using do not eat or drink. When using do not smoke. Contaminated clothing should not be allowed outside the workplace. Wash hands before breaks and at end of workday.
<b>Eye/face protection</b>	Safety eyewear complying with an approved standard should be used when risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases and dusts. Chemical splash goggles. Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded. Please follow all applicable local/national requirements when selecting protective measures for a specific workplace. Ensure that eyewash stations and safety showers are close to the workstation location.
<b>Respiratory protection</b>	Use a properly fitted, air purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## SKIN PROTECTION

<b>Hand protection</b>	For prolonged or repeated contact use protective gloves. Protective gloves should be worn when handling freshly made polyurethane products to avoid contact with trace residual materials which may be hazardous in contact with skin. Use chemical resistant gloves classified under Standard EN374: protective gloves against chemicals and microorganisms. Examples of gloves material that might prove suitable protection include: Butyl rubber, Chlorinated polyethylene, Polyethylene, Ethyl vinyl alcohol copolymers laminated ("EVAL"), Polychloroprene (Neoprene*), Nitrile/butadiene rubber ("nitrile" or "NBR"), Polyvinyl chloride ("PVC" or "vinyl"), Fluoroelastomer ("Viton"). When prolonged or frequent repeated contact may occur, a glove with protection class 5 or higher (breakthrough time is greater than 240 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with protection class 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended. Contaminated gloves should be decontaminated and disposed of. Notice: The selection of a specific glove for a particular application and duration of use in the workplace should also take into account all requisite workplace factors such as but not limited to: other chemicals that may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), as well as instructions/specifications provided by the glove manufacturer.
<b>Skin and body protection</b>	Impervious clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place. Recommended: Overall (preferably heavy cotton) or Tyvek-Pro Tech "C", Tyvek-Pro "F" disposable coverall.
<b>Respiratory protection</b>	Use a properly fitted, air purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

Physical state	Liquid
Color	Light brown
Odor	Slight, musty
Odor threshold	N/A
pH	N/A
Melting point	N/A
Boiling point	N/A
Flash point	Closed cup: > 110 °C (> 230 °F) [Seta closed cup]
Evaporation Rate	N/A
Flammability (solid, gas)	N/A
Lower & upper explosive (flammable) limits	N/A
Vapor density	N/A
Vapor pressure	N/A
Relative density	1.2 (20 °C)
Density	1.23 g/cm <sup>3</sup> (20 °C)
Solubility-water	N/A
Solubility-other solvents	N/A
Partition coefficient: n- octanol/water	N/A
Auto- ignition temperature	N/A
Decomposition temperature	N/A
SADT	N/A
VOC	N/A
Viscosity	55 mPa s (25 °C)

## 10. STABILITY AND REACTIVITY

**Reactivity** – No dangerous reaction is known under conditions of normal use.

**Chemical stability** – Stable at room temperature.

**Possibility of hazardous reactions** – Reaction with water (moisture) produces CO<sub>2</sub> – gas. Exothermic reaction with materials containing active hydrogen groups. The reaction becomes progressively more vigorous and can be violent at higher temperatures if miscibility of the reaction partners is good or is supported by the presence of solvents. MDI is insoluble with and heavier than water and sinks to the bottom but reacts slowly at the interface. A solid water-insoluble layer of polyuria is formed at the interface by liberating carbon dioxide gas.

**Conditions to avoid** – Extreme of temperatures and direction sunlight. Exposure to air or moisture over prolonged periods.

**Incompatible materials** – Water, amines, metals, bases and acids.

**Hazardous decomposition products** – Combustion products may include: Carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO, NO<sub>2</sub>, etc.), hydrocarbons, dense black smoke and HCN. Burning produces noxious and toxic fumes.

## 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects.

### ACUTE TOXICITY

PRODUCT/INGREDIENT NAME	TEST
4,4'-Methylenediphenyl diisocyanate	LD50 (Rate, male): >10,000 mg/kg Method: OECD Test Guideline 401
	Acute dermal toxicity: LD50 (Rabbit, male and female): >9,400 mg/kg Method: OCED Test Guideline 402
Isocyanic acid, polymethylenepolyphenylene ester	LD50 (Rate, male):>10,000 mg/kg Method: OECD Test Guideline 401
	Acute dermal toxicity: LD50 (Rabbit, male and female): >9,400 mg/kg Method: OCED Test Guideline 402
Diphenylmethane-2,4'- diisocyanate	Acute dermal toxicity: LD50 (Rabbit, male and female): >9,400 mg/kg Method: OCED Test Guideline 402
Acute inhalation toxicity-Product	Acute toxicity estimate: 1.4 mg/l Exposure time: 4 hours Test atmosphere: dust/mist Method: calculation method
Acute toxicity (other routes of administration)	No data available

### IRRITATION/CORROSION

PRODUCT/INGREDIENT NAME	TEST	RESULT
4,4'-Methylenediphenyl diisocyanate	Species: Rabbit Method: OECD Test Guideline 404	Irritating to skin
Diphenylmethanediisocyanate	Species: Rabbit Assessment: Irritating to skin Method: OECD Test Guideline 404	Skin irritation
Diphenylmethane-2,4'- diisocyanate	Species: Rabbit Assessment: Irritant Method: OECD Test Guideline 404	Irritating to skin



**SERIOUS EYE DAMAGE/EYE IRRITATION**

PRODUCT/INGREDIENT NAME	TEST	RESULT
4,4'-Methylenediphenyl diisocyanate	Species: Rabbit	Mild eye irritation
Diphenylmethanediisocyanate	Species: Rabbit Assessment: Mild eye irritant Method: OECD Test Guideline 405	Irritation to eyes, reversing in 7 days Mild eye irritant
Diphenylmethane-2,4'- diisocyanate	Species: Rabbit Assessment: Irritant Method: OECD Test Guideline 405	Irritation to eyes, reversing in 7 days Remark: mild eye irritation

**RESPIRATORY OR SKIN SENSITIZATION**

PRODUCT/INGREDIENT NAME	TEST	RESULT
4,4'-Methylenediphenyl diisocyanate	Exposure routes: Skin Species: Mouse Method: OECD Test Guideline 429	May cause sensitization by skin contact.
	Exposure routes: Respiratory Tract Species: Guinea pig Method: OECD Test Guideline 429	May cause sensitization by inhalation.
Diphenylmethanediisocyanate	Exposure routes: Skin Species: Guinea Pig Method: OECD Test Guideline 406	May cause sensitization by skin contact.
	Exposure routes: Respiratory Tract Species: Rat	May cause sensitization by skin contact.
Diphenylmethane-2,4'- diisocyanate	Exposure routes: Skin Species: Mouse	May cause sensitization by skin contact.
	Exposure routes: Respiratory Tract Species: Guinea pig	May cause sensitization by inhalation.

**COMPONENTS****4,4'-Methylenediphenyl diisocyanate**

Assessment: May cause sensitization by inhalation and skin contact.

**Diphenylmethanediisocyanate**

Assessment: May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Diphenylmethane-2,4'- diisocyanate**

Assessment: Mild eye irritation.

**GERM CELL MUTAGENICITY**

PRODUCT/INGREDIENT NAME	TEST	RESULT
4,4'-Methylenediphenyl diisocyanate	Genotoxicity in vitro Concentration: 200 ug/plate Metabolic activation: with and without metabolic activation Method: Directive 67/548/EEC, Annex, B. 13/14	Negative
	Genotoxicity in vitro Application route: Inhalation Exposure time: 3 weeks Dose: 118 mg/m <sup>3</sup> Method: OECD Test Guideline 474	Negative
Diphenylmethanediisocyanate	Genotoxicity in vitro Concentration: 200 ug/plate Metabolic activation: with and without metabolic activation Method: Directive 67/548/EEC, Annex, B. 13/14	Negative
	Genotoxicity in vitro Not classified due to inconclusive data. Application route: Inhalation Exposure time: 3 weeks Dose: 113 mg/m <sup>3</sup> Method: OECD Test Guideline 474	Negative
Diphenylmethane-2,4'- diisocyanate	Genotoxicity in vitro Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471	Negative
	Genotoxicity in vitro Application route: Inhalation Exposure time: 3 weeks Dose: 118 mg/m <sup>3</sup> Method: OECD Test Guideline 474	Negative

**COMPONENTS****Diphenylmethanediisocyanate**

Germ cell mutagenicity: Test on bacterial or mammalian cell cultures did not show mutagenic effects assessment.

**CARCINOGENICITY**

PRODUCT/INGREDIENT NAME	TEST	RESULT
4,4'-Methylenediphenyl diisocyanate	Species: Rat, male and female Application Route: Inhalation Exposure time: 24 months Dose 1 mg/m <sup>3</sup> Frequency of treatment: 5 daily Method: OECD Test Guideline 453	Positive Target organs: Lungs

<b>Diphenylmethanediisocyanate</b>	Species: Rat, male and female Application Route: Inhalation Exposure time: 24 months Dose 1 mg/m <sup>3</sup> Frequency of treatment: 5 daily Method: OECD Test Guideline 453	Positive
<b>Diphenylmethane-2,4'- diisocyanate</b>	Species: Rat, male and female Application Route: Inhalation Exposure time: 24 months Dose 1 mg/m <sup>3</sup> Frequency of treatment: 5 daily Method: OECD Test Guideline 453	Positive Target organs: Lungs
<b>CARCINOGENICITY - ASSESSMENT</b>	No data available	
<b>IARC</b>	No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC.	
<b>ACGIH</b>	No components of this product present at levels greater than or equal to 0.1% is identified as carcinogen or potential carcinogen by ACGIH.	
<b>OSHA</b>	No components of this product present at levels greater than or equal to 0.1% is identified as carcinogen or potential carcinogen by OSHA.	
<b>NTP</b>	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.	

**REPRODUCTIVE TOXICITY**

<b>PRODUCT/INGREDIENT NAME</b>	<b>TEST</b>	<b>RESULT</b>
<b>4,4'-Methylenediphenyl diisocyanate</b>	Effect on fetal development Species: Rat, female General Toxicity Maternal: No observed adverse effect level: 4 mg/m <sup>3</sup> Method: OECD Test Guideline 4	No teratogenic effects.
<b>Diphenylmethanediisocyanate</b>	Effects on fertility Species: Rat, male and female Application Route: Inhalation Method: OECD Test Guideline 414	No significant adverse effects were reported.
	Effect on fetal development Species: Rat, male and female Application route: Inhalation General Toxicity Maternal: 4 mg/m <sup>3</sup> Method: OECD Test Guideline 414	No teratogenic effects.
<b>Diphenylmethane-2,4'- diisocyanate</b>	Effects on fertility Species: Rat, female Application Route: Inhalation Method: OECD Test Guideline 414	Animal testing did not show any effects on fertility

Effects on fertility Species: Rat, male Application Route: Inhalation Method: OECD Test Guideline 414	Animal testing did not show any effects on fertility.
Effect on fetal development Species: Rat, female General Toxicity Maternal: No observed adverse effect level: 4 mg/m <sup>3</sup> Method: OECD Test Guideline 414	No teratogenic effects.

## COMPONENTS

### Diphenylmethanediisocyanate

Reproductive toxicity: No toxicity to reproduction

Assessment: No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

## STOT - SINGLE EXPOSURE

PRODUCT/INGREDIENT NAME	TEST
4,4'-Methylenediphenyl diisocyanate	Exposure route: Inhalation Target organs: respiratory Tract Assessment: May cause respiratory irritation
Diphenylmethanediisocyanate	Exposure route: Inhalation Target organs: respiratory Tract Assessment: May cause respiratory irritation
Diphenylmethane-2,4'- diisocyanate	Exposure route: Inhalation Target organs: respiratory Tract Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

STOT - REPEATED EXPOSURE: NO DATA AVAILABLE

## REPEATED DOSE TOXICITY

PRODUCT/INGREDIENT NAME	TEST
4,4'-Methylenediphenyl diisocyanate	Species: Rat, male and female Dose: 0.2 mg/m <sup>3</sup> Exposure time: 2 years Number of exposures: 5 d Method: OECD Test Guideline 453
Diphenylmethanediisocyanate	Species: Rat, male and female Dose: 0.2 mg/m <sup>3</sup> Test atmosphere: dust/mist Exposure time: 2 years Number of exposures: 5 d Method: OECD Test Guideline 453

<b>Diphenylmethane-2,4'- diisocyanate</b>	Species: Rat, male and female
	Dose: 0.2 mg/m <sup>3</sup>
	Test atmosphere: dust/mist
	Exposure time: 2 years
	Number of exposures: 5 d
Method: OECD Test Guideline 453	

## COMPONENTS

**Diphenylmethane-2,4'- diisocyanate**  
Repeated dose toxicity: Mild eye irritation

Aspiration toxicity: No data available

## EXPERIENCE WITH HUMAN EXPOSURE

<b>General information</b>	No data available
<b>Inhalation</b>	No data available
<b>Skin contact</b>	No data available
<b>Eye contact</b>	No data available
<b>Ingestion</b>	No data available
<b>Toxicology, Metabolism, Distribution</b>	No data available
<b>Neurological effects</b>	No data available

## FURTHER INFORMATION

<b>Ingestion</b>	No data available
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## 12. ECOLOGICAL INFORMATION

### ECOTOXICITY

PRODUCT/INGREDIENT NAME	TEST
<b>4,4'-Methylenediphenyl diisocyanate</b>	Toxicity to fish LC50 (Brachydanio rerio (Zebrafish)): > 1,000 mg/l Exposure time: 96 hours Test type: static test Method: OECD Test Guideline 203
	Toxicity to daphnia and aquatic invertebrates EC50 (Daphnia magna (Water flea)): > 1,000 mg/l Exposure time: 24 hours Test type: static test Test substance: Fresh water Method: OECD Test Guideline 202

	<p>Toxicity to daphnia and aquatic invertebrates (Chronic toxicity)          NOEC (Daphnia magna (Water flea)): &gt; 10 mg/l          Exposure time: 21 days          Test type: semi-static test          Test substance: Fresh water          Method: OECD Test Guideline 211</p>
	<p>Toxicity to soil dwelling          NOEC (Eisenia fetida (earthworms)): &gt; 1,000 mg/l          Exposure time: 336 hours          Method: OECD Test Guideline 207</p>
<b>Diphenylmethanediisocyanate</b>	<p>Toxicity to fish          LC50 (Brachydanio rerio (Zebrafish)): &gt; 1,000 mg/l          Exposure time: 96 hours          Test type: static test          Test substance: Fresh water          Method: OECD Test Guideline 203          LC0: &gt; 1,000 mg/l          Exposure time: 95 hours</p>
	<p>Toxicity to daphnia and aquatic invertebrates          EC50 (Daphnia magna (Water flea)): &gt; 1,000 mg/l          Exposure time: 24 hours          Test type: static test          Test substance: Fresh water          Method: OECD Test Guideline 202</p>
	<p>Toxicity to Algae          EC50 (Desmodesmus subspicatus (Secenedesmus subspicatus)): &gt; 1,640 mg/l          Exposure time: 72 hours          Test type: static test          Test substance: Fresh water          Method: OECD Test Guideline 201          M-Factor (Acute aquatic toxicity): No data available          Toxicity to fish (Chronic toxicity): No data available</p>
	<p>Toxicity to daphnia and aquatic invertebrates (Chronic toxicity)          NOEC (Daphnia magna (Water flea)): &gt; 10 mg/l          Exposure time: 21 days          Test type: semi-static test          Test substance: Fresh water          Method: OECD Test Guideline 211</p>
	<p>Toxicity to microorganisms          EC50 (Activated sludge): &gt; 100 mg/l          Exposure time: 3 hours          Test type: static test          Test substance: Fresh water          Method: OECD Test Guideline 209</p>

	<p>Toxicity to soil dwelling          NOEC (Eisenia fetida (earthworms)): &gt; 1,000 mg/l          Exposure time: 336 hours          Method: OECD Test Guideline 207</p>
<b>Diphenylmethane-2,4'- diisocyanate</b>	<p>Toxicity to fish          LC50 (Brachydanio rerio (Zebrafish)): &gt; 1,000 mg/l          Exposure time: 96 hours          Test type: static test          Test substance: Fresh water          Method: OECD Test Guideline 203</p>
	<p>Toxicity to daphnia and aquatic invertebrates          EC50 (Daphnia magna (Water flea)): &gt; 1,000 mg/l          Exposure time: 24 hours          Test type: static test          Test substance: Fresh water          Method: OECD Test Guideline 202</p>
	<p>Toxicity to daphnia and aquatic invertebrates (Chronic toxicity)          NOEC (Daphnia magna (Water flea)): &gt; 10 mg/l          Exposure time: 21 days          Test type: semi-static test          Test substance: Fresh water          Method: OECD Test Guideline 211          M-Factor (Chronic aquatic toxicity): No available data</p>
	<p>Toxicity to microorganisms          EC50 (Activated sludge): &gt; 100 mg/l          Exposure time: 3 hours          Test type: static test          Test substance: Fresh water          Method: OECD Test Guideline 209</p>
	<p>Toxicity to soil dwelling          NOEC (Eisenia fetida (earthworms)): &gt; 1,000 mg/l          Exposure time: 336 hours          Method: OECD Test Guideline 207</p>
<b>Plant toxicity</b>	No data available
<b>Sediment toxicity</b>	No data available
<b>Toxicity to terrestrial organisms</b>	No data available
<b>Ecotoxicology Assessment Acute aquatic toxicity</b>	No data available
<b>Chronic aquatic toxicity</b>	No data available
<b>Toxicity Data on Soil</b>	No data available
<b>Other organism relevant to the environment</b>	No data available

## PERSISTENCE AND DEGRADABILITY

PRODUCT/INGREDIENT NAME	TEST	RESULT
4,4'-Methylenediphenyl diisocyanate	Biodegradability Inoculum: Domestic sewage Concentration: 30 mg/l Exposure time: 28 days Method: Inherent Biodegradability: Modified MITI Test (II)	Not biodegradable
Diphenylmethanediisocyanate	Biodegradability Inoculum: Domestic sewage Concentration: 30 mg/l Biodegradation: 0% Exposure time: 28 days Method: Inherent Biodegradability: Modified MITI Test (II)	Not biodegradable
Diphenylmethane-2,4'- diisocyanate	Biodegradability Inoculum: Domestic sewage Concentration: 30 mg/l Biodegradation: 0% Exposure time: 28 days Method: Inherent Biodegradability: Modified MITI Test (II)	Not biodegradable
Biochemical Oxygen Demand (BOD)	No data available	
Chemical Oxygen Demand (COD)	No data available	
BOD/COD	No data available	
ThOD	No data available	
BOD/ThOD	No data available	
Dissolved organic carbon (DOC)	No data available	
Physico-chemical removability	No data available	

## COMPONENTS

4,4'-Methylenediphenyl diisocyanate	
Stability in water	Degradation half-life (DT50): 20 hours (25 °C) Method: No information available Remarks: Fresh water
Diphenylmethanediisocyanate	
Stability in water	Degradation half-life (DT50): 0.8 days (25 °C) Method: no information available Remarks: Fresh water
Photodegradation	No data available
Impact on sewage treatment	No data available



**BIOACCUMULATION POTENTIAL**

PRODUCT/INGREDIENT NAME	TEST
4,4'-Methylenediphenyl diisocyanate	Bioaccumulation Species: Cyprinus carpio (Carp) Bioconcentration factor (BCF): 200 Remarks: Bioaccumulation is unlikely
	Partition coefficient: n-octanol/water Log Pow: 4.51 (20 °C) pH:7 Method: OCED Test Guideline 117
Diphenylmethanediisocyanate	Bioaccumulation Species: Cyprinus carpio (Carp) Bioconcentration factor (BCF): 200 Remarks: Bioaccumulation is unlikely
Diphenylmethane-2,4'- diisocyanate	Bioaccumulation Species: Cyprinus carpio (Carp) Bioconcentration factor (BCF): 200 Remarks: Bioaccumulation is unlikely
	Partition coefficient: n-octanol/water Log Pow: 4.51 (20 °C) pH:7 Method: OCED Test Guideline 117

**MOBILITY IN SOIL**

Mobility: No data available

Distribution among environmental compartments: No data available

Stability in soil: No data available

**OTHER ADVERSE EFFECTS**

Environmental fate and pathways: No data available

Results of PBT and vPvB assessment: No data available

Endocrine disrupting potential: No data available

Adsorbed organic bound halogens (AOX): No data available

**HAZARDOUS TO THE OZONE LAYER**

Ozone-Depletion Potential: Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone-CAA Section 602 Class I Substance. Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App. A + B).

Additional ecological information: No data available


Global warming potential (GWP): No data available

### 13. DISPOSAL CONSIDERATIONS

#### DISPOSAL METHODS

<b>Waste from residues</b>	Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
<b>Contaminated Packaging</b>	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

### 14. TRANSPORT INFORMATION

	DOT CLASSIFICATION	IMDG	IATA
<b>UN Number</b>	NA 3082	Not regulated	Not regulated
<b>Un Proper Shipping Name</b>	Other Regulated Substance, Liquid, N.O.S. (Methylene Diphenyl Diisocyanate)		
<b>Transportation hazard class(es)</b>	9 		
<b>Packing Group</b>	III		
<b>Marine Pollutant</b>	No		

\*PG: Packing group, ERG code 171

### 15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product.

#### UNITED STATES REGULATIONS

TSCA 5(a)2 final significant new use rule (SNUR): No ingredients listed.

TSCA 12(b) export notification: No ingredients listed.

SARA 311/312: Immediate (acute) health hazard.

	PRODUCT/INGREDIENT NAME	CAS #	CONCENTRATIONS %
<b>SARA 313 Form R Reporting requirements</b>	4,4'-Methylenediphenyl diisocyanate	101-68-8	50-70
	Diphenylmethanediisocyanate	9016-87-9	30-50

The following chemical is listed as HAP under the U.S. Clean Air act, Section 12 (40 CFR 61):

	4,4'-Methylenediphenyl diisocyanate	101-68-8	53.62
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**EPCRA - EMERGENCY PLANNING AND COMMUNITY RIGHT -TO- KNOW ACT  
CERCLA REPORTABLE QUANTITY**

COMPONENTS	CAS #	COMPONENTS RQ (LBS)	CALCULATED PRODUCT RQ (LBS)
Chlorobenzene	108-90-7	100	*
4,4'-Methylenediphenyl diisocyanate	101-68-8	5000	9324*

\*Calculated RQ exceeds reasonably attainable upper limit.

**STATE REGULATIONS**

**California Prop 65:** This product does not contain any chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

**16. OTHER INFORMATION**

**HAZARDOUS MATERIAL INFORMATION SYSTEM (USA)**

Health -2\*                      Flammability -1                      Physical hazards -0

Caution: HMIS® rating are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with fully implemented HMIS® program. HMIS® is a registered trademark of the National Paint & Coating Association (NPCA). HMIS® materials may be purchased exclusively from J.J. Keller.

**NATIONAL FIRE PROTECTION ASSOCIATION (USA) NFPA 704**

Health -2                      Flammability -1                      Instability-0                      Special- N/A

Caution: HMIS® rating are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with fully implemented HMIS® program. HMIS® is a registered trademark of the National Paint & Coating Association (NPCA). HMIS® materials may be purchased exclusively from J.J. Keller.

**LIQUID DECONTAMINATES (PERCENTAGES BY WEIGHT OR VOLUME)**

**Decontaminate 1:** \*- sodium carbonate: 5-10% \* - liquid detergent: 0.2-2% \*- Water: to make up 100%

**Decontaminate 2:** \*- concentrated ammonia solution: 3-8% \* - liquid detergent: 0.2-2% \*- Water: to make up 100%

Decontaminate 1 reacts slower with diisocyanates but is more environmentally friendly than decontaminate 2.

Decontaminate 2 contains ammonia. Ammonia presents health hazards. (See supplier safety information).

DATE OF REVISION 5/26/2022

DATE OF PREVIOUS ISSUE 9/12/2018

REVISIONS REVIEW DATA LISTED ON SDS

VERSION 3

PREPARED BY C. ROGALSKI

#### NOTICE TO READER

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.