



Approval Date : 12/07/2016
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SAFETY DATA SHEET

SECTION 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product Identifier

Product Name : Millathane® PM-T 75D
CAS Number : Mixture
Product Description : Aromatic Isocyanate Prepolymer

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Use(s) : Isocyanate component for the production of polyurethanes.
Restrictions on Use(s) : For industrial use only, by trained individuals.

1.3 Supplier

: TSE Industries, Inc.
5260 113th Avenue North
Clearwater, FL 33760
Tel: (727) 573-7676
Fax: (727) 572-0415

SDS Contact : SDSInquiry@TSE-Industries.com
Hours of Operation : Monday-Friday, 8:00 am-5:00 pm EST

1.4 Emergency Telephone

: INFOTRAC®
North America: +1-800-535-5053

SECTION 2: Hazards Identification

2.1 Classification of the Substance or Mixture

Product Definition : Mixture
Physical Hazards : Not Classified as physical hazard according to 2012 OSHA Hazard Communication Standard: 29 CFR1910.1200
Health Hazards :
Acute Toxicity-Inhalation : Category 1
Respiratory Sensitization : Category 1
Skin Sensitization : Category 1
Carcinogenicity : Category 2
Unknown Acute Toxicity : There is no acute toxicity data available for this material. 90% of this product consists of ingredients with unknown acute toxicity.

2.2 Label Elements

Hazard Pictogram : 

Signal Word : DANGER
Hazard Statement : Fatal if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Suspected of causing cancer.

Precautionary Statements

Prevention : Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapor/spray.
Use only outdoors or in well ventilated area.

In case of inadequate ventilation wear respiratory protection.
Wear protective gloves/protective clothing/eye protection/face protection.
Contaminated work clothing must not be allowed out of the workplace.

Response : IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor.
IF on SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical attention. Take off contaminated clothing and wash it before reuse.
If exposed or concerned: Get medical advice/attention.

Storage : Store locked up.
Store in a well-ventilated place. Keep container tightly closed.

Disposal : Dispose of contents and container in accordance with existing federal, state, and local environmental control laws.

Supplemental Label Elements : None

2.3 Hazard Not Otherwise Classified

Asphyxiate : Not applicable.

Combustible Dust : Not applicable.

SECTION 3: Composition/Information on Ingredients

Substance/Mixture : Mixture

PRODUCT/INGREDIENT NAME	CAS#	%
Toluene Diisocyanate Mixed Isomers	26471-62-5	1.4
Dicyclohexylmethane-4,4'-Diisocyanate	5124-30-1	8.08

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

SECTION 4: First Aid Measures

4.1 Description of First Aid Measures

Eye Contact : Immediately flush eyes with plenty of water for at least 15 min., occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Extreme asthmatic reactions that may occur in sensitized person can be life threatening. Get medical attention immediately. Administer oxygen or artificial respiration as needed. Asthmatic symptoms may develop and may be immediate or delayed up to several hours.

Skin Contact : For severe exposure, immediately get under safety shower and begin rinsing. Remove contaminated clothing and shoes. Wash contaminated skin with plenty of soap and water. After washing, cover affected skin area with polyethylene glycol (300-500 molecular weight) and wash again immediately with soap and water to thoroughly remove polyethylene glycol and residual isocyanate. Repeat if necessary. Get medical attention immediately. Wash clothing before reuse.

Ingestion : Do NOT induce vomiting unless directed to do so by medical personnel. Wash out mouth with water. Get medical attention.

Protection of First-Aiders : No action shall be taken involving any personal risk or without suitable training.

4.2 Most Important Symptoms of Exposure

Eye Contact : May cause eye irritation with symptoms of reddening, tearing, stinging, swelling and burning. May cause temporary corneal injury. Vapor or aerosol may cause irritation with symptoms of burning and tearing.

- Inhalation** : Isocyanate vapors or mist at concentration above PEL can irritate (burning sensation) the mucus membrane in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing difficulty). Persons with a preexisting, nonspecific bronchial hyper reactivity can respond to concentrations below PEL with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above PEL may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g. fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects re usually reversible.
- Skin Contact** : Causes skin irritation with symptoms of reddening, itching, and swelling. Can cause sensitization. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove.
- Ingestion** : May cause irritation of the digestive tract. Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

- Notes to Physician** : Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation as needed. Workplace vapors could produce reversible corneal epithelial edema impairing vision.
- Skin: This compound is a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn.
- Ingestion: Treat symptomatically. There is no antidote. Inducing vomiting is contraindicated because of the irritating nature of the compound.
- Inhalation: Symptoms affecting the respiratory tract can also occur several hours after overexposure. Treatment is essentially symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from further exposure to any diisocyanate.

SECTION 5: Firefighting Measures

5.1 Extinguishing Media

- Suitable Extinguishing Media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable Extinguishing Media** : High volume water jet.

5.2 Special Hazards Arising from the Substance or Mixture

- Hazards from the Substance or Mixture** : Closed container may forcibly rupture under extreme heat or when contents are contaminate with water as the carbon dioxide is formed.
- Hazardous Thermal Decomposition Products** : Carbon dioxide, carbon monoxide, oxides of nitrogen, dense black smoke, isocyanate, isocyanic acid, other undetermined compounds.

5.3 Advice for Firefighters

- Special Protective Actions for Firefighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Avoid contact with product. Use cold water spray to cool fire exposed containers to minimize the risk of rapture. Large fire can be extinguisher with large volumes of water applied from a safe distance, since reaction between water and hot diisocyanate can be vigorous. Decontaminate equipment prior to reuse.
- Special Protective Equipment for Firefighters** : Fire-fighters should wear NFPA compliant firefighting protective equipment and self-contained breathing apparatus (SCBA). Decontaminate protective clothing prior to reuse.

SECTION 6: Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

The magnitude of evacuation depends upon the quantity released, site conditions and the ambient temperature.

- Emergency Response Personnel** : Implement site emergency response plan. Evacuate non-emergency personnel. Keep unnecessary and unprotected personnel from entering. The evacuation depends upon the quantity released, site conditions, and the ambient temperature. Call INFOTRAC 1-800-535-5053 for assistance and advice.

Do not touch or walk through split material. Put on appropriate personal protective equipment as specified in Section 8 of this SDS. Ventilate and remove ignition sources.

6.2 Environmental Precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air),

6.3 Methods and Materials for Containment and Cleaning Up

Small Spill : Control the source of the leak. Contain the released material by diking the containment area with absorbent. Move containers from spill area. Completely cover the spill area with absorbent and allow absorbent to absorb the spilled liquid. Shovel the absorbent material into an approved metal container. Do not fill the container more than 2/3 full to allow for expansion. Do not tighten the lid on container. Move container to an isolated, well-ventilated area to allow release of carbon dioxide. After 72 hours, seal the container and dispose according to instructions in section 13 of this SDS.

Decontamination of the spill surface area. Cover contaminated surface area with neutralization solution. Scrub the surface with broom or brush to penetrate into porous surfaces. Wait at least 15 minutes after first application of the neutralization solution. Cover the area with absorbent material and shovel this into metal container. Check for the residual surface contamination using aromatic isocyanate surface test kit and repeat decontamination if necessary. Do not fill the container more than 2/3 full to allow for expansion. Do not tighten the lid on container. Move container to an isolated, well-ventilated area to allow release of carbon dioxide. After 72 hours, seal the container and dispose according to instructions in section 13 of this SDS.

Decontaminate surface, tools and equipment that have been in contact with an isocyanate. It may take two or more application of the neutralization solution to decontaminate the surface. The following mixtures can be used effectively as a neutralizer:

- A mixture of 80% water and 20% non-ionic surfactant.
- A mixture of 93% water, 2% detergent and 5% household ammonia

Check the residual surface contamination using a surface wipe method such as the CLI Swipe@pad.

Large Spill : Call INFOTRAC 1-800-535-5053 for assistance and advice.

SECTION 7: Handling and Storage

Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication standard 29 CFR 1910.1200.

7.1 Handling

Protective Measures : Wear appropriate personal protective equipment, as specified in section 8 of this SDS, while handling this material.

Handling : Employ engineering control measures as specified in section 8 of this SDS, prior to handling this material. Material reacts with moisture from the air. Containers that have been opened must be carefully resealed. Purge container with the inert gas before closing. Clean any spills immediately and decontaminate surface according to procedure in section 6 of this SDS.

7.2 Storage

: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Do not store in unlabeled containers.

Storage Temperature 25°C (77°F) minimum
35°C (95°F) maximum

SECTION 8: Exposure Controls/Personal Protection

8.1 Occupational Exposure Limits

Name	CAS#	Regulatory Limits (OSHA PEL)		Recommended Limits (ACGIH TLV)	
		ppm	mg/ m ³	ppm	mg/ m ³
2,4-Toluene Diisocyanate	584-84-9	0.02*	0.14	0.005 0.02**	NE
2,6-Toluene Diisocyanate	91-08-7	NE	NE	0.005 0.02**	NE
Dicyclohexylmethane-4,4'-Diisocyanate	5124-30-1	NE	NE	0.005	NE

* Ceiling Limit

** Short Term Exposure

Recommended Monitoring : Use specific OSHA sampling and analytical procedure for monitoring airborne level of diisocyanat to ensure that published exposure limits have not been exceeded.

Personnel assigned to work with isocyanates should undergo a pre-placement medical evaluation. History of adult asthma and prior isocyanate sensitization are the reasons for medical exclusions from diisocyanate area. Person who has a history of eczema or respiratory allergies such as hay fever a history of adult asthma should be restricted from work with isocyanates. A comprehensive annual medical surveillance program should be instituted for all employees who are potentially exposed to diisocyanates. Once a worker has been diagnosed as a sensitized to any isocyanate, no further exposure can be permitted.

8.2 Exposure Controls

Engineering Controls : Provide local exhaust ventilation to keep airborne concentration below the recommended occupational exposure limit whenever diisocyanate is handled, processed or spray-applied. At normal room temperatures (70°F) TDI levels quickly exceed the PEL unless properly ventilated. Standard reference sources regarding industrial ventilation should be consulted for guidance about adequate ventilation. To ensure that published exposure limits have not been exceeded, monitoring for airborne diisocyanate should become part of the overall employee exposure characterization program.

Environmental Controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual Protection Measures

Hygiene Measures : It is very important to prevent skin contact with material containing Dicyclohexylmethane-4,4'-Diisocyanate. Educate and train employees in the safe use and handling of this product.

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/Face Protection : Safety goggles or combination of goggles and face shields complying with OSHA 1910.133 standard to avoid exposure to liquid splashes.

Hand Protection : Chemical-resistant, impervious gloves complying with OSHA 1910.138 standard should be worn at all times when handling chemical products. Recommended gloves: Nitrile rubber, butyl rubber and neoprene.

Body Protection : Personal protective equipment for the body should be selected based on the task being performed and the risk involved and should be approved by a specialist before handling this product.

Foot Protection : Appropriate footwear should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Foot protection should comply with OSHA 1910.136 standard.

- Respiratory Protection** : At normal room temperatures (70°F) airborne TDI can quickly exceed the PEL; therefore, in inadequate ventilation environment, respiratory protection must be worn. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134). The type of respiratory protection available includes (1) self-contained breathing apparatus or supplied air respirator in the positive pressure of continuous flow mode or (2) air-purifying respirator. If an APR is selected, then the cartridge must be equipped with an end-of-service life indicator certified by NIOSH or a change out schedule, based on objective information or data that will ensure that the cartridges are changed out before the end of their service life, must be developed and implemented. An organic vapor cartridge is recommended for APR use. For emergency or non-routine, high exposure situation, including confined space entry use full face piece pressure demand self-contained breathing apparatus or full face piece pressure demand supplied-air respirator with escape provisions.

SECTION 9: Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Appearance

- Physical State** : Liquid
- Color** : Colorless to light yellow.
- Odor** : Pungent [Strong].
- Odor Threshold** : No data available.
- pH** : No data available.
- Melting Point/Freezing Point** : No data available.
- Initial Boiling Point & Boiling Range** : >204°C (>400°F) @ 1,013 hPa.
- Flash Point** : >200°C (>392°F).
- Evaporation Rate** : No data available.
- Flammability** : No data available.
- Upper/Lower Flammability or Explosive Limits** : No data available.
- Vapor Pressure** : 0.025 mmHg @ 77°F (20°C) for TDI
- Vapor Density** : No data available.
- Relative Density** : No data available.
- Solubility(ies)** : Insoluble in water.
- Partition Coefficient: n-octano/water** : No data available.
- Auto-ignition Temperature** : No data available.
- Decomposition Temperature** : 176.67°C (350.01°F)
- Viscosity** : No data available.

- 9.2 Other Information** : None

SECTION 10: Stability and Reactivity

- 10.1 Reactivity** : Contact with moisture and incompatible material.
- 10.2 Chemical Stability** : Stable at room temperature in closed container under normal storage and handling condition (70°F and 14.7 psig).
- 10.3 Possibility of Hazardous Polymerization** : Contact with moisture, other materials that react with isocyanate, or temperature above 350°F (177°C) may cause polymerization.
- 10.4 Conditions to Avoid** : Contact with moisture from the air. Isocyanate reacts slowly with water to form a CO₂ gas. This gas can cause sealed container to expand and possibly rupture.
- 10.5 Incompatible Materials** : Water, amine, strong bases, alcohols, copper alloys.

- 10.6 Hazardous Decomposition Products** : Under normal conditions of storage and use, hazardous decomposition should not occur. Thermal decomposition may release: Carbon dioxide, carbon monoxide, nitrogen oxides, dense black smoke, hydrogen cyanide/isocyanate, isocyanic acid, and other undetermined compounds.

SECTION 11: Toxicological Information

Information on toxicological effects of material is not available. Individual component information and calculations method have been used to evaluate health and physical hazards of the mixture.

Toxicity Data for Toluene Diisocyanate (TDI) Mixed Isomers

- Acute Toxicity** : Oral LD₅₀: 4130 mg/kg (rat, female)
Oral LD₅₀: 5110 mg/kg (rat, male)
Dermal LD₅₀: >9400 mg/kg (rabbit)
Inhalation LC₅₀: 66ppm, 1 h (rat,)
- Sensitization** : Respiratory sensitization: positive (guinea pig)
Skin Sensitizer: positive (mouse, local lymph node assay (LLNA)) (OECD Test Guideline 429)
- Skin Irritation** : Moderately Irritating (rabbit, Draize, 24 h)
- Eye Irritation** : Severely Irritating (rabbit)
- Repeated Dose Toxicity** : 113 weeks, inhalation, NOAEL: 0.05 ppm, (rat, male/female 6 h/day, 5 days/week): Irritation to lungs and nasal cavity. No systematic effects were observed.
90 day, oral, NOAEL: 30 mg/kg, LOAEL: 60 mg/kg, (rat, male/female 6 h/day, 5 days/week): Reduced body weight gain. Changes in lungs.
- Mutagenicity** : *Genetic Toxicity in Vitro*
Positive, negative: Ames-test (Salmonella typhimurium, with/without metabolic activation)
Positive and negative results were seen in various in vitro studies. Questionable validity of the studies due to rapid hydrolysis in solvents.
Genetic Toxicity in Vivo
Negative: Macronucleus assay (rat)
Negative: Macronucleus test (mouse, male/female, inhalative)
- Carcinogenicity** : Negative (rat, male/female, inhalation, 113 w, 6h/day, 5 days/week).
Positive (rat, male/female, oral, 106 w, daily). The study validity is questioned due to the dose exceeding maximum tolerated dose and irregularities in compound storage and analysis.
- Toxic to Reproduction** : Negative: Two generation study, Inhalative, 6 hr/day, 7 days/week, (rat) NOAEL (parental): 0.08 ppm, NOAEL (F1): 0.02ppm, NOAEL (F2): 0.3 ppm
No effects on reproductive parameters observed at doses tested
- Teratogenicity** : Negative: rat, female, inhalation, gestation days 6-15, 6 hr/day, 7 days/week, NOAEL (maternal): 0.1 ppm, NOAEL (teratogenicity): 0.1 ppm.
- Aspiration Hazard** : No data available.
- Information on the Likely Routes of Exposure** : Inhalation, eye and skin absorption

Potential Acute Health Effects

- Eye Contact** : Cause eye irritation with exposure to concentration above PEL/TLV. Eye contact with substance causes temporary corneal injury.
- Inhalation** : Respiratory tract irritation with exposure above PEL/TLV. Chemical bronchitis, bronchial spasm and asthma-like findings or pulmonary edema with exposure well above PEL/TLV. Possible chemical or hypersensitivity pneumonitis.
- Skin Contact** : May result in dermatitis either irritative or allergic.
- Ingestion** : May cause irritation of the digestive tract.

Delayed and Immediate Effects and also Chronic Effects from Short and Long Term Exposure

Short Term Exposure

- Potential Immediate Effects** : Irritation of mucus membranes in the respiratory tract causes runny nose, sore throat, coughing, chest discomfort, shortness of breath and breathing obstruction.
Skin irritation can cause reddening, itching and swelling of the skin.

Skin sensitization can cause reddening, itching, swelling and rash in previously sensitized person.

Reddening, tearing, stinging and swelling of the eyes. Vapor or aerosol may cause burning and tearing of the eyes. Possible abdominal pain, nausea, vomiting and diarrhea. Abdominal pain, nausea, vomiting and diarrhea are symptoms of digestive tract irritation.

Potential Delayed Effects : Symptoms affecting the respiratory tract can also occur several hours after overexposure. May cause hypersensitivity pneumonitis, which is characterized by flu-like.

Long Term Exposure

Potential Immediate Effects : May cause sensitization of the respiratory tract as a result of previous repeated overexposure or a single large dose. This will develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the PEL. Symptoms include chest tightness, wheezing, cough, shortness of breath or asthmatic attack. Similar to many nonspecific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air, or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years.

Potential Delayed Effects : Symptoms including chest tightness, wheezing, cough, and shortness of breath or asthmatic attack can delayed up to several hours after exposure.

Potential Chronic Health Effects

General : Chronic overexposure to isocyanate has also been reported to cause skin and respiratory sensitization and decrease in lung function, which may be permanent. Prolonged skin contact can cause reddening, swelling, rash, scaling, or blistering. Animal tests and other research indicate that skin contact with isocyanates can play a role in causing isocyanate sensitization and respiratory reaction. This data reinforces the need to prevent direct skin contact with isocyanates. Prolonged vapor contact with the eyes may cause conjunctivitis.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Other Information : None

Toxicity Data for Dicyclohexylmethane-4,4"- Diisocyanate (HMDI)

Acute Toxicity : Oral LD₅₀: 18200 mg/kg (rat, male/female) (OECD Test Guideline 401)
Dermal LD₅₀: >7000 mg/kg (rat, male/female) (OECD Test Guideline 402)
Inhalation LC₅₀: 0.434 mg/l, 4 h (rat,) (OECD Test Guideline 403)

Sensitization : Respiratory sensitization: positive (guinea pig)
Skin Sensitizer: positive (mouse, mouse ear swelling test)
Skin Sensitizer according to Magnusson/Kligmann (maximization test): positive (guinea pig, OECD Test Guideline 406).
Skin sensitizer: positive (human).

Skin Irritation : Irritating, rabbit (OECD Test Guideline 404)

Eye Irritation : Slightly Irritating, rabbit (OECD Test Guideline 405)

Repeated Dose Toxicity : 13 weeks, inhalation, NOAEL: 3 mg/m³, (rat, male/female 6 h/day, 5days/week): Evidence of damage to organs other than the organs of respiration was not found.

Mutagenicity : *Genetic Toxicity in Vitro*
No indication of mutagenic effects: Ames-test (Salmonella typhimurium, with/without metabolic activation, OECD Guideline 471)
No indication of mutagenic effects: mammalian cell gene mutation test (Chinese hamster V79 cell line, with/without metabolic activation)
No indication of mutagenic effects: chromosome aberration test (Chinese hamster V79 cell line, with/without metabolic activation)

Carcinogenicity : No carcinogenic substances as defined by IARC, OSHA and NTP.

Toxic to Reproduction : Inhalative, 6 hr/day, 7 days/week, (rat, male/female) NOAEL parental.: 1 mg/m³

Teratogenicity : Negative in animal experiments: Inhalative, 6 hr/day, 7 days/week, (rat, male/female)
NOAEL Mat.: 1 mg/m³
NOAEL Teratog.: 6 mg/m³.

Aspiration Hazard : No data available.

Information on the Likely : Inhalation, eye and skin absorption

Routes of Exposure**Potential Acute Health Effects**

- Eye Contact** : May cause eye irritation with exposure to concentration above PEL/TLV. Eye contact with substance causes temporary corneal injury.
- Inhalation** : Respiratory tract irritation with exposure above PEL/TLV. Chemical bronchitis, bronchial spasm and asthma-like findings or pulmonary edema with exposure well above PEL/TLV. Possible chemical or hypersensitivity pneumonitis.
- Skin Contact** : May result in dermatitis either irritative or allergic.
- Ingestion** : May cause irritation of the digestive tract.

Delayed and Immediate Effects and also Chronic Effects from Short and Long Term Exposure**Short Term Exposure**

- Potential Immediate Effects** : Irritation of mucus membranes of the nose throat or trachea breathlessness, chest discomfort, difficult breathing and reduced pulmonary function, and headache. Chemical bronchitis, asthma-like findings or pulmonary edema. Reddening, itching and swelling of the skin and rash in previously sensitized person. Reddening, tearing, stinging and swelling of the eyes. Vapor or aerosol may cause burning and tearing of the eyes. Possible abdominal pain, nausea, vomiting and diarrhea.
- Potential Delayed Effects** : Symptoms affecting the respiratory tract can also occur several hours after overexposure. May cause hypersensitivity pneumonitis, which is characterized by flu-like.

Long Term Exposure

- Potential Immediate Effects** : May cause sensitization of the respiratory tract as a result of previous repeated overexposure or a single large dose. This will develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the PEL. Symptoms include chest tightness, wheezing, cough, shortness of breath or asthmatic attack. Similar to many nonspecific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air, or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years.
- Potential Delayed Effects** : Symptoms including chest tightness, wheezing, cough, and shortness of breath or asthmatic attack can be delayed up to several hours after exposure.

Potential Chronic Health Effects

- General** : Chronic overexposure to isocyanate has also been reported to cause skin and respiratory sensitization and decrease in lung function, which may be permanent. Prolonged skin contact can cause reddening, swelling, rash, scaling, or blistering. Animal tests and other research indicate that skin contact with isocyanates can play a role in causing isocyanate sensitization and respiratory reaction. This data reinforces the need to prevent direct skin contact with isocyanates. Prolonged vapor contact with the eyes may cause conjunctivitis.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Other Information** : None

SECTION 12: Ecological Information

- 12.1 Ecotoxicity** : No data available.
- 12.2 Persistence and Degradability** : No data available.
- 12.3 Bioaccumulative Potential** : No data available.
- 12.4 Mobility in Soil**
- Soil/Water Partition Coefficient (K_{oc})** : No data available.
- Mobility** : No data available.
- 12.5 Other Adverse Effects** : No data available.

SECTION 13: Disposal Considerations**13.1 Waste Treatment Methods**

- Methods of Disposal** : Dispose product via a licensed waste disposal contractor in accordance with existing federal, state and local environmental laws. Incineration is the preferred method.
- Empty Container Disposal** : Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
Empty container contains product residue. Do not heat or cur empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residue is removed prior to disposal.
- Special Precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

SECTION 14: Transport Information**Land Transport (DOT)**

- Proper Shipping Name** : Toxic, liquids, organic, n.o.s. (contains Toluene Diisocyanate, Dicyclohexylmethane,-4,4'-Diisocyanate)
- Hazard Class or Division** : 6.1
- UN/NA Number** : UN2810
- Packaging Group** : III
- Hazard Label(s)** : Class 6.1

Sea Transport (IMODG) : Not Determined

Air Transport (ICAO/IATA) : Not Determined

Additional Transportation Information : None

SECTION 15: Regulatory Information

U.S. EPA CERCLA Hazardous Substances (40CFR302.4) :

Components

Toluene Diisocyanate

Reportable quantity

100 lbs

U.S. EPA SARA TITLE III: Section 311/312 Categorizations (40CFR370) : Chronic Health Hazard
Acute Health Hazard

U.S. EPA Emergency Planning and Community Right-to-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substances (40CFR 355, Appendix A) : None

U.S. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65)-Supplier Notification Required : Toluene Diisocyanate, Dicyclohexylmethane-4,4"-Diisocyanate

U.S. Toxic Substances Control Act : All components of this material are in compliance with the current inventory requirements.

TSCA 12(b)-Export Notification :

<u>Components</u>	<u>CAS-No.</u>	<u>Threshold</u>
2,4-Toluene Diisocyanate	584-84-9	≥0.1%
2,6-Toluene Diisocyanate	91-08-7	≥0.1%

SNUR Components :

<u>Components</u>	<u>CAS-No.</u>	<u>SNUR</u>
2,4-Toluene Diisocyanate	584-84-9	40CFR 721.10789
2,6-Toluene Diisocyanate	91-08-7	40CFR 721.10789

State Right-to-Know Information

The following chemical is specifically listed by individual states; other product specific health and safety data in other sections of the SDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

<u>Weight %</u>	<u>Components</u>	<u>CAS-No.</u>	<u>State</u>
1.12	2,4-Toluene Diisocyanate	584-84-9	MA, NJ, PA
0.28	2,6-Toluene Diisocyanate	91-08-7	MA, NJ
8.08	Dicyclohesylmethane-4,4'-Diisocyanate	5124-30-1	MA

California Proposition 65

WARNING! This product contains a chemical known to the state of California to cause cancer.

SECTION 16: Other Information

Abbreviations and Acronyms

ATE	:	Acute Toxicity Estimate
DNEL	:	Derived No Effect Level
ACGIH	:	American Conference of Governmental Industrial Hygienists
CASRN	:	Chemical Abstracts Service Registry Number
IARC	:	International Agency for Research on Cancer
LOAEL	:	Lowest-observed-adverse-effect level
N/D	:	Not Determined
N/E	:	Not Established
NOAEL	:	No-observed-adverse-effect level
NTP	:	National Toxicology Program
OSHA	:	Occupational Safety & Health Administration
PEL	:	Permissible Exposure Limit
PPE	:	Personal Protective Equipment
STEL	:	Short Term (15 min) Exposure Limit
STP	:	Standard Temperature and Pressure
TLV	:	Threshold Limit Value
TWA	:	Time Weighted Average (8 hr.) Time Weighted Average (8 hr.)

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