



**1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER**

**PRODUCT IDENTIFIER:** HEXAMETHYLENE DIISOCYANATE (HDI)  
**MANUFACTURER / IMPORTER:** TOSOH SPECIALTY CHEMICALS USA, Inc.  
**ADDRESS:** 1720 Windward Concourse, Suite 125  
Alpharetta, Georgia 30005

**PHONE:** 1-770-442-9501

**EMERGENCY PHONE:** CHEMTREC 1-800-424-9300 OR 1-703-527-3887

**RECOMMENDED USE:** General industrial products

**2. HAZARDS IDENTIFICATION**

**GHS CLASSIFICATION**

Acute toxicity	
Acute toxicity (oral)	Category 4
Acute toxicity (inhalation: vapor)	Category 1
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Respiratory sensitization	Category 1
Specific target organ toxicity – single exposure	Category 3

**HAZARD SYMBOL:**



**SIGNAL WORD:**

**DANGER**

**HAZARD STATEMENTS:**

Harmful if swallowed.  
Fatal if inhaled.  
Causes skin burns and eye damage.  
May cause an allergic skin reaction.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause respiratory irritation.

**PREVENTION:**

Do not breathe dust/fume/gas/mist/vapors/spray.  
Use only outdoors or in a well-ventilated area.  
Wear respiratory protection.



## **2. HAZARDS IDENTIFICATION (continued)**

### **PREVENTION:**

Wear protective gloves/protective clothing/eye protection/face protection.  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Contaminated clothing must not be allowed out of the workplace.

### **RESPONSE:**

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Immediately call a poison control center/doctor.  
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.  
If swallowed: Rinse mouth. Do NOT induce vomiting. Call a poison control center/doctor if you feel unwell.  
If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. Immediately call a poison control center/doctor.  
If experiencing respiratory symptoms: call a poison control center/doctor.

### **STORAGE:**

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

### **DISPOSAL:**

Dispose of contents/container in accordance with Federal and state regulations.

## **3. COMPOSITION/INFORMATION ON INGREDIENTS**

<u>Chemical Name</u>	<u>CAS #</u>	<u>OSHA Hazardous(Y/N)</u>	<u>Concentration (%)</u>
Hexamethylene diisocyanate	822-06-0	Y	100

## **4. FIRST AID MEASURES**

### **EYE CONTACT:**

Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek immediate medical attention.

### **SKIN CONTACT:**

Remove contaminated clothing and shoes. Wash with plenty of water, for at least 15 minutes. Seek immediate medical attention. Launder contaminated clothing and shoes before re-use.

### **INGESTION:**

Do not induce vomiting. If victim is conscious and alert, give 1-2 glasses of water to drink. Do not give anything by mouth to an unconscious person. Seek immediate medical attention. Do not leave victim unattended.



#### **4. FIRST AID MEASURES (continued)**

**INHALATION:**

If respiratory irritation or distress occurs, remove victim to fresh air. Seek immediate medical attention.

**NOTES TO PHYSICIAN:**

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Treat symptomatically. No specific antidote available.

#### **5. FIRE FIGHTING MEASURES**

**EXTINGUISHING MEDIA:**

Dry chemical, foam, CO<sub>2</sub>

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

Water-reactive material. Closed containers may rupture due to buildup of pressure when exposed to extreme heat. Cool containers exposed to fire with water. Do not allow water to enter container. After the fire is extinguished, neutralize the spilled material with decontaminant. Keep the area clear. Clean up residual material by washing area with water. Collect washings for disposal.

**SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS:**

Firefighters should wear NIOSH/MSHA-approved self-contained breathing apparatus and full protective clothing. Cool containers exposed to fire with water.

**HAZARDOUS DECOMPOSITION MATERIALS UNDER FIRE CONDITIONS:** Oxides of carbon, oxides of nitrogen, hydrogen cyanide.

#### **6. ACCIDENTAL RELEASE MEASURES**

**PERSONAL PRECAUTIONS:**

Evacuate area. Wear appropriate protective gear for the situation. (See Personal Protection Information in Section 8).

**ENVIRONMENTAL PRECAUTIONS:**

Do not flush to drain. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

**METHOD FOR CLEAN UP:**

(Small spill) Absorb with an inert absorbant. Dispose of absorbant and rags, waste paper, etc., remove and store in a container with a lid. (Large spill) Dike spill to contain it. Recover as much spill material as possible. Absorb with an inert absorbant. Clean up residual material by washing area with water. Collect washings for disposal. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.



## **7. HANDLING AND STORAGE**

**PRECAUTIONS FOR SAFE HANDLING:** Handle material with suitable protection (See Section 8). Handle with adequate ventilation. Avoid breathing vapors. Avoid contact with eyes, skin and clothing.

**VENTILATION:** General area dilution/exhaust ventilation.

**CONDITIONS FOR SAFE STORAGE:** Store upright in a cool, dry, well ventilated area out of direct sunlight. Material is water-reactive. Do not allow water to enter container. Keep away from heat, open flames and ignition sources. Keep container tightly closed. Do not reuse container.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**ENGINEERING MEASURES:** Set up hand-wash station and eyewash station near work area. General area dilution/exhaust ventilation.

### **EXPOSURE LIMITS:**

Hexamethylene diisocyanate 0.005 ppm – ACGIH TWA

### **PERSONAL PROTECTION MEASURES:**

**Respiratory protection:** When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with regulatory standards and/or industrial recommendations. Self-contained or supplied-air respiratory equipment is recommended.

**Eye protection:** Safety glasses with side shields, goggles or face shield are recommended.

**Skin protection:** Skin contact should be minimized through the use of chemical-resistant gloves and boots, and suitable protective clothing.

The following general measures should be taken when working or handling this material:

- 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- 3) Wash exposed skin promptly to remove accidental splashes of contact with this material.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>PHYSICAL STATE:</b>	Liquid
<b>COLOR:</b>	Colorless to light yellow
<b>ODOR:</b>	Pungent
<b>pH:</b>	No data available
<b>MELTING POINT:</b>	-88.6F (-67C)
<b>BOILING POINT:</b>	491F (255C)
<b>FLASH POINT:</b>	280.4F (138C), Cleveland open cup
<b>AUTOIGNITION POINT:</b>	849.2F (454C)
<b>EXPLOSIVE LIMITS(Lower):</b>	No data available



## **9. PHYSICAL AND CHEMICAL PROPERTIES (continued)**

<b>EXPLOSIVE LIMITS(Upper):</b>	No data available
<b>VAPOR PRESSURE:</b>	0.002 kPa @ 77F (25C)
<b>VAPOR DENSITY:</b>	No data available
<b>EVAPORATION RATE:</b>	No data available
<b>SPECIFIC GRAVITY:</b>	1.05 @ 73F (23C)
<b>SOLUBILITY IN WATER:</b>	Insoluble
<b>PARTITION COEFFICIENT:</b>	Log Pow 3.2 (approx)
<b>DECOMPOSITION TEMPERATURE:</b>	No data available

## **10. STABILITY AND REACTIVITY**

<b>CHEMICAL STABILITY:</b>	Material is reacts with water. Reacts exothermically with amines, water, and alcohols.
<b>CONDITIONS TO AVOID:</b>	Heat, open flame, sparks.
<b>INCOMPATIBLE MATERIALS:</b>	Strong oxidizing agents, strong acids, amines, water, and alcohols.
<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b>	Oxides of carbon, oxides of nitrogen, hydrogen cyanide.
<b>HAZARDOUS POLYMERIZATION:</b>	Not applicable

## **11. TOXICOLOGICAL INFORMATION**

<b>EYE CORROSION/IRRITATION:</b>	Corrosive, rabbit.
<b>SKIN CORROSION/IRRITATION:</b>	Corrosive, rabbit.
<b>ACUTE TOXICITY:</b>	
<b>ACUTE ORAL TOXICITY:</b>	LD <sub>50</sub> = 959 mg/kg, rat.
<b>ACUTE DERMAL TOXICITY:</b>	LD <sub>50</sub> > 7000 mg/kg, rabbit.
<b>ACUTE INHALATION TOXICITY:</b>	LC <sub>50</sub> = 124 mg/ m <sup>3</sup> /4 hour, rat (vapor).
<b>SKIN SENSITIZATION</b>	Positive dermal sensitizer (guinea pig and Local Lymph Node Assay).
<b>RESPIRATORY SENSITIZATION</b>	Positive respiratory sensitizer (guinea pig and rat).
<b>GENETIC TOXICITY</b>	Negative in the Ames and the Mouse Micronucleus studies
<b>CARCINOGENICITY:</b>	A combined chronic toxicity and oncogenicity study in rats showed no carcinogenic potential after 2-year inhalation (whole-body) with vapor concentrations of from 0.005 to 0.164. This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be "probable" or "suspected" human carcinogens.



## **11. TOXICOLOGICAL INFORMATION (continued)**

<b>REPRODUCTIVE TOXICITY:</b>	Female rats were treated daily for 6 hours/day by inhalation (nose-only) with a similar material (isophorone diisocyanate (IPDI)) from day 6 to day 19 post-coitum to examine potential developmental toxicity effects of the test substance. Dose levels ranged from 0.25 to 4 mg/m <sup>3</sup> . Intrauterine development, gestation rate, implantation loss, litter size, sex distribution were not affected at exposure levels up to and including 4 mg/m <sup>3</sup> . Reduction of fetal weight was evident in the 4 mg/m <sup>3</sup> group. No-observed-adverse-effect concentrations (NOAECs) for both developmental and maternal toxicity were 1 mg/m <sup>3</sup> .
<b>STOT-SINGLE EXPOSURE:</b>	Inhalation is expected to be irritating.
<b>STOT-REPEATED EXPOSURE:</b>	No data available.

## **12. ECOLOGICAL INFORMATION**

<b>ECOTOXICITY:</b>	96hr LC <sub>50</sub> ≥ 83 mg/L, zebra fish 48hr EC <sub>50</sub> ≥ 89 mg/L, daphnia 72hr EC <sub>50</sub> > 77 mg/L green algae, growth rate
<b>PERSISTENCE AND DEGRADABILITY:</b>	Not readily biodegradable
<b>MOBILITY IN SOIL:</b>	No data available

## **13. DISPOSAL CONSIDERATION (INCLUDING CONTAINER)**

<b>RESIDUAL WASTE:</b>	Chemical additions, processing or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from Federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.
<b>CONTAMINATED VESSELS AND CONTAINERS:</b>	Rinse containers before disposal. Do not allow rinsate to enter the water systems. EPA Hazardous Waste = Yes

## **14. TRANSPORTATION INFORMATION**

<b>PROPER SHIPPING NAME:</b>	HEXAMETHYLENE DIISOCYANATE
<b>UN NUMBER:</b>	UN2281
<b>UN CLASS or DIVISION:</b>	6.1
<b>UN PACKING GROUP:</b>	II
<b>LABELS:</b>	Toxic
<b>EMERGENCY GUIDE#:</b>	156



## **15. REGULATORY INFORMATION**

### **Inventory Status:**

US (TSCA): Yes  
Canada (DSL): Yes  
EU (REACH): Yes  
Australia (AICS): Yes  
Japan (METI): Yes  
Korea (KECL): Yes

Where: Yes = all ingredients are listed on the inventory, Exempt = All ingredients are either on the inventory or exempt from the requirements of listing, No = Not determined, or one or more ingredients are not on the inventory and are not exempt from listing

### **SARA Title III Hazard Classes:**

Fire Hazard: No  
Reactive Hazard: No  
Release of Pressure: No  
Acute Health Hazard: Yes  
Chronic Health Hazard: Yes

### **SARA Extremely Hazardous Substances/CERCLA Hazardous Substances:**

Diisocyanates (generic group) 100%

**California Proposition 65:** This product does not contain any components that are regulated under Proposition 65.

## **16. OTHER INFORMATION INCLUDING INFORMATION ON PREPARATION AND REVISION OF THIS SDS**

### **National Fire Protection Association (“NFPA”) Hazard Ratings:**

Health: 3 (Serious)  
Flammability: 1 (Slight)  
Reactivity: 1 (Slight)

### **National Paint and Coatings Hazardous Materials Identification System (“HMIS”) Hazard Ratings:**

Health: 3 (Serious)  
Flammability: 1 (Slight)  
Physical Hazard: 1 (Slight)

### **HISTORY:**

Date previous SDS: None  
Date of issue: March 30, 2020  
Reasons for Revision: New product

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**16. OTHER INFORMATION INCLUDING INFORMATION ON PREPARATION AND REVISION OF THIS SDS (continued)**

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**END OF SAFETY DATA SHEET**