

# Chemical Safety Data Sheet

## Section 1 IDENTIFICATION

**GHS Product identifier:** Toluene diisocyanate.

**Other means of identification:** /

**Recommended use of the chemical and restrictions on use:** This product can be used as a raw material for the manufacture of polyurethane foams, coatings, rubbers and adhesives.

**Supplier's details: Yantai Juli Fine Chemical Co., Ltd.**

**Add:** NO.6 Laoshan Road , Economic Development Zone, Laiyang, Shandong Province, China

**Emergency phone number:** / 86-0535-7362358

## Section 2 HAZARDS IDENTIFICATION

**Classification of the substance or mixture:**

Acute toxicity, inhalation Category 2

Skin corrosion/irritation Category 2

Serious eye damage/eye irritation Category 2A

Sensitisation, respiratory Category 1

Sensitisation, skin Category 1

Carcinogenicity Category 2

Specific target organ toxicity, single exposure Category 3 (Respiratory tract irritation)

Hazardous to the aquatic environment, long-term hazard Category 3

**GHS Label elements, including precautionary statements:**

Symbol:



Signal word: Danger

Hazard statement(s): Fatal if inhaled. Causes skin irritation. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Suspected of causing cancer. May cause respiratory irritation. Harmful to aquatic life with long lasting effects.

Precautionary statement(s):

Prevention:

Do not breathe dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. [In case of inadequate ventilation] wear respiratory protection. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. Avoid release to the environment.

Response:

If on skin: Wash with plenty water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If inhaled: Remove person to fresh air

and keep comfortable for breathing. Immediately call a poison center/doctor. Specific treatment is urgent. 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. If exposed or concerned: Get medical advice/attention.

Storage:

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

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

**Other hazards which do not result in classification:** /

### Section 3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Concentration%
Tolylene diisocyanate	26471-62-5	99.9%~100%

### Section 4 FIRST AID MEASURES

#### Description of necessary first aid measures

**If inhaled:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician immediately.

**In case of skin contact:** Wash off with soap and plenty of running water. Consult a physician.

**In case of eye contact:** Rinse thoroughly with plenty of running water for at least 15 minutes and consult a physician.

**If ingestion:** Rinse mouth with water. Consult a physician immediately.

**Most important symptoms/effects, acute and delayed:** /

**Indication of immediate medical attention and special treatment needed, if necessary:** /

### Section 5 FIREFIGHTING MEASURES

**Suitable extinguishing media:** Use dry powder or carbon dioxide to extinguish.

**Special hazards arising from the chemical:** This material is combustible. It may burn at high temperature and fire and release toxic fumes.

**Special protective actions for fire-fighters:** Wear self-contained breathing apparatus for firefighting if necessary. Use water spray to cool unopened containers. In case of fire in the surroundings, use appropriate extinguishing media.

### Section 6 ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:** It is recommended that emergency personnel wear gas masks and anti-poison suits. Do not touch the spill directly.

**Environmental precautions:** Isolate contaminated areas and restrict access.

**Methods and materials for containment and cleaning up:** Small amount of leakage: adsorption with sand or other inert materials. Do not allow products to enter restricted areas such as sewers. A large amount of leakage: building a dike or digging a pit to contain. Transfer to a tank truck or special collector with a pump and transport to a waste disposal site for disposal.

### Section 7 HANDLING AND STORAGE

**Precautions for safe handling:** There should be sufficient local exhaust in workplace. Operators

should be trained and strictly follow the operating procedures. Operators are advised to wear gas masks, anti-poison suits and rubber gloves. Operators should load and unload lightly during handling to prevent damage to the package. There should be leakage treatment equipment in workplace. There may be harmful residues in empty containers.

**Conditions for safe storage, including any incompatibilities:** Store in a cool, dry, well-ventilated warehouse. Keep away from fire and heat. Protect from direct sunlight. The package should be sealed and not exposed to moisture. It should be stored separately from oxidants, flammable materials, etc., and should not be mixed. The storage area should be provided with suitable materials to contain spills.

#### Section 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters:**

Source	Material name	TWA	STEL
China Occupational Exposure Limits for Hazardous Agents in the Workplace	Tolylene-2,4-diisocyanate	0.1 (mg/m <sup>3</sup> )	0.2 (mg/m <sup>3</sup> )

**Appropriate engineering controls:** Close strictly and provide sufficient local exhaust.

**Individual protection measures**

**Eye/face protection:** Wear a gas mask.

**Skin protection:** Wear an anti-poison suit.

**Respiratory protection:** Air respirators should be worn during emergency rescue or evacuation.

**Thermal hazards:** /

#### Section 9 PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance (physical state, colour etc)</b>	Colorless transparent liquid.
<b>Odour</b>	Odor stimulation.
<b>Odour Threshold</b>	0.35~0.92mg/m <sup>3</sup>
<b>pH</b>	/
<b>Melting point/freezing point</b>	19.5~21.5°C.
<b>Initial boiling point and boiling range</b>	247°C.
<b>Flash point</b>	137°C.
<b>Evaporation rate</b>	/
<b>Flammability (solid, gas)</b>	/
<b>Upper/lower flammability or explosive limits</b>	Upper explosion limit: 9.5% (V); Lower explosion limit: 0.9% (V).
<b>Vapour pressure</b>	/
<b>Vapour density</b>	/
<b>Relative density</b>	1.21( water=1).
<b>Solubility(ies)</b>	React with water.
<b>Partition coefficient: n-octanol/water</b>	/
<b>Auto-ignition temperature</b>	/
<b>Decomposition temperature</b>	/
<b>Viscosity</b>	/

## Section 10 STABILITY AND REACTIVITY

### **Reactivity:** /

**Chemical stability:** This material is stable in normal temperature.

**Possibility of hazardous reactions:** The substance polymerizes with water and many chemicals in a hazardous way. This generates fire or explosion hazard. On combustion, forms toxic gases. This generates toxic hazard.

**Conditions to avoid:** Spark, static electricity and high temperature.

**Incompatible materials:** Flammable materials and oxidizers.

**Hazardous decomposition products:** Oxycarbides and nitrogen oxides.

## Section 11 TOXICOLOGICAL INFORMATION

**Information on the likely routes of exposure:** Inhaled, swallowed, skin, eyes.

**Symptoms related to the physical, chemical and toxicological characteristics:** /

**Acute health effects:** Accidental ingestion of the material may be harmful and cause cough, throat irritation and other symptoms. Fatal if inhaled. Oral intake may cause bellyache, nausea, vomit and other symptoms. This material may produce skin and eyes irritation.

**Chronic health effects:** Repeated or prolonged contact with skin may cause dermatitis. Repeated or prolonged contact may cause skin sensitization. Repeated or prolonged inhalation may cause asthma. This substance is possibly carcinogenic to humans.

**Numerical measures of toxicity(such as acute toxicity estimates):**

LD50(oral, rat): >2000 mg/kg

LD50(dermal, rabbit): >9400 mg/kg

## Section 12 ECOLOGICAL INFORMATION

### **Toxicity:**

Endpoint	Test Duration (hr)	Species	Value
LC50	96	Fish	0.4mg/L
EC50	48	Crustacea	12.5mg/L
EC50	96	Algae or other aquatic plants	3-230mg/L
NOEC	504	Crustacea	≥0.5mg/L

**Persistence and degradability:** Low (Half-life = 1 days).

**Bioaccumulative potential:** Low (BCF = 5).

**Mobility in soil:** Low (KOC = 9114).

**Other adverse effects:** /

## Section 13 DISPOSAL CONSIDERATIONS

**Disposal methods:** Dispose this product by safe burial. Damaged containers are prohibited from being reused and should be buried in the prescribed place.

## Section 14 TRANSPORT INFORMATION

**UN number:** 2078.

**UN proper shipping name:** TOLUENE DIISOCYANATE.

**Transport hazard class(es) :** 6.1.

**Packing group, if applicable: II.**

**Environmental hazards: /**

**Special precautions for user: /**

#### Section 15 REGULATORY INFORMATION

**Regulations:** This safety data sheet is in compliance with the following national standards: GB/T 16483-2008, GB 13690-2009, GB 18218-2009, GB 15258-2009, GB 6944-2012, GB 190-2009, GB/T 191-2008, GB 12268-2012, GA 57-1993, GB/T 15098-2008, GBZ 2.1-2007, GBZ 2.2-2007 as well as the following national regulations: Dangerous Goods Transport Administrative Regulation [Published by the Ministry of Railways, 2008], Dangerous Chemicals Safety Administrative Regulation [Published by the State Council, 2011].

#### Section 16 OTHER INFORMATION

<b>References</b>	UN Recommendations on the Transport of Dangerous Goods Model Regulations UN Globally Harmonized System of Classification and Labelling of Chemicals
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