

MATERIAL SAFETY DATA SHEET (MSDS)

From: Zhejiang Jiahua Energy Chemical Industry Co., Ltd.

No.1, No.2288, Binhai Road, Zhapu Economic Development Zone,
Jiaxing Harbour, Zhejiang, China

Tel:+86-573-82718029 Fax:+86-573-82719017

P-Toluenesulfonyl Isocyanate

1. Identification of substance

Product Name: P-Toluene sulfonyl isocyanate
Other Name: None
Chemical Name: P-Toluene sulfonyl isocyanate
Recommended Use: SPECIAL AGENT
Supplier Name: ZHEJIANG JIAHUA ENERGY CHEMICAL INDUSTRY CO., LTD
Address: N0.2288, BINHAI RD, ZHAPU ECONOMIC ZONE, JIAXING HARBOUR, ZHEJIANG, CHINA
Phone Number: +86-573-82718029
Fax Number: +86-573-82719017
WEB: <http://www.jhec.com.cn/en/profile.asp>
Emergency Phone Number: +86-573-85585119

2. Hazards Identification

GHS classification: Skin corrosion/irritation 2
Serious eye damage/eye irritation 2A
Sensitisation-respiratory 1
Specific target organ toxicity, single exposure 3

GHS Pictograms



Signal words Danger
Hazard statements H315: Cause skin irritation
H319: Causes serious eye irritation
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled

	H335:May cause respiratory irritation
Precautionary Statement Prevention	P261: Avoid breathing dust/fume/gas/mist/vapours/spray. P264: Wash hands thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves/protective clothing/eye protection/face protection. P284:[In case of inadequate ventilation]Wear respiratory protection. P302+P352: IF ON SKIN: Wash with plenty of water. P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P312: Call a POISON CENTER/doctor if you feel unwell. P321: Specific treatment (see the supplemental first aid instruction), P332+P313: If skin irritation occurs: Get medical advice/attention. P337+P313: If eye irritation persists: Get medical advice/attention. P342+P311: If experiencing respiratory symptoms: call a POISON CENTER/doctor. P362+P364: Take off immediately contaminated clothing and wash it before reuse.
Precautionary Statement Response	
Precautionary Statement Storage	P403+P233: Store in a well-ventilated place. Keep container tightly closed P405: Store locked up.
Precautionary Statement Disposal	P501: Dispose of contents/container in according with local regulation.
Other hazards which do not result in classification	Not available

3. Composition/information on ingredients

Component	CAS No	EINECS number	Mass(%)
P-toluene sulfonyl isocyanate	4083-64-1	223-810-8	98%

Note: 1. Unless a component presents a severe hazard, it does not need to be considered in the SDS if the concentration is less than 1%

4. First Aid Measures

NOTE TO PHYSICIAN	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation.
After inhalation	Move to fresh air. Oxygen or artificial respiration if needed. Get immediate medical attention.

After skin contact	Immediately flush skin with plenty of water. Remove and isolate contaminated clothing and shoes. If irritation persists, get medical attention immediately. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse.
After eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Assure adequate flushing of the eyes by separating the eyelids with fingers. Get medical attention immediately.
After ingestion	Do not induce vomiting without medical advice. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Loosen tight clothing such as a collar, tie, belt or waistband. Do not use mouth-to-mouth method if victim ingested the substance. Seek immediate medical attention.
Most important Symptoms/effects, acute and delayed	Causes skin irritation Causes serious eye irritation May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation

5. Fire Fighting Measures

Suitable extinguishing agents

Water spray, foam, CO₂, dry chemical powder, Sandy soil.

Special hazards caused by the material, its products of combustion or flue gases

Can be released in case of fire: SO_x, NO_x, CO_x

Protective equipment for fire-fighters

Self-contained breathing apparatus, full protective clothing, protective clothing and face mask, rubber gloves.

6. Accidental Release Measures

Person-related safety precautions

Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering. Keep unnecessary personnel away

Measures for environmental protection

Prevent further leakage or spillage if safe to do so. Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting Additional information

Pick up and arrange disposal in suitable container. Clean contaminated surface thoroughly.

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

7. Handling and Storage

HANDLING

Information for safe handling Avoid contact with skin, eyes, mucous membranes and clothing; Ensure adequate ventilation.
In case of insufficient ventilation, wear suitable respiratory equipment if ingested.

Information about protection against explosions and fires Keep away from heat, sources of ignition-No smoking. Take measures to prevent the build up of electrostatic charge.

STORAGE

Requirements to be met by storerooms and containers Keep in a cool, dry, well-ventilated place.
Keep tightly closed until used

Information about storage in one common facility Store away from incompatible substances such as alcohols, base, amine, strong oxidizer.
Protect from heat and dampness.
Store away from water.

Further information about storage conditions No data

8. Exposure Controls/Personal Protection

Limit Values for Exposure

Component	CAS number	ACGIH TLV-TWA	ACGIH TLV-STEL	NIOSH REL-TWA	NIOSH REL-STEL
P-Toluene sulfonyl isocyanate	4083-64-1	N.E	N.E.	N.E	N.E.

Appropriate engineering controls Use adequate ventilation to keep airborne concentrations low.

General protective and hygienic measures Do not get this material in contact with skin. Do not get this material on clothing. Avoid contact with eyes. Handle in accordance with good industrial hygiene and safety practice.
Wash hands before breaks and at the end of workday.

Personal protective equipment

Breathing equipment	When workers are facing high concentrations they must use appropriate certified respirators
Protection of hands	Wear appropriate chemical resistant gloves.
Eye/Face protection	Use safety glasses with side shields or safety goggles as mechanical barrier for prolonged exposure.
Body protection	Full set of anti chemical reagent overalls, choose body protection according to the amount and concentration of the dangerous substance at the work place.

Note: 1.N.E.means not established.

9. Physical and Chemical Properties

Appearance (physical state, colour etc):	colorless liquid
Odour	Not applicable
PH	Not applicable
Melting point/freezing point	Not applicable
Boiling point and boiling range	144 °C at 13 hPa-lit.275-278°C-lit
Flash point	145 °C
Evaporation rate	Not applicable
Flammability	Not-flammable
Upper/lower flammability or explosive limits	Not applicable
Vapour pressure	1 hPa at 100 °C
Vapour density (air=1)	Not applicable
Relative density	1.291 g/ml at 25°C
Solubility (water)	Not applicable
Partition coefficient: n-octanol/water	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not applicable
Viscosity	Not applicable

10. Stability and Reactivity

Chemical Stability:

This is a stable chemical under recommended storage conditions.

Possibility of hazardous reactions:

Severe reactions under the influence of water.

Conditions to Avoid(e.g. static discharge, shock or vibration): Water, moist air.

Incompatible materials:

Avoid contact with alcohols, base, amine, strong oxidizer

Hazardous Decomposition Products:

May include SO_x,NO_x,CO_x

11. Toxicological Information

Routes of Entry: Dermal contact, eye contact, inhalation, ingestion.

Acute Toxicity

P-Toluene Sulfonyl isocyanate: (CAS 4083-64-1)	LD50 (Oral, rat) : 2234 mg/kg LC50 Inhalation-rat-1h- >640ppm LC50 (Inhalation, rat) : N/A
Skin corrosion/Irritation	Causes skin irritation.
Serious eye damage/irritation	Causes serious eye irritation.
Respiratory or skin sensitization	May cause an allergy or asthma symptoms or breathing difficulties if inhaled
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
STOT-single exposure	Not classified
STOT-repeated exposure	May cause respiratory irritation
Aspiration hazard	Not classified
Chronic Effects	Not classified
Further Information	No data

12. Ecological Information

Ecotoxicity

Aquatic Toxicity	Not available
Persistence and degradability	Not available
Bioaccumulative potential	Not available
Mobility in soil	Not available
Additional Information	Not available

13. Disposal Considerations

WASTE DISPOSAL INSTRUCTIONS

Contact a licensed professional waste disposal service to dispose of this material. Dispose of in accordance with local environmental regulations or local authority requirements.

14. Transport Information

The Recommendation of Transport of Dangerous Goods(TDG)

UN Number	UN 2206
Proper Shipping Name	ISOCYANATES, TOXIC, N.O.S. (P-TOLUENE SULFONYL ISOCYANATE)
Class/Division	Division 6.1 Toxic Substances
Package Group	PG II
Subsidiary risk	None
labelling pictogram	



Maritime transport IMDG	Being same with TDG
Air transport ICAO-TI and IATA-DGR	Being same with TDG

15. Regulatory Information

European/International Regulations

OSHA:

Hazardous by definition of Hazard Communication Standard (29CFR 1910.1200)

EINECS Status:

This chemical is included in EINECS inventory.

EPA TSCA Status:

This chemical is included in TSCA public inventory.

Canadian DSL(Domestic Substances List):

This chemical is included in DSL.

HMIS(Hazardous Material Identification System Ratings):

Health: 3

Flammability: 0

Physical hazard: 0

Personal protection: F

(4. Severe Hazard; 3. Serious Hazard; 2. Moderate Hazard; 1. Slight Hazard; 0. Minimal Hazard)

WHMIS(Canadian Workplace Hazardous Material Identification System Ratings): GB 12268-2012 List of dangerous goods

This chemical is a dangerous goods on the GB 12268-2012 list of dangerous goods.

16. Other Information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Abbreviations and acronyms:**ADR:**

European Agreement concerning the International Carriage of Dangerous Goods by Road

RID:

Regulations Concerning the International Transport of Dangerous Goods by Rail

IMDG:

International Maritime Code for Dangerous Goods

IATA-DGR:

Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO-TI:

Technical Instructions by the "International Civil Aviation Organization" (ICAO)

EINECS:

European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Edit Date: 19.06.2013

Update and Revise: Original edition

Edit Standard:

Globally Harmonized System of Classification and Labeling for Chemicals Part 1.5

Revised Institution:

Zhejiang Academy of Science and Technology for Inspection and Quarantine