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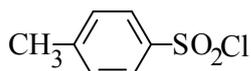
## Material Safety Data Sheet

### P-Toluenesulfonyl Chloride

## 1. Identification of substance

**Product Name:** P-Toluene sulfonyl chloride  
**Other Name:** Tosyl chloride  
**Chemical Name:** P-Toluene sulfonyl chloride  
**Recommended Use:** Intermediate of the dye and pharmacy  
**Supplier Name:** Hefei TNJ Chemical Industry Co.,Ltd.  
**Address:** D1508 Xincheng Business Center, Qianshan Rd. Hefei 230022 China

**Phone Number:** +86-551-65418695  
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**WEB:** [www.tnjchem.com](http://www.tnjchem.com)  
**Molecular Weight:** 190.6  
**Molecular Structure:**



## 2. Hazards Identification

**GHS classification:** Acute toxicity-oral 5  
Skin corrosion/irritation 1B  
Sensitisation-skin 1A

**GHS Pictograms**



**Signal words**

**Hazard statements**

<p>Danger</p> <p><b>Precautionary Statement Prevention</b></p>	<p>H303: May be harmful if swallowed</p> <p>H314: Causes severe skin burns and eye damage</p> <p>H317: May cause an allergic skin reaction</p> <p>P260: Do not breathe dust/fume/gas/mist/vapours/spray.</p> <p>P261: Avoid breathing dust/fume/gas/mist/vapours/spray.</p> <p>P264: Wash hands thoroughly after handling.</p> <p>P272: Contaminated work clothing should not be allowed out of the work place.</p> <p>P280: Wear protective gloves/protective clothing/eye protection/face protection.</p>
<p><b>Precautionary Statement Response</b></p>	<p>P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</p> <p>P302+P352: IF ON SKIN: Wash with plenty of water. P303+P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P310: Immediately call a POISON CENTER/doctor.</p> <p>P312: Call a POISON CENTER/doctor if you feel unwell. P321: Specific treatment (see the supplemental first aid instruction).,</p> <p>P333+P313: If skin irritation or rash occurs: Get medical advice/attention.</p> <p>P362+P364: Take off immediately contaminated clothing and wash it before reuse.</p>
<p><b>Precautionary Statement Storage</b></p>	<p>P363: Wash contaminated clothing before reuse. P405: Store locked up.</p>
<p><b>Precautionary Statement Disposal</b></p>	<p>P501: Dispose of contents/container in according with local regulation.</p>
<p><b>Other hazards which do not result in classification</b></p>	<p>Not available</p>

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### 3. Composition/information on ingredients

Component	CAS No	EINECS number	Percent
P-toluene sulfonyl chloride	98-59-9	202-684-8	99%

**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%

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### 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**

May be harmful if swallowed

**Symptoms/effects,  
acute and delayed**

Causes severe skin burns and eye damage  
May cause an allergic skin reaction

## 5. Fire Fighting Measures

**Suitable extinguishing agents**

Foam, CO<sub>2</sub>, dry chemical powder, Sandy soil, not suitable for water .

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

Can be released in case of fire: Carbon Oxides, Sulphur Oxides, Hydrogen Chloride Gas.

**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.

<b>Measures for cleaning/collecting</b>	Pick up and arrange disposal in suitable container. Clean contaminated surface thoroughly.
<b>Additional information</b>	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; handle under dry protective gas. Ensure workshop has good ventilation/exhaust device. In case of insufficient ventilation, wear suitable respiratory equipment if ingested. Avoid formation of dust and aerosols.
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	Store away from incompatible substances such as strong oxidizing agents and strong base.
Storage facility	. Protect from light. Protect from heat and dampness. Store away from water.

## 8. Exposure Controls/Personal Protection

Limit Values for Exposure

<b>Component</b>	<b>CAS number</b>	<b>ACGIH TLV-TWA</b>	<b>ACGIH TLV-STEL</b>	<b>NIOSH REL-TWA</b>	<b>NIOSH REL-STEL</b>
P-Toluene sulfonyl chloride	<b>98-59-9</b>	<b>N.E</b>	<b>N.E.</b>	<b>N.E</b>	<b>N.E.</b>

Note: 1. N.E. means not established

Appropriate engineering controls	Use adequate ventilation to keep airborne concentrations low
General protective and hygienic measures	Keep away from foodstuffs; beverages and food .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

## 9. Physical and Chemical Properties

Appearance (physical state, colour etc):	colourless crystalline solid
Odour	Not applicable
PH	Not applicable
Melting point/freezing point	66 - 69 °C
Boiling point and boiling range	134 °C at 13 hPa
Flash point	128 °C
Evaporation rate	Not applicable
Flammability	Not-flammable
Upper/lower flammability or explosive limits	Not applicable
Vapour pressure	1 hPa at 88 °C
Vapour density (air=1)	Not applicable
Relative density	1.400 g/cm <sup>3</sup>
Solubility (water)	Insoluble
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:

Not available.

Conditions to Avoid:

Excess heat, incompatible materials, light.

Incompatible materials:

Avoid contact with strong oxidizing agents and strong base..

Hazardous Decomposition Products:

May include Carbon oxides, Sulphur oxides, Hydrogen chloride gas.

## 11. Toxicological Information

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

Acute Toxicity

P-Toluene Sulfonyl Chloride: (CAS 98-59-9)	LD50 (Oral, rat) : 4680 mg/kg LD50 (Dermal, rabbit) : N/A LC50 (Inhalation, rat) : N/A
Skin corrosion/Irritation	Causes severe skin burns and eye damage.

corrosion/Irritation

Serious eye damage/irritation	Causes serious eye damage.
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damage/irritation

Respiratory or skin sensitization	May cause an allergic skin reaction
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Germ cell mutagenicity	Not classified
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Carcinogenicity	Not classified
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Reproductive toxicity	Not classified
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STOT-single exposure	Not classified
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STOT-repeated exposure	Not classified
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Aspiration hazard	Not classified
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Chronic Effects	
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Further Information	No data
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## 12. Ecological Information

Ecotoxicity	P-Toluene sulfonyl chloride(CAS 98-59-9)
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Test & Species

96 Hr LC50 fish> 100 mg/L

48 Hr EC50 Daphnia: N/A

72 Hr EC50 Algae:N/A

Aquatic Toxicity	Not available
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Persistence and degradability	Not available
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Bioaccumulative potential	Not available
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Mobility in soil	Not available
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Additional Information	Not available
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## 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 3261
Proper Shipping Name	CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.
Class/Division	(p-Toluenesulfonyl chloride)
Package Group	Class 8 Corrosive Substances
Subsidiary risk	PG II
labelling pictogram	None



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.

**WHMIS(Canadian Workplace 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)

**HMIS(Hazardous Material Identification System Ratings): E****GB 12268-2012 List of dangerous goods**

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

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## 16. Other Information

MSDS Creation Date: 2013/7/4    Revision #1 Date: 2013/7/4

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 Standard:**

Globally Harmonized System of Classification and Labeling for Chemicals Part 1.5