



# Material Safety Data Sheet

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : P-Toluene Sulfonyl Chloride  
CAS-No. : 98-59-9  
Synonym: PTSC; P-Toluenesulfonyl Chloride; Tosyl Chloride;  
Para Toluene Sulfonyl Chloride; P-Toluene Sulphonyl Chloride.  
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## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula :  $\text{CH}_3\text{C}_6\text{H}_4\text{SO}_2\text{Cl}$

CAS-No.	EC-No.	Index-No.	Concentration
P-Toluene Sulfonyl Chloride			
98-59-9	202-684-8		>99%

## 3. HAZARDS IDENTIFICATION

### Potential Acute Health Effects:

Extremely hazardous in case of skin contact (irritant), of eye contact (irritant). Very hazardous in case of ingestion, of inhalation. Hazardous in case of skin contact (corrosive, permeator). The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

### Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

## 4. FIRST AID MEASURES

### Eye Contact:

Check for and remove any contact lenses. Do not use an eye ointment. Seek medical attention.

### Skin Contact:

If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical got

on the victim's exposed skin, such as the hands : Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

**Serious Skin Contact:**

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

**Inhalation:**

Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

**Serious Inhalation:**

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

**Ingestion:**

Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

**Serious Ingestion:**

Not available.

## 5. FIRE-FIGHTING MEASURES

**Flammability of the Product:** May be combustible at high temperature.

**Auto-Ignition Temperature:** Not available.

**Flash Points:** Not available.

**Flammable Limits:** Not available.

**Products of Combustion:** These products are carbon oxides (CO, CO<sub>2</sub>), sulfur oxides (SO<sub>2</sub>, SO<sub>3</sub>...).

**Fire Hazards in Presence of Various Substances:** Not available.

**Explosion Hazards in Presence of Various Substances:**

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

**Fire Fighting Media and Instructions:**

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

**Special Remarks on Fire Hazards:** Not available.

**Special Remarks on Explosion Hazards:** Not available.

## 6. ACCIDENTAL RELEASE MEASURES

**Small Spill:**

Use appropriate tools to put the spilled solid in a convenient waste disposal container.

**Large Spill:**

Corrosive solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material.

Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed.

Eliminate all ignition sources. Call for assistance on disposal.

## 7. HANDLING AND STORAGE

**Precautions:**

Keep container dry. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe

dust. Never add water to this product In case of insufficient ventilation, wear suitable respiratory equipment If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes Keep away from incompatibles such as moisture.

**Storage:**

Keep container dry. Keep in a cool place. Ground all equipment containing material. Corrosive materials should be stored in a separate safety storage cabinet or room.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls:**

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protection:**

Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:**

Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:**

Not available.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state and appearance:</b>	Solid.
<b>Odor:</b>	Not available.
<b>Taste:</b>	Not available.
<b>Molecular Weight:</b>	190.65 g/mole
<b>Color:</b>	Not available.
<b>pH (1% soln/water):</b>	Not available.
<b>Boiling Point:</b>	Decomposes.
<b>Melting Point:</b>	67°C (152.6°F)
<b>Critical Temperature:</b>	Not available.
<b>Specific Gravity:</b>	Not available.
<b>Vapor Pressure:</b>	Not applicable.
<b>Vapor Density:</b>	Not available.
<b>Volatility:</b>	Not available.
<b>Odor Threshold:</b>	Not available.
<b>Water/Oil Dist. Coeff.:</b>	Not available.
<b>Ionicity (in Water):</b>	Not available.
<b>Dispersion Properties:</b>	Not available.
<b>Solubility:</b>	Not available.

## 10. STABILITY AND REACTIVITY

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Not available.

**Incompatibility with various substances:** Reactive with moisture.

**Corrosivity:** Non-corrosive in presence of glass.

**Special Remarks on Reactivity:** Not available.

**Special Remarks on Corrosivity:** Not available.

**Polymerization:** No.

## 11. TOXICOLOGICAL INFORMATION

**Routes of Entry:** Dermal contact. Eye contact. Inhalation. Ingestion.

**Toxicity to Animals:**

LD50: Not available. LC50: Not available.

**Chronic Effects on Humans:** Not available.

**Other Toxic Effects on Humans:**

Extremely hazardous in case of skin contact (irritant). Very hazardous in case of ingestion, of inhalation.

Hazardous in case of skin contact (corrosive, permeator).

**Special Remarks on Toxicity to Animals:** Not available.

**Special Remarks on Chronic Effects on Humans:** Not available.

**Special Remarks on other Toxic Effects on Humans:** Not available.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Products of Biodegradation:**

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The products of degradation are more toxic.

**Special Remarks on the Products of Biodegradation:** Not available.

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal:**

## 14. TRANSPORT INFORMATION

### IATA

Shipping Name: CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (P-TOLUENESULFONYLCHLORIDE)

Hazard Class: 8

UN Number: 3261

Packing Group: II

### IMO

Shipping Name: CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S., (P-TOLUENESULFONYL CHLORIDE)

Hazard Class: 8

UN Number: 3261

Packing Group: II

### RID/ADR

Shipping Name: CORROSIVE SOLID, N.O.S.

Hazard Class: 8

UN Number: 1759

Packing group: II

## 15. REGULATORY INFORMATION

### European/International Regulations

#### European Labeling in Accordance with EC Directives

**Hazard Symbols:** C

**Risk Phrases:**

R 29 Contact with water liberates toxic gas.

R 34 Causes burns.

**Safety Phrases:**

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

#### WGK (Water Danger/Protection)

CAS# 98-59-9: 1

#### Canada

CAS# 98-59-9 is listed on Canada's DSL List.

CAS# 98-59-9 is not listed on Canada's Ingredient Disclosure List.

#### US FEDERAL

##### TSCA

CAS# 98-59-9 is listed on the TSCA inventory.

## 16. OTHER INFORMATION

### Further information

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