

Material Safety Data Sheet

p-Toluenesulfonyl Isocyanate

Section 1: Chemical Product and Company Identification

MSDS Name: p-Toluenesulfonyl Isocyanate, 98+%

Synonyms: Tosyl isocyanate; PTSl; 4-Isocyanatosulphonyltoluene; Benzenesulfonyl isocyanate, 4-methyl-; Tosyl isocyanate, para-

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Section 2: Composition and Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
4083-64-1	p-Toluenesulfonyl isocyanate	98.0+	223-810-8
98-59-9	Tosyl chloride	1.0-	202-684-8
108-90-7	Chlorobenzene	1.0-	203-628-5

Section 3: Hazards Identification

Appearance: clear, colorless liquid.

Danger! Reacts violently and/or explosively with water, steam or moisture. Causes eye, skin, and respiratory tract irritation. May cause allergic respiratory and skin reaction.

Potential Health Effects

Eye: Causes eye irritation. Lachrymator (substance which increases the flow of tears). When

substance becomes wet or comes in contact with moisture of the mucous membranes, it will cause irritation. May cause chemical conjunctivitis.

Skin: May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Contact with skin causes irritation and possible burns, especially if the skin is wet or moist.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea.

Inhalation: Causes respiratory tract irritation. Can produce delayed pulmonary edema. May cause respiratory sensitization.

Chronic: Effects may be delayed.

Section 4: First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid. Do NOT allow victim to rub eyes or keep eyes closed.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If water-reactive products are embedded in the skin, no water should be applied. The embedded products should be covered with a light oil.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5: Fire and Explosion Data

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Water reactive. Material will react with water and may release a flammable and/or toxic gas.

Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. May ignite or explode on contact with steam or moist air.

Extinguishing Media: Use dry sand or earth to smother fire. Use foam, dry chemical, or carbon

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Section 6: Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation. Do not expose spill to water.

Section 7: Handling and Storage**Handling:**

Remove contaminated clothing and wash before reuse.

Use only in a well-ventilated area.

Do not allow water to get into the container because of violent reaction.

Avoid contact with eyes, skin, and clothing. Keep container tightly closed.

Avoid ingestion and inhalation.

Do not allow contact with water.

Keep from contact with moist air and steam.

Storage:

Store in a tightly closed container.

Store in a cool, dry, well-ventilated area away from incompatible substances.

Keep away from water.

Section 8: Exposure Controls/Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
p-Toluenesulfonyl Isocyanate	none listed	none listed	none listed

OSHA Vacated PELs: p-Toluenesulfonyl isocyanate: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9: Physical and Chemical Properties

Physical State: Liquid

Appearance: clear, colorless

Odor: None reported.

pH: Not available.

Vapor Pressure: 1 mm Hg @ 100 deg C

Vapor Density: 6.80

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 144 deg C @ 10.00 mmHg

Freezing/Melting Point: Not available.

Decomposition Temperature: Not available.

Solubility: Reacts.

Specific Gravity/Density: 1.2950 g/cm³

Molecular Formula: C₈H₇NO₃S

Molecular Weight: 197.21

Section 10: Stability and Reactivity Data

Chemical Stability: Stable under normal temperatures and pressures. Combines vigorously or explosively with water.

Conditions to Avoid: Incompatible materials, excess heat, exposure to moist air or water.

Incompatibilities with Other Materials: Water, alcohols, amines, acids, strong bases, strong oxidizing agents.

Hazardous Decomposition Products: Hydrogen cyanide, nitrogen oxides, carbon monoxide, oxides of sulfur, oxides of sulfur, carbon dioxide, nitrogen gas.

Hazardous Polymerization: Has not been reported.

Section 11: Toxicological Information

RTECS#:

CAS# 4083-64-1: DB9032000

LD50/LC50:

CAS# 4083-64-1:

Draize test, rabbit, eye: 100 uL Moderate;

Draize test, rabbit, skin: 500 uL/24H Mild;

Inhalation, rat: LC50 = >640 ppm/1H;

Oral, rat: LD50 = 2234 mg/kg;

.

Carcinogenicity:

CAS# 4083-64-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found

Teratogenicity: No information found

Reproductive Effects: No information found

Mutagenicity: No information found

Neurotoxicity: No information found

Other Studies:

Section 12: Ecological Information

No information available.

Section 13: Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14: Transport Information

Not regulated as dangerous goods by IMDG,ADR,RID or IATA.

14.1 UN number

ADR/RID: - IMDG: - IATA: -

14.2 UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: - IMDG: - IATA: -

14.4 Packaging group

ADR/RID: - IMDG: - IATA: -

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

no data available

Section 15: Other Regulatory Information**US FEDERAL****TSCA**

CAS# 4083-64-1 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 4083-64-1 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations**European Labeling in Accordance with EC Directives****Hazard Symbols:**

XN

Risk Phrases:

R 14 Reacts violently with water.

R 36/37/38 Irritating to eyes, respiratory system and skin.

R 42 May cause sensitization by inhalation.

OSHA:

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Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if we have been advised of the possibility of such damages.