AK Scientific, Inc.

Safety Data Sheet

p-Toluenesulfonyl chloride

1. Identification

Product name	p-Toluenesulfonyl chloride
Catalog#	71239
IUPAC name	4-methylbenzenesulfonyl chloride
Product use/Restrictions on use	For laboratory research use. Not for drug or household use.
Company	AK Scientific, Inc. 30023 Ahern Ave. Union City, CA 94587
Telephone	(510) 429-8835
Fax	(510) 429-8836
Website	www.aksci.com
Emergency contact number:	(510) 429-8835

2. Hazards Identification

GHS Classification

Skin irritation (Category 2)
Serious eye damage (Category 1)

Pictogram

Signal word

Danger

Hazard statement(s)

H315	Causes skin irritation.
H318	Causes serious eye damage.

Precautionary statement(s)

P264	Wash skin thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P321	Specific treatment (see supplemental first aid instructions on this label).
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.

Hazards not otherwise classified (HNOC) or not covered by GHS

None

3. Composition/Information on Ingredients

Synonyms:	Tosyl chloride; 4-Toluenesulfonyl chloride
CAS#:	[98-59-9]
Purity:	98% (HPLC)
EINECS#:	202-684-8

4. First Aid Measures

General information: Immediately remove any clothing contaminated by the product. Move out of dangerous area. Consult a physician and show this safety data sheet.
Inhalation: Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Obtain medical aid.
Skin contact: Immediately flush skin with running water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Obtain medical aid immediately.
Eye contact: Immediately flush open eyes with running water for at least 15 minutes. Obtain medical aid immediately.
Ingestion: Do NOT induce vomiting without medical advice. Rinse mouth with water. Never administer anything by mouth to an unconscious person. Obtain medical aid immediately.
Most important symptoms and effects, both acute and delayed: No further information available. Please see headings 2 and 11.
Indication of any immediate medical attention and special treatment needed: No further information available.

5. Fire Fighting Measure

Suitable extinguishing media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

Specific hazards arising from the chemical: Hydrogen chloride, Sulfur oxides, Carbon oxides

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

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Wear protective equipment and keep unprotected personnel away. Ensure adequate ventilation. Remove all sources of ignition. Prevent further leak or spill if safe to do so. For personal protective equipment, please refer to heading 8.

Environmental precautions: Do not let product enter drains, other waterways, or soil.

Methods and materials for containment and cleaning up: Prevent further leak or spill if safe to do so. Vacuum, sweep up, or absorb with inert material and place into a suitable disposal container. Consult local regulations for disposal. Also, see heading 13.

7. Handling and Storage

Precautions for safe handling: Avoid contact with skin, eyes, and personal clothing. Wash hands thoroughly after handling. Avoid breathing fumes. Use only with adequate ventilation. Wear suitable protective clothing, gloves, and eye/face protection. Keep away from sources of ignition. Minimize dust generation and accumulation. Keep container tightly closed. Open and handle container with care. Do not eat, drink, or smoke while handling.

Conditions for safe storage, including any incompatibilities: Store in a tightly-closed container when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from sources of ignition. Moisture sensitive.

8. Exposure Controls/Personal Protection

Exposure limits

OSHA PEL:	Not available.
NIOSH REL:	Not available.
ACGIH TLV:	Not available.

Appropriate engineering controls: Avoid contact with skin, eyes, and clothing. Wash hands before breaks and immediately after handling the product. Facilities storing or utilizing this material should be equipped with an eyewash fountain. Use adequate ventilation to keep airborne concentrations low.

Personal protection

Eyes:	Wear chemical splash goggles.
Hand:	Wear protective gloves.
Skin and body:	Wear protective lab coat and boots.
Respiratory:	Use NIOSH/MSHA or CEN approved respirator.

9. Physical and Chemical Properties

Physical State:	Colorless to white crystals, crystalline powder or crystals with chunks
Molecular Formula:	C7H7ClO2S
Molecular Weight:	190.65
Odor:	Not available.
pH:	Not available.
Boiling Point Range:	134 ℃ (10mmHg)

Freezing/Melting Point:	65-71 ℃
Flash Point:	128 ℃
Evaporation Rate:	Not available.
Flammability (solid, gas):	Please see section 2.
Explosive limits:	Not available.
Vapor Pressure:	1mmHg (88 ℃)
Vapor Density:	Not available.
Solubility:	Soluble in alcohol, benzene, and ether. Insoluble in water
Relative Density:	1.35
Refractive Index:	Not available.
Volatility:	Not available.
Auto-ignition temperature:	Not available.
Decomposition Temperature:	Not available.
Partition Coefficient:	Not available.

10. Stability and Reactivity

Reactivity	Not available.
Chemical stability	Stable under recommended temperatures and pressures.
Possibility of hazardous reactions	Not available.
Conditions to avoid	Dust generation. Moisture and water.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Hydrogen chloride, Sulfur oxides, Carbon oxides

11. Toxicological Information

RTECS#	DB8929000
Acute toxicity	LD50 Oral-Rat-4,680mg/kg
Routes of exposure	Inhalation, eye contact, skin contact, ingestion.
Symptoms related to the physical, chemical and toxicological characteristics	Skin contact may result in inflammation characterized by itching, scaling, reddening, blistering, pain or dryness. Eye contact may result in redness, pain or severe eye damage. Inhalation may cause irritation of the lungs and respiratory system. Overexposure may result in serious illness or death.

Carcinogenicity

IARC	Not classified.
NTP	Not listed.
OSHA	Not listed.
Acute toxic effects	Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

12. Ecological Information

Ecotoxicity	Toxicity to fish: LC50 - Danio rerio (zebra fish) - >100 mg/L–96h
Persistence and degradability	Not available.
Bioaccumulative potential	Not available.
Mobility in soil	Not available.
Other adverse effects	Not available.

13. Disposal Considerations

Disposal of waste: Chemical waste generators must determine whether a discarded chemical is classified as hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification. Observe all federal, state and local regulations when disposing of the substance.

Disposal of packaging: Do not reuse containers. Dispose of as unused product.

14. Transport Information

DOT (U.S.)

UN number	3261
UN proper shipping name	Corrosive solid, acidic, organic, n.o.s. (p-Toluenesulfonyl chloride)
Transport hazard class(es)	8
Packing group	III

15. Regulatory Information

TSCA Chemical Inventory:	This product is on the EPA Toxic Substance Control Act (TSCA) inventory. The product is supplied solely for use in research and development by or under the supervision of a technically qualified individual as defined in 40 CFR 720 et seq. The health risks have not been fully determined. Any information that is or becomes available will be supplied on an SDS sheet.	
California Proposition 65:	Not listed.	
EINECS #:	202-684-8	
NFPA rating:	**Health:**	3
	Flammability:	1
	Instability:	0

16. Additional Information

Revision Date: 12/1/2014
Printed Date: 1/8/2015

Disclaimer:
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 AK Scientific 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 AK Scientific has been advised of the possibility of such damages.