

ALADDIN SCIENTIFIC CORPORATION  
14078 Meridian Parkway, Riverside, CA. 92518

# SAFETY DATA SHEET

Version: v1  
Revision Date: 2024-10-14  
Print Date: 2024-10-14

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : Tolylene-2,4-diisocyanate  
Product Number : T467340  
Brand : aladdin  
CAS-No. : 584-84-9

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances.

### 1.3 Company

Company : ALADDIN SCIENTIFIC CORPORATION  
Address : 14078 Meridian Parkway,  
Riverside, CA. 92518  
Telephone : +1 (833) 552-7181  
Fax : no data available

### 1.4 Emergency telephone number

CHEMTREC®, Inside the USA : 1-800-424-9300  
CHEMTREC®, Outside the USA :

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)  
Acute toxicity, inhalation (Class 1), H330  
Skin corrosion/irritation (Category 2), H315  
Severe eye injury/eye irritation (Category 2A), H319  
Respiratory hypersensitivity (Category 1), H334  
Skin allergy (Category 1), H317  
Carcinogenicity (Category 2), H351  
Specific target organ systemic toxicity (single exposure) (Category 3), respiratory irritation, H335  
Acute (short-term) aquatic hazard (Category 3), H402  
Long term aquatic hazards (Category 3), H412

### 2.2 GHS Label elements, including precautionary statements

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Pictogram



Signal word

Danger

Hazard statement(s)

H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H330	Fatal if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation
H351	Suspected of causing cancer
H412	Harmful to aquatic life with long lasting effects
Precautionary statement(s)	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash hands [and ...] thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
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.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P333+P313	IF SKIN irritation or rash 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/...
P410	Protect from sunlight.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container to an approved waste disposal plant.
P304+P340+P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

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

### SECTION 3: Composition/information on ingredients

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

### 3.1 Substances

Synonyms	: 2,4-Diisocyanatotoluene; 4-Methyl-m-phenylene diisocyanate, TDI, BASF LUPRANATE T80, 4-Methyl-1,3-phenylene diisocyanate;Toluene-2,4-diisocyanate
Formula	: C <sub>9</sub> H <sub>6</sub> N <sub>2</sub> O <sub>2</sub>
Molecular weight	: 174.16
CAS No.	: 584-84-9
EC-NO.	: no data available

Component	Classification	Concentration
Tolylene-2,4-diisocyanate	no data available	≥95%

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General advice

Show this material safety data sheet to the doctor in attendance.

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

In case of skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

In case of eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

If swallowed

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

no data available

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media

Use dry chemical, carbon dioxide or alcohol-resistant foam.

Unsuitable extinguishing media

no data available

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## 5.2 Special hazards arising from the substance or mixture

Carbon oxides nitrogen oxide Flammable Vapor is heavier than air, so it can diffuse along the ground. Under rapid heating, it forms an explosive mixture with air When a fire occurs, it may cause the generation of hazardous gases or vapors

## 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

## 5.4 Further information

no data available

---

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### 6.2 Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

### 6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

### 6.4 Reference to other sections

For disposal see section 13.

---

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Operators should be specially trained and strictly abide by the operating procedures. Operation and disposal should be carried out in a place with local ventilation or general ventilation facilities. Avoid eye and skin contact and avoid breathing vapor. See Section 8 for personal protective measures. Keep away from fire and heat sources, and smoking is strictly prohibited in the workplace. Use explosion-proof ventilation systems and equipment. If canning is required, the flow rate should be controlled, and there should be a grounding device to prevent the accumulation of static electricity. Avoid contact with incompatible substances such as oxidizing agents (see section 10 for incompatible substances). When handling, it should be lightly loaded and unloaded to prevent damage to packaging and containers. Empty containers may be harmful residues. Wash hands after use and prohibit eating or drinking in the workplace. Equipped with the corresponding variety and quantity of fire fighting equipment and leakage emer

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## 7.2 Conditions for safe storage, including any incompatibilities

2-8 °C storage, sensitive to light; Sensitivity to humidity; Heat sensitive, avoiding light, and storing with argon

## 7.3 Specific end use(s)

no data available

---

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

### 8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU)2016/425 and the standard EN 374 derived from it.

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a fullface particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection,use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN(EU).

Control of environmental exposure

If safety requires, prevent further leakage or spillage. Do not let the product enter the sewer.

---

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |                    |  |
|--------------------|--|
| a) Appearance      | form: liquid color: White or Colorless powder to lump to clear |
| b) Odour           | no data available  |
| c) Odour Threshold | no data available  |

---

Phone: +1 (833) 552-7181 Email: QualityAssurance@aladdinsci.com Website: <https://www.aladdinsci.com/>

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

d) pH	no data available
e) Melting point/freezing point	20 °C
f) Initial boiling point and boiling range	251 °C
g) Flash point	132°C
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/lower flammability or explosive limits	no data available
k) Vapour pressure	no data available
l) Vapour density	no data available
m) Relative density	1.214g/mL at 25°C
n) Water solubility	no data available
o) Partition coefficient: n-octanol/water	no data available
p) Auto-ignition temperature	no data available
q) Decomposition temperature	no data available
r) Viscosity	no data available
s) Explosive properties N	no data available
t) Oxidizing properties N	no data available

## 9.2 Other safety information

no data available

---

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

no data available

### 10.4 Conditions to avoid

Heating. Strong heating

### 10.5 Incompatible materials

Alcohols, strong bases, amines, acids, strong oxidizing agents

### 10.6 Hazardous decomposition products

no data available

---

## SECTION 11: Toxicological information

Phone: +1 (833) 552-7181 Email: QualityAssurance@aladdinsci.com Website: <https://www.aladdinsci.com/>

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## 11.1 Information on toxicological effects

### Acute toxicity

LD50 Oral Rat Male 5110 mg/kg

(OECD Testing Guidelines 401)

Remarks: (Compared with similar compounds)

Corresponding values have been specified for the following substances: toluene diisocyanate

LC50 inhalation - rats - males and females -4 hours -0.12 mg/l - vapor

(OECD Testing Guidelines 403)

Remarks: (Compared with similar products)

LD50 transdermal - rabbit - male and female ->9400 mg/kg

(OECD Testing Guidelines 402)

Remarks: (Compared with similar products)

Corresponding values have been specified for the following substances: toluene diisocyanate

### Skin corrosion/irritation

Skin - Rabbit Result: Irritating to the skin- 24 hours Remarks: (RTECS) Note: Classified according to EU CLP

Regulation 1272/2008, Annex 6 (Tables 3.1/3.2)

### Serious eye damage/eye irritation

Eyes - Rabbit Result: Irritating to the eyes. (Draize Test) Remarks: (ECHA) Note: Classified according to EU CLP

Regulation 1272/2008, Annex 6 (Tables 3.1/3.2)

### Respiratory or skin sensitisation

Open Intradermal Test - Guinea Pig Results: Positive Remarks: (ECHA) Classified according to EU CLP Regulation

1272/2008, Annex 6 (Table 3.1/3.2) Inhalation may cause allergic or asthma symptoms or breathing difficulties.

Classification according to EU CLP Regulation 1272/2008, Annex 6 (Tables 3.1/3.2)

### Germ cell mutagenicity

Test type: Ames test Testing system: Salmonella typhimurium Metabolic activation: with or without metabolic

activation effect Method: OECD Testing Guidelines 471 Result: Positive Test type: In vivo micronucleus test Species:

Rat Route of exposure: inhalation Method: Mutagenicity (micronucleus test) Result: Negative Test type:

Extraordinary DNA synthesis test Species: Rat Route of exposure: inhalation Result: Negative Remarks: (ECHA) Test

type: micronucleus test Species: Mice Route of exposure: inhalation Method: OECD Testing Guidelines 474 Result:

Negative

### Carcinogenicity

Suspected of carcinogenesis.

### Reproductive toxicity

no data available

### Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation- respiratory tract Note: Classified according to EU CLP Regulation

1272/2008, Annex 6 (Tables 3.1/3.2)

### Specific target organ toxicity - repeated exposure

no data available

### Aspiration hazard

no data available

### Additional Information

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Registration of toxic effects of chemical substances: CZ6300000

Cough, shortness of breath, headache, nausea, vomiting

To our knowledge, this chemical, physical, and toxic property has not been fully studied.

## SECTION 12: Ecological information

### 12.1 Toxicity

Static toxicity test for fish LC50- *Oncorhynchus mykiss* (rainbow trout) -133 mg/l -96 hours  
(OECD Testing Guidelines 203)

Remarks: (Compared with similar products)

Toxicity to *Daphnia* and other aquatic invertebrates

Static test EC50- *Daphnia magna* -12.5 mg/l -48 hours

(OECD Testing Guidelines 202)

Remarks: (Compared with similar products)

Toxicity to algae EC50- *Skeletonema costatum* -3230 mg/l -96 hours

(OECD Testing Guidelines 201)

Remarks: (Compared with similar products)

Toxicity to bacteria EC50- Activated sludge ->100 mg/l -3 hours

(OECD Testing Guidelines 209)

Remarks: (Compared with similar products)

For *Daphnia* and other aquatic invertebrates

Toxicity of vertebrates (chronic toxicity)

Static test EC50- *Daphnia magna* -2 mg/l -21 days

(OECD Testing Guidelines 211)

Remarks: (Compared with similar products)

### 12.2 Persistence and degradability

Aerobic biochemical oxygen demand - exposure time 28 days Result: 0% - non biodegradable (OECD Test Guide 302C) Remarks: (Compared with similar compounds)

### 12.3 Bioaccumulative potential

*Cyprinus carpio* -60 days At 24.8 ° C -0.8 mg/l (2,4-diisocyanate toluene) Biological enrichment factor (BCF): 180  
(OECD Testing Guidelines 305)

### 12.4 Mobility in soil

no data available

### 12.5 Results of PBT and vPvB assessment

no data available

### 12.6 Other adverse effects

no data available



ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

**SECTION 13:****13.1 Disposal considerations****Product**

Recycle to process, if possible. Consult your local regional authorities and an expert of disposal. You may be able to dissolve or mix material with a combustible solvent and little by little burn in a chemical incinerator equipped with an afterburner and scrubber system. If a large amount of the substance is burned at a time, an explosion may occur. Observe all federal, state and local regulations when disposing of the substance.

**Contaminated packaging**

Dispose of as unused product.

**SECTION 14: Transport information****DOT (US)**

UN number: 2078

Packing group: II

Class: 6.1

Proper shipping name: TOLUENE

Reportable Quantity(RQ): no data available

Poison Inhalation Hazard: no data available

DIISOCYANATE

Environmental Hazards: no

**IMDG**

UN number: 2078

Packing group: II

EMS-No: no data available

Proper shipping name: TOLUENE DIISOCYANATE

**IATA**

UN number: 2078

Packing group: II

Class: 6.1

Proper shipping name: TOLUENE DIISOCYANATE

**SECTION 15: Regulatory information**

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

**SECTION 16: Other information**

<b>Prepared By</b>	Regulatory Affairs ALADDIN SCIENTIFIC CORPORATION Email: QualityAssurance@aladdinsci.com
<b>Creation Date</b>	24-Nov-2023
<b>Revision Date</b>	14-Oct-2024
<b>Print Date</b>	14-Oct-2024
<b>Revision Summary</b>	SDS sections updated v1

---

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Disclaimer

Copyright Aladdin Co. Ltd. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Aladdin Co. Ltd. and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.