SAFETY DATA SHEET

Revision Date 26-March-2024 **Revision Number** 5

1. Identification

Product Name **Toluene-2,6-diisocyanate**

Cat No. : **L12745**

CAS-No 91-08-7
Synonyms 2-Methyl-1,3-phenylene diisocyanate

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company
Importer/Distributor
Fisher Scientific
112 Colonnade Road,
Ottawa, ON K2E 7L6,
Canada
Tel: 1-800-234-7437

Emergency Telephone Number
For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No. **US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification

WHMIS 2015 Classification Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

Acute Inhalation Toxicity	Category 2
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Respiratory Sensitization	Category 1
Skin Sensitization	Category 1
Carcinogenicity	Category 1B
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	

Label Elements

Signal Word
Danger

Hazard Statements
Fatal if inhaled
Causes skin irritation
May cause an allergic skin reaction
Causes serious eye irritation
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause respiratory irritation
May cause cancer

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust/fumes/gas/mist/vapours/spray
Wash face, hands and any exposed skin thoroughly after handling
Use only outdoors or in a well-ventilated area
Contaminated work clothing should not be allowed out of the workplace
Wear respiratory protection
Response
IF ON SKIN: Wash with plenty of soap and water
IF INHALED: Remove person to fresh air and keep comfortable for breathing
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER/doctor
Take off contaminated clothing and wash it before reuse
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Toluene 2,6-diisocyanate	91-08-7	97

4. First-aid measures

Eye Contact Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.

Inhalation Remove from exposure, lie down. Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediate medical attention is required.

Ingestion Call a physician immediately. Clean mouth with water.

Most important symptoms/effects May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Water spray. Carbon dioxide (CO_2). Dry chemical. Chemical foam.

Unsuitable Extinguishing Media No information available

Flash Point > 110 °C / > 230 °F

Method - No information available

Autoignition Temperature 620 °C / 1148 °F

Explosion Limits

Upper	9.5%
Lower	0.9%
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical
Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
Nitrogen oxides (NOx). Carbon monoxide (CO). Carbon dioxide (CO_2). Hydrogen cyanide (hydrocyanic acid).
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
4	1	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment as required.
Environmental Precautions See Section 12 for additional Ecological Information.

Methods for Containment and Clean Up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Do not breathe dust. Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Handle product only in closed system or provide appropriate exhaust ventilation.

Storage. Keep in a dry place. Keep container tightly closed. Keep under nitrogen. Keep refrigerated. Incompatible Materials. Acids. Strong oxidizing agents. Strong bases. Alcohols. Amines.

8. Exposure controls / personal protection

Exposure Guidelines

Component	Alberta	British Columbia	Ontario TWAEV	Quebec	ACGIH TLV	OSHA PEL	NIOSH
Toluene 2,6-diisocyanate	Ceiling: 0.02 ppm	TWA: 0.005 ppm Ceiling: 0.01	TWA: 0.005 ppm STEL: 0.005		TWA: 0.001 ppm STEL: 0.005		

	Ceiling: 0.1 mg/m³ TWA: 0.005 ppm TWA: 0.04 mg/m³	ppm Skin	ppm CEV: 0.02 ppm Skin		ppm Skin		

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.
Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection Goggles
Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	Glove comments
Nitrile rubber	See manufacturers recommendations	-	Splash protection only

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls

No information available.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Light yellow
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	13 °C / 55.4 °F
Boiling Point/Range	246 - 247 °C / 474.8 - 476.6 °F
Flash Point	> 110 °C / > 230 °F
Evaporation Rate	No information available
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	9.5%
Lower	0.9%

Vapor Pressure	0.025 mbar @ 25 °C
Vapor Density	6.0 (Air = 1.0)
Specific Gravity	1.220
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	620 °C / 1148 °F
Decomposition Temperature	No information available
Viscosity	3 mPa.s at 25 °C
Molecular Formula	C9 H6 N2 O2
Molecular Weight	174.16

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Moisture sensitive.

Conditions to Avoid Excess heat. Incompatible products. Exposure to moist air or water.

Incompatible Materials Acids, Strong oxidizing agents, Strong bases, Alcohols, Amines

Hazardous Decomposition Products Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO_2), Hydrogen cyanide (hydrocyanic acid)

Hazardous Polymerization No information available.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information No acute toxicity information is available for this product

Component Information

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization May cause sensitization by skin contact

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Toluene 2,6-diisocyanate	91-08-7	Group 2B	Reasonably Anticipated	A3	X	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling

delayed of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Endocrine Disruptor Information No information available

Other Adverse Effects See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity
Do not empty into drains.

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available.

Mobility No information available.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT
- **UN-No** UN2078
- **Proper Shipping Name** TOLUENE DIISOCYANATE
- **Hazard Class** 6.1
- **Packing Group** II

TDG
- **UN-No** UN2078
- **Proper Shipping Name** TOLUENE DIISOCYANATE
- **Hazard Class** 6.1
- **Packing Group** II

IATA
- **UN-No** UN2078
- **Proper Shipping Name** TOLUENE DIISOCYANATE
- **Hazard Class** 6.1
- **Packing Group** II

IMDG/IMO
- **UN-No** UN2078
- **Proper Shipping Name** TOLUENE DIISOCYANATE
- **Hazard Class** 6.1
- **Packing Group** II

15. Regulatory information

International Inventories

Component	CAS-No	DSL	NDSL	TSCA	TSCA Inventory notification - Active-Inactive	EINECS	ELINCS	NLP
Toluene 2,6-diisocyanate	91-08-7	X	-	X	ACTIVE	202-039-0	-	-

Component	CAS-No	IECSC	KECL	ENCS	ISHL	TCSI	AICS	NZIoC	PICCS
Toluene 2,6-diisocyanate	91-08-7	X	KE-10915	X	X	X	X	X	X

Legend:
X - Listed '-' - Not Listed
KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
ENCS - Japanese Existing and New Chemical Substances
AICS - Australian Inventory of Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

Canada

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

Component	Canada - National Pollutant Release Inventory (NPRI)	Canadian Environmental Protection Agency (CEPA) - List of Toxic Substances	Canada's Chemicals Management Plan (CEPA)
Toluene 2,6-diisocyanate	Part 1, Group B Substance	Schedule I	Subject to Monitoring and Surveillance Activities

Other International Regulations

Authorisation/Restrictions according to EU REACH

Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Toluene 2,6-diisocyanate	-	Use restricted. See item 75. (see link for restriction details) Use restricted. See item 74. (see link for restriction details)	-

REACH links
https://echa.europa.eu/substances-restricted-under-reach

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

Component	CAS-No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Toluene 2,6-diisocyanate	91-08-7	Listed	Not applicable	Not applicable	Not applicable

Component	CAS-No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Toluene 2,6-diisocyanate	91-08-7	10 tonne	100 tonne	Not applicable	Not applicable

16. Other information

Prepared By Product Safety Department
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www.thermofisher.com

Revision Date 26-March-2024
Print Date 26-March-2024
Revision Summary New emergency telephone response service provider.

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information

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End of SDS