SAFETY DATA SHEET

SECTION 1: CHEMICAL PRODUCT and COMPANY IDENTIFICATION

Product Name:	Tolylene-2,4-diisocyanate 98%
Product Code:	T16135
Supplier:	Pfaltz & Bauer, Inc. 172 E. Aurora Street Waterbury, CT 06708 USA
Phone:	203-574-0075
FAX:	203-574-3181
Emergency Phone:	INFOTRAC, US: 1-800-535-5053 INFOTRAC, INTERNATIONAL: +1-352-323-3500

SECTION 2: HAZARDS IDENTIFICATION

Statement of Hazard:	Environmentally hazardous, Irritant, Respiratory irritant, Respiratory sensitizer, Skin sensitizer, Toxic
Acute Health Hazard:	Irritant to eyes, skin, mucous membranes and respiratory system. May be harmful by ingestion and skin absorption, fatal by inhalation.
Chronic Health Hazard:	Carcinogen
HMIS Rating:	H: 4 F: 1 P: 0
NFPA Rating:	H: 4 F: 1 R: 0

To the best of our knowledge, the toxicological properties of this chemical have not been thoroughly investigated. Use appropriate procedures and precautions to prevent or minimize exposure.

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):
GHS Classification in accordance with Regulation (EC) No 1272/2008:

Acute toxicity, dermal (Category 4), H312
Acute toxicity, inhalation (Category 1), H330
Acute toxicity, oral (Category 4), H302
Carcinogenicity (Category 2), H351
Hazardous to the aquatic environment, chronic toxicity (Category 3), H412
Sensitization, respiratory (Category 1), H334
Sensitization, skin (Category 1), H317
Serious eye damage/eye irritation (Category 2A), H319
Skin corrosion/irritation (Category 2), H315
Specific target organ toxicity, single exposure; Respiratory tract irritation (Category 3), H335

Pictogram:

Signal Word: Danger

Hazard Statement(s):
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
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):
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P284 Wear respiratory protection.
P285 In case of inadequate ventilation wear respiratory protection.
P302+P352 IF ON SKIN: wash with plenty of soap and water.
P304+P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.
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.
P310 Immediately call a POISON CENTER or doctor/physician.
P333+P313 IF SKIN irritation or rash occurs: Get medical advice/attention.
P342+P311 IF experiencing respiratory symptoms: call a POISON CENTER or doctor/physician.

SECTION 3: COMPOSITION/INFORMATION on INGREDIENTS

Chemical Name: Tolylene-2,4-diisocyanate 98%

Synonyms: 2,4-Diisocyanatotoluene; 2,4-Toluene diisocyanate; 2,4-TDI; 4-Methyl-m-phenylene isocyanate; Cresorcinol diisocyanate

CAS Number:	584-84-9
MDL Number:	MFCD00002011
EINECS Number:	209-544-5
Beilstein Registry Number:	744602
Molecular Formula:	$C_9H_6N_2O_2$
Molecular Weight:	174.16
Content:	As specified in product name.

SECTION 4: FIRST AID MEASURES

Eye Contact:	Flush eyes with large amounts of water for fifteen minutes. Separate eyelids with fingers. If irritation persists, seek medical attention.
Skin Contact:	Wash skin with soap and water. If irritation persists, seek medical attention.
Ingestion:	Do not induce vomiting. Seek medical attention.
Inhalation:	Move to a fresh air environment. Contact a physician if breathing becomes difficult.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point (ºC):	132	
Explosion Limits:	Lower, % by volume:	0.9
	Upper, % by volume:	9.5
Auto Ignition Temperature (ºC):	620	
Extinguishing Media:	Carbon dioxide, dry chemical powder, alcohol-resistant foam, or water spray	
Protective Equipment:	Wear self-contained respirator and fully protective impervious suit.	
Specific Hazards:	May emit hazardous fumes under fire conditions.	

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Protection: Wear a self-contained breathing apparatus, rubber boots and gloves, and disposable coveralls. Dispose of coveralls after use. Remove from ignition sources if safe to do so. Follow emergency response plan and contact proper authorities if needed.
Keep unprotected persons away.

Environmental Protection: Keep spills out of sewers and bodies of water. Dike and contain the spill with inert material. Absorb on sand, vermiculite or diatomite. Transfer material to a container for disposal or recovery. Ventilate area and wash spill site after material pickup is complete.

SECTION 7: HANDLING and STORAGE

Handling and Storage: Avoid breathing dust, vapor, mist or gas. Avoid contact with skin and eyes. Avoid prolonged or repeated exposure. Use only in a chemical fume hood. Open and handle container with care. Keep ignition sources away.
Store in a tightly closed container in a dry, well-ventilated place. Store under inert gas. Store under nitrogen.

Sensitivities: Light, Moisture

Storage Temperature (ºC): 2 to 8

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use product in a well ventilated area or under a fume hood. Use proper lab equipment while handling this product. Keep away from incompatible materials for possible risk of hazardous reaction.

Eye Protection: Wear appropriate protective eyeglass or chemical safety goggles. Make sure that there is an eyewash station in your vicinity.

Skin Protection: Wear impervious gloves and protective clothing.

Respiratory Protection: Use a NIOSH approved respirator when exposure limits are exceeded or if irritation or other symptoms are experienced.

Exposure Limits:

Country	Source	Type	Value
USA	ACGIH	TWA	0.0050 ppm
USA	OSHA	STEL	0.02 ppm
USA	OSHA	PEL	Not Available

SECTION 9: PHYSICAL and CHEMICAL PROPERTIES

Appearance: Clear colorless liquid

Odor: Not Available

Odor Threshold:	Not Available
Flash Point (ºC):	132
Auto Ignition Temperature (ºC):	620
UEL % by Volume:	9.5
LEL % by Volume:	0.9
Melting Point (ºC):	20-22
Boiling Point (ºC):	115-120/10mm
Evaporation Rate:	Not Available
pH Value:	Not Available
Density (g/cm³):	1.214
Refractive Index (n^{20}_{D}):	1.568
Viscosity:	Not Available
Solubility in Water:	Not Available
Solubility in Other:	Not Available
Vapor Pressure (mmHg):	0.03
Vapor Density (Air=1):	6

SECTION 10: STABILITY and REACTIVITY

Stability:	Stable under normal temperatures and pressures.
Incompatibility:	Alcohols, Strong bases, Amines, Acids, Strong oxidizing agents
Reactivity:	Product may react with incompatible materials to release other hazardous substances.
Conditions to Avoid:	Heat, flame, sparks, other ignition sources.
Hazardous Decomposition Products:	Carbon oxides, Nitrogen oxides

SECTION 11: TOXICOLOGICAL INFORMATION

RTECS Reference: CZ6300000

Target Organs: Lungs, Nerves, Respiratory Tract

Toxicity Data:

Oral Rat LD_{50} mg/kg:	5110.00
Dermal Rabbit LD_{50} mg/kg:	9400.00
Intravenous Mouse LD_{50} mg/kg:	56.00
Inhalation Rat LC_{50}, mg/m3 – h:	14.00 - 4
Inhalation Mouse LC_{50}, mg/m3 – h:	9.70 - 4

Carcinogenicity: National Toxicology Program (NTP) listed: Not Available

International Agency for Research on Cancer (IARC) listed: Not Available

Potential Symptoms: Not Available

SECTION 12: ECOLOGICAL INFORMATION

Toxicity:

Rainbow trout LC_{50}:	133.00 mg/l - 96 hrs.
Water flea LC_{50}:	12.50 mg/l - 12.50 hrs.

SECTION 13: DISPOSAL CONSIDERATIONS

Contact a licensed professional waste disposal service. Dispose in a manner consistent with federal, state and local environmental regulations.

SECTION 14: TRANSPORT INFORMATION

DOT Shipping Name: Toluene Diisocyanate

DOT UN Number: UN2078

DOT Hazard Class: Class 6.1

DOT Packing Group: PGII

Reportable Quantity: 100 Ibs

IMDG Shipping Name: Toluene Diisocyanate

IMDG UN Number: UN2078

IMDG Hazard Class:	Class 6.1
IMDG Packing Group:	PGII
Marine Pollutant:	Yes
IATA Shipping Name:	Toluene Diisocyanate
IATA UN Number:	UN2078
IATA Hazard Class:	Class 6.1
IATA Packing Group:	PGII

SECTION 15: REGULATORY INFORMATION

United States

Toxic Substance Control Act (TSCA) listed: Yes

Superfund Amendments and Reauthorization Act (SARA 302) listed: Yes

Superfund Amendments and Reauthorization Act (SARA 311/312) listed: Yes

Superfund Amendments and Reauthorization Act (SARA 313) listed: Yes

European Union

European Inventory of Existing Chemical Substances (EINECS): 209-544-5

GHS Classification in accordance with Regulation (EC) No 1272/2008: Yes

Canada

Canadian Domestic Substances List (DSL) listed: Yes

Canadian Non-Domestic Substances List (NDSL) listed: No

SECTION 16: OTHER INFORMATION

Date Prepared: 9/26/2022

The information above is presented in good faith. It is believed to be accurate and represents the best information currently available to us. However, we make no warranty with respect to such information and we assume no liability resulting from its use. The user should consider this information as a supplement to other information that may be available and make independent judgement to ensure proper use to protect the health and safety of employees and the environment. Pfaltz and Bauer shall not be held liable for any damage resulting from handling or from contact with the above product.