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SAFETY DATA SHEET

SECTION 1 - Identification

1.1 Product Identifier

Product Name • AQUAPOL® PT-17000-62 Prepolymer

Synonyms • Toluene Diisocyanate Prepolymer

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Recommended Use • Component for a Polyurethane

1.3 Details of the Supplier of the Safety Data Sheet

Manufacturer • Carpenter Co.
5016 Monument Ave.
Richmond, Virginia 23230
(804) 233-0606

1.4 Emergency Telephone

Chemtrec • (800) 424-9300 (24-hr number)

SECTION 2 - Hazards Identification

2.1 Classification of the Substance or Mixture

Classification in accordance with 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200):

Carcinogenicity Category 2 – H351
Acute Toxicity Inhalation Category 4 – H332
Skin Sensitization Category 1B – H317
Respiratory Sensitization Category 1A – H334

2.2 GHS Label Elements

Hazard Pictogram

Signal Word **DANGER**

Hazard Statements

H332 – Harmful if inhaled.
H351 – Suspected of causing cancer.
H317 – May cause an allergic skin reaction.
H334 – May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary Statements

Prevention	P201+P202 – Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. P261 – Avoid breathing dust, mist, or vapors. P272 - Contaminated work clothing should not be allowed out of the workplace. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P284 – In case of inadequate ventilation wear respiratory protection.
Response	P308+P313 – IF exposed or concerned: Get medical attention. P304+P340 – IF INHALED: remove person to fresh air and keep comfortable for breathing. P342+P311 – If experiencing respiratory symptoms: Call a doctor. P302+P350 - IF ON SKIN: Gently wash with plenty of soap and water. P333+P313 - If skin irritation or rash occurs: Get medical attention. P362+P364 – Take off contaminated clothing and wash it before reuse.
Storage/Disposal	P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. P405 - Store locked up.

2.3 Hazards Not Otherwise Classified

- May cause slight eye irritation.
- May cause skin irritation on prolonged or repeated contact.
- Refer to Section 11 Toxicological Information for additional toxicity information.
- Refer to Section 16 Other Information for HMIS and NFPA Codes.

SECTION 3 - Composition/Information on Ingredients

3.1 Substance

Material does not meet the criteria of a substance according to United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

3.2 Mixtures

Name	Identifier	% (weight)
Polyurethane Prepolymer	Trade Secret	94-98
Toluene Diisocyanate (mixed isomers)	CAS# 26471-62-5	2-3

The exact percentages of the component(s) have been withheld as a trade secret.

SECTION 4 - First Aid Measures

4.1 Description of First Aid Measures

By route of inhalation	• Remove victim to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms, seek medical attention. Administer oxygen or artificial respiration as needed.
By route of dermal contact	• Remove contaminated clothing and shoes. Wash thoroughly with soap and water. Seek medical attention if irritation develops.
By route of eye contact	• Flush with plenty of water for 15 minutes. If irritation develops and persists, seek medical attention.
By route of ingestion	• Rinse mouth. Do not induce vomiting. Seek medical attention.

4.2 Most Important Symptoms and Effects, Acute and Chronic

- Most important symptoms include contact dermatitis, respiratory tract irritation, cough, shortness of breath, wheezing or chest tightness. Onset of symptoms may be delayed.
- Refer to Section 11 Toxicological Information.

4.3 Indication of Immediate Medical Attention and Special Treatment If Needed

- Treat symptomatically.

SECTION 5 - Firefighting Measures

5.1 Extinguishing Media

Suitable Extinguishing Media	• Dry chemical, foam, carbon dioxide, water fog or fine spray.
Unsuitable Extinguishing Media	• Do not use direct water spray. May spread fire.

5.2 Special Hazards Arising From the Substance or Mixture

- Fires may produce irritating toxic fumes and gases including oxides of carbon, nitrogen, and traces of HCN.
- Containers may explode when heated or if contaminated with water. Some of these materials may burn, but none ignite readily.

5.3 Special Protective Actions for Firefighters

- Responding personnel must wear positive-pressure, self-contained breathing apparatus (SCBA) and protective firefighting clothing.

SECTION 6 - Accidental Release Measures

6.1. Personal Precautions, Protective Equipment, and Emergency Procedures

Avoid any skin contact and avoid breathing vapors, mists or dusts. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Don protective equipment appropriate for the size of the spill. Keep unauthorized personnel away. Stay upwind. Do not walk through spilled material. Spilled material may be slippery. Ensure adequate ventilation and eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk.

6.2 Environmental Precautions

• Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. If required, notify the proper authorities.

6.3 Methods and Materials for Containment and Clean Up

Methods	• Stop leak and dam spill. • Cover spill with an inert absorbent. •Transfer waste into open-top drums and keep drum lid loose for at least 24 hours. • Decontaminate spill area with a neutralization solution. • LARGE SPILLS: Dike far ahead of spill to contain the material.
Materials	• Inert absorbent (sand, earth or similar). • Neutralizing agent (90% water, 8% ammonia, 2% liquid detergent), and a drum with lid (to collect waste). • Use appropriate Personal Protective Equipment (PPE).

6.4 Reference to Other Sections

• Refer to Section 8 for exposure control and personal protective equipment information.
• Refer to Section 12 for ecological information.

SECTION 7: Handling and Storage

7.1 Precautions for Safe Handling

• Do not handle until all safety precautions have been read and understood.
• Do not breathe vapors or mist.
• Do not use in areas without adequate ventilation.
• Avoid contact with eyes, skin, and clothing.
• Do not eat, drink or smoke while using this product.
• Use good safety and industrial hygiene practices.

7.2 Conditions for Safe Storage, Including any Incompatibilities

Storage	• Store materials in a cool (70-110^{o}F) dry, well-ventilated place. Do not transport with oxidizers. Store in tightly closed containers to prevent moisture contamination.
Incompatibilities	•Keep away from water, amines, strong bases, alcohols, and copper alloys.

SECTION 8: Exposure Controls/ Personal Protection

8.1 Control Parameters

Exposure Limits/Guidelines

	OSHA PEL (ppm)	ACGIH TLV (ppm)
2,4-Toluene Diisocyanate	0.02 Ceiling	0.02 STEL 0.005 TWA (SEN) (A4)
2,6-Toluene Diisocyanate	Not Established	0.02 STEL 0.005 TWA (SEN) (A4)

8.2 Exposure Controls

Engineering Controls	• Use only in well ventilated areas. Adequate ventilation systems as needed to control concentrations of airborne contaminants below applicable threshold limit values.
Eye/Face Protection	• Safety glasses with side shields for incidental use. Depending on the splash risk, chemical goggles or chemical goggles with a face shield may be needed.
Respiratory Protection	• If exposure concentrations may exceed applicable exposure limits or are unknown, use an appropriate NIOSH/MSHA approved respirator. Respirators should be selected in accordance with OSHA 1910.134.
Skin Protection	• Use chemical resistant gloves and suitable working clothes to avoid skin contact. Choose chemical resistant gloves appropriate for the intended use. Consult glove manufacturers for assistance in choosing appropriate gloves.
Additional Protection Measures	• Use near eyewash station and safety shower.

SECTION 9: Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	• Liquid	Odor	• Pungent odor
Appearance/Color	• Light yellow	Odor Threshold	• No data available
General Properties			
Boiling Point	• No data available	Melting Point	• No data available
Decomposition Temperature	• No data available	pH	• No data available
Density	• No data available	Water Solubility	• Insoluble
Solvent Solubility	• No data available	Viscosity	• No data available
Explosive Properties	• No data available	Specific Gravity/Relative Density	• 1.07-1.20 (H_2O=1)
Volatility			
Vapor Pressure	• No data available	Vapor Density	• No data available

Evaporation Rate	• No data available	VOC (Vol.)	• No data available
Volatiles (Vol.)	• No data available		
Flammability			
Flash Point	• >200ºF (PMCC)	LEL	• No data available
UEL	• No data available	Flammability (solid, gas)	• No data available
Auto-ignition Temperature	• No data available		
Environmental			
Octanol/Water Partition Coefficient	• No data available		

9.2. Other Information

No additional information available

SECTION 10: Stability and Reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical Stability

Stable under normal temperatures and pressures.

10.3 Possibility of Hazardous Reactions

May occur at elevated temperatures.

10.4 Conditions to Avoid

Elevated temperatures and moisture. Contact with water may cause a buildup of carbon dioxide in containers causing the container to bulge and subsequently burst.

10.5 Incompatible Materials

Water, amines, strong bases, alcohols, copper alloys.

10.6 Hazardous Decomposition Products

No hazardous decomposition products if handled and stored as recommended. At high temperatures: carbon monoxide, carbon dioxide, oxides of nitrogen may be formed.

SECTION 11: Toxicological Information

11.1 Information on Toxicological Effects

Most likely routes of exposure include inhalation and skin exposure.

Acute Toxicity

Chemical	LD50 oral rat	LD50 dermal rabbit	LC50 inhalation rat
Toluene Diisocyanate (TDI)	3060 mg/kg	10,000 mg/kg	0.099 mg/L, 4hr, dust and mist

Acute Inhalation = Acute toxicity inhalation category 4: Harmful if inhaled.
May cause respiratory irritation, particularly if sprayed or heated.

Skin Corrosion/Irritation

• Based on available information, skin corrosion/irritation is not expected under normal conditions of use.

• May cause skin irritation on prolonged or repeated contact.

Serious Eye Damage/Irritation

• Based on available information, eye damage/irritation criteria are not met. Exposures to vapors exceeding the guidelines may cause eye irritation. Prolonged exposure may cause conjunctivitis.

Respiratory or Skin Sensitization

• Skin Sensitization 1B – May cause allergic skin reaction. (EU Method B.6, Guinea Pig)

• Respiratory Sensitization 1A - May cause allergy or asthma symptoms or breathing difficulties if inhaled. (Other method)

Germ Cell Mutagenicity

• Available studies have not indicated this material to be a mutagen.

Carcinogenicity

• GHS Carcinogenicity Category 2 – Suspected of causing cancer.

• TDI is listed by IARC as a Group 2B Possibly Carcinogenic to Humans and by NTP as Reasonably Anticipated to be a Human Carcinogen.

Reproductive Toxicity

• No data available

Specific Target Organ Toxicity (single exposure) (STOT-SE)

• No data available

Specific Target Organ Toxicity (repeated exposure) (STOT-RE)

• No data available

Aspiration Hazard

• No data available

11.2 Potential Health Effects

Inhalation

Acute	• Vapors can induce asthma-like respiratory reaction.
Chronic	• Repeated overexposure or a single large dose may cause sensitization (asthma or asthma-like symptoms) that may cause some individuals to react later to diisocyanate exposure at levels well below the TLV or PEL.

Skin

Acute	• Can cause irritation with symptoms of reddening, itching and swelling.
Chronic	• Prolonged contact can cause reddening, swelling, rash, and in some cases, skin sensitization. Contains aromatic oils that may be absorbed through the skin.

Eye

Acute	• Can cause irritation with symptoms of reddening, tearing, stinging, and swelling.
Chronic	• Prolonged vapor contact may cause conjunctivitis.

Ingestion

Acute	• May cause gastrointestinal discomfort, including abdominal pain, nausea, vomiting and diarrhea.
Chronic	• None known.

SECTION 12: Ecological Information

12.1 Ecotoxicity

TDI (mixed isomers): Acute Aquatic Toxicity, 48 hr, Daphnia magna EC50 = 12.5 mg/l

12.2 Persistence and Degradability

TDI is immiscible with water, but will react with water to produce inert and non-biodegradable solids.

12.3 Bioaccumulative Potential

No data available

12.4 Mobility in Soil

No data available

12.5 Other Adverse Effects

No data available

SECTION 13: Disposal Considerations

13.1 Waste Disposal Method

Product Waste

• Do not dump into any sewers, on the ground, or into any body of water.

• All disposal methods must be in compliance with Federal, State/Provincial, and local regulations.

Packaging Waste

• Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

SECTION 14: Transport Information

U.S. DOT

Single containers with less than 3521 lbs are not regulated.

Single containers with 3521 lbs or more are regulated as: UN3082, Environmentally hazardous substance, liquid, n.o.s., 9, III, RQ (Toluene diisocyanate).

IATA/IMDG

Note regulated as hazardous for shipment.

SECTION 15: Regulatory Information

15.1 Regulatory Status

CERCLA Hazardous Substances (40 CFR 302):

2,4-Toluene diisocyanate (CAS# 584-84-9)	RQ = 100 lbs
2,6-Toluene diisocyanate (CAS# 91-08-7)	RQ = 100 lbs

SARA 311/312:

Toluene diisocyanate	Acute health hazard. Chronic health hazard. Reactivity hazard.

SARA 313:

Toluene diisocyanate, mixed isomers (CAS# 26471-62-5)

15.2 US State Regulations

⚠**WARNING:** This product can expose you to Toluene diisocyanate, which is known to the State of California to cause cancer. For more information go to www.P65Warning.ca.gov

15.3 Canadian Regulations

DSL: All components of this product are listed on, or exempt from the DSL.

15.4 International Inventories*

United States: All components of this product are listed on the TSCA inventory.

Proposed TSCA 5 SNUR: Toluene diisocyanate	40CFR 721.10789

TSCA 12(b) Export Notification:

2,4-Toluene diisocyanate (CAS# 584-84-9)	≥0.1%
2,6-Toluene diisocyanate (CAS# 91-08-7)	≥0.1%
Toluene diisocyanate, mixed isomers (CAS# 26471-62-5)	≥0.1%

*=Although a chemical may be listed on a country's inventory, it may not indicate a hazard or regulatory control for use.

SECTION 16: Other Information

16.1 HMIS and NFPA RATINGS

HMIS Classification	**NFPA Ratings**
Health: 3*	Health: 3
Flammability: 1	Flammability: 1
Reactivity: 2	Instability: 2
	Special: None

*=Chronic

16.2 EU CLP Relevant Phrases

Not classified

16.3 Preparation By

I.H. Department

16.4 Preparation Date

December 20, 2017

16.5 Last Revision Date

February 14, 2020 – Sections 1 and 14

16.6 Disclaimer/Statement of Liability

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