

1. Identification

Product Identifier: **PolyBond Urethane Adhesive Part A**
 Product Code(s): POLYBONDA
 Use: Component for liquid polyurethane adhesive.
 For Industrial/Professional use only.
 Manufacturer: Polytek Development Corp.
 55 Hilton St., Easton, PA 18042
 Phone Number: 610-559-8620 (9 a.m. to 5 p.m. EST)
 Emergency Phone: CHEMTREC 800-424-9300 or
 +1 (703) 527-3887
 E-mail: sds@polytek.com

2. Hazards Identification

GHS Classification:

Acute Toxicity - Inhalation Category 4
 Skin Irritation Category 2
 Eye Irritation Category 2B
 Respiratory Sensitization Category 1
 Skin Sensitization Category 1
 Carcinogenicity Category 2
 Specific Target Organ Toxicity Single Exposure Category 3
 Specific Target Organ Toxicity Repeated Exposure Category 2

Label Elements: Danger



Contains polymeric methylenediphenyl diisocyanate (MDI).

Hazard Phrases

H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H319 Causes serious eye irritation.
 H332 Harmful if inhaled.
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H335 May cause respiratory irritation.
 H351 Suspected of causing cancer.
 H373 May cause damage to organs (lungs and respiratory system) through prolonged or repeated exposure.

Precautionary Phrases

P202 Do not handle until all safety precautions have been read and understood.
 P260 Do not breathe vapors or mists.
 P280 Wear protective gloves, protective clothing, eye protection, and face protection.
 P284 In case of inadequate ventilation, wear respiratory protection.
 P302+352 IF ON SKIN: Wash with plenty of soap and water.
 P304+340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P308+313 IF exposed or concerned: Get medical attention.
 P403+233 Store in a well-ventilated place. Keep container tightly closed.
 P501 Dispose of contents and container in accordance with local, regional and national regulations.

Supplemental Information: Individuals sensitized to isocyanates should discontinue use. Long-term overexposure to isocyanates may cause lung damage.

This is one part of a two-part system. Read and understand the hazard information on part B before using.

3. Composition/Information on Ingredients

Chemical Name	CAS #	%
Methylenediphenyl diisocyanate (MDI) (includes isomers and oligomers)	26447-40-5	<100
MDI prepolymer	68092-58-0	45-55

4. First-Aid Measures

Eye Contact: Rinse thoroughly with water for at least 15 minutes, holding the eyelids open to be sure the material is washed out. Get prompt medical attention.

Skin Contact: Remove contaminated clothing. Wash contact area thoroughly with soap and water. Get medical attention if irritation or symptoms of exposure develop. Launder clothing before re-use. Discard items that cannot be decontaminated.

Inhalation: Remove person to fresh air. Give artificial respiration if needed. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Get medical attention.

Most Important Symptoms/Effects: Causes skin and eye irritation. Vapors/mists may cause respiratory irritation. May cause allergic skin and/or respiratory reaction in sensitized persons. Symptoms include skin rash, wheezing, shortness of breath and other asthma symptoms. Prolonged inhalation overexposure may damage the lungs and respiratory system.

Indication of Immediate Medical Attention/Special Treatment:

Immediate medical attention is required for asthmatic symptoms or serious inhalation exposures. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Persons sensitized to isocyanates should consult a physician regarding working with respiratory irritants or sensitizers.

5. Fire-Fighting Measures

Extinguishing Media: Use water fog, foam, carbon dioxide or dry chemical. Do not direct solid water stream into hot product, since it may cause violent steam generation or eruption.

Specific Hazards: Not classified as flammable. Product will burn under fire conditions.

Special Protective Equipment & Precautions for Fire-Fighters: Wear positive pressure, self-contained breathing apparatus and full-body protective clothing. Cool fire-exposed containers with water.

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency

Procedures: Remove ignition sources. Clear non-emergency personnel from the area. Wear a respirator and protective equipment to prevent eye and skin contact. Ventilate area. Caution – spill area may be slippery.

Methods and Materials for Containment and Cleanup: Cover with inert absorbent material and collect into a container for disposal. Do not seal the container since carbon dioxide is generated on contact with moisture and dangerous pressure buildup can occur. Decontaminate floor area with a mixture of water plus isopropyl alcohol (20%), household ammonia (10%) and detergent (2%).

7. Handling and Storage

Safe Handling: Avoid breathing vapors, aerosols and mists. Use with adequate ventilation. Avoid contact with the eyes, skin and clothing. Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep container closed when not in use.

Safe Storage: Store indoors at 60 to 95°F (15-35°C). Store in original, unopened containers. Protect from atmospheric moisture and water since MDI reacts with water to form carbon dioxide leading to potentially dangerous pressure build up in sealed containers.

8. Exposure Controls/Personal Protection

Occupational Exposure Limits:

Methylenediphenyl diisocyanate (MDI) 0.02 ppm (C) OSHA PEL
0.005 ppm TWA ACGIH TLV

Ventilation: Use with adequate general or local exhaust ventilation to maintain exposure levels below the occupational exposure limits.

Respiratory Protection: In the absence of good ventilation, use a NIOSH-approved respirator with organic vapor cartridges. Respirator selection and use should be based on contaminant type, form and concentration. For higher exposures or in an emergency, use a supplied-air respirator.

Skin Protection: Wear impervious gloves (butyl/nitrile rubber).

Eye Protection: Wear chemical safety glasses/goggles.

Other Protective Measures: Wear impervious clothing to prevent skin contact and contamination of personal clothing. An eye wash facility and washing facility should be available in the work area. Follow applicable regulations and good Industrial Hygiene practice.

9. Physical and Chemical Properties

Appearance: Clear yellow/amber liquids

Odor: Mild

Odor Threshold: 0.4 ppm (MDI)

pH: Not applicable

Melting Point: No data available

Boiling Point: 200°C (literature, decomposes)

Flash Point: >224°C (closed cup)

Evap. Rate: No data available

Flamm. Limits: No data available

Vapor Pressure: ≤0.00001 mm Hg @ 25°C (literature)

Vapor Density: >1 (estimated)

Relative Density: 1.2 @ 20°C

Solubility: Insoluble in water

Partition Coefficient: n-octanol/Water: No data available

Auto-Ignition Temp: No data available

Decomposition Temp: No data available

Viscosity: No data available

10. Stability and Reactivity

Reactivity: Diisocyanates react with many materials and the rate of reaction increases with temperature. Reaction with water generates carbon dioxide and heat.

Chemical Stability: Stable under recommended conditions.

Possibility of Hazardous Reactions: Elevated temperatures can cause hazardous polymerization. Polymerization can be catalyzed by strong bases or water. Reaction with water generates carbon dioxide, and results in heat and pressure buildup in closed systems.

Conditions to Avoid: Avoid moisture and temperatures below 60°F and above 95°F to protect product integrity and prevent pressure build up in closed containers.

Incompatible Materials: Avoid contact with water, acids, bases, alcohols, strong oxidizers, and some metals (e.g., aluminum, zinc, brass, tin, or copper).

Hazardous Decomposition Products: Possibly isocyanate vapor, carbon monoxide, nitrogen oxides, and traces of hydrogen cyanide.

11. Toxicological Information

Eye Contact: Causes serious eye irritation. May cause temporary corneal injury.

Skin Contact: Causes skin irritation. May stain skin. Repeated skin contact may cause an allergic skin reaction (sensitization). Animal studies indicate that skin contact with isocyanates may play a role in respiratory sensitization.

Inhalation: At room temperature, vapors are minimal due to low volatility. Vapors or aerosols (e.g., generated during heating or spraying) may cause respiratory irritation and possibly pulmonary edema. May cause respiratory sensitization. For individuals sensitized to isocyanates, exposure may result in allergic respiratory reactions (e.g., coughing, wheezing, difficulty breathing).

Ingestion: Single oral dose toxicity is low. Ingesting large amounts may cause adverse gastrointestinal effects.

Chronic Health Effects: Repeated or prolonged exposure to isocyanates above exposure limits may cause an allergic sensitization of the respiratory tract causing an asthma-like response upon re-exposure. Repeated overexposure to isocyanates has been associated with decreased lung function. Repeated or prolonged dermal contact with this product may cause allergic skin sensitization in some individuals.

Acute Toxicity Values: For MDI: Oral rat LD50 >10,000 mg/kg; Skin rabbit LD50 >9,400 mg/kg; Inhalation rat LC50 0.49 mg/L/4 hr (aerosol)

Germ Cell Mutagenicity: Not classified as a mutagen, since genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

Carcinogenicity: Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI. MDI is not designated as a carcinogen by NTP, IARC, or OSHA.

Reproductive Toxicity: In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

Specific Target Organ Toxicity: Single Exposure: May cause respiratory irritation. Repeat Exposure: Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.

12. Ecological Information

Ecotoxicity: Not classified as dangerous to aquatic organisms (LC50/EC50 >100 mg/L in most sensitive species.)

Persistence and Degradability: Not readily biodegradable.

Bioaccumulative Potential: Not expected to bioaccumulate.

Mobility in Soil: Movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

13. Disposal Considerations

Dispose according to local, state and federal regulations. Do not dump into sewers, waterways or on the ground. Upon exposure to moisture, product forms an inert, non-hazardous solid.

14. Transport Information

Not regulated for transport by any mode (non-bulk).

Emergency Shipping Information: Call CHEMTREC, 800-424-9300 or +1-703-527-3887

15. Regulatory Information

U.S. FEDERAL REGULATIONS:

CERCLA 103 Reportable Quantity: Not subject to reporting under CERCLA. Some states have more stringent reporting requirements. Report all spills in accordance with local, state, and federal regulations.

SARA TITLE III

Section 311/312: Acute Health, Chronic Health

Section 313 Toxic Chemicals: Contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

Diisocyanates Category (N120) 45-55%

Section 302 Extremely Hazardous Substances (TPQ): None

EPA Toxic Substances Control Act (TSCA) Status: Components of this product are listed on the TSCA inventory.

STATE REGULATIONS:

California Proposition 65: This product is not known to contain substances known to the State of California to cause cancer and/or reproductive harm.

16. Other Information

Training Advice: All personnel using/handling this product should be trained in proper chemical handling and the need for and use of engineering controls and protective equipment.

Recommended Uses and Restrictions: This product is intended for industrial or professional use only.

SDS Revision Notes: May 29, 2015: new GHS classification and format. Supersedes Nov. 19, 2007.

Disclaimer: The information contained herein is considered accurate; however, Polytek® makes no warranty regarding the accuracy of the information. The user must determine the suitability of the product for the intended use and accepts all risk and liability associated with that use.