

1. Identification

Product Identifier: **Poly-Optic® 1411 Clear Casting Resin Part A**
 Product Code(s): 1411A
 Use: Component for Polyurethane Clear Casting Resin. For Industrial/Professional use only. Not for spray application.
 Manufacturer: Polytek Development Corp.
 55 Hilton St., Easton, PA 18042
 Phone Number: 610-559-8620 (8 a.m. to 6:30 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 2
 Skin Irritation – Category 2
 Respiratory Sensitization – Category 1
 Skin Sensitization – Category 1
 Specific Target Organ Toxicity – Single Exposure Category 3

Label Elements: Danger



Hazard Phrases

H330 Fatal if inhaled.
 H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H335 May cause respiratory irritation.
 H336 May cause drowsiness or dizziness.

Precautionary Phrases

P260 Do not breathe fumes, vapors, mists or sprays.
 P264 Wash 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.
 P280 Wear protective gloves.
 P284 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 person to fresh air and keep comfortable for breathing.
 P316 Get emergency medical help immediately.
 P319 Get medical help if you feel unwell.
 P333+P317 If skin irritation or rash occurs: Get medical help.
 P342+P316 If experiencing respiratory symptoms: Get emergency medical help immediately.
 P362+P364 Take off contaminated clothing and wash before reuse.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P405 Store locked up.
 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 #	%
4,4'-methylene di(cyclohexyl isocyanate)	5124-30-1	90-100
Exact concentrations are withheld as trade secret. Other ingredients are not listed because they are either not hazardous or are below concentration/cut-off thresholds.		

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 medical attention if irritation develops or persists.

Skin Contact: Remove contaminated clothing. Wash contact area thoroughly with soap and water. Get medical attention if irritation develops or persists. 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 if you feel unwell.

Most Important Symptoms/Effects: Causes skin and eye irritation. Vapors or 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 not use this product.

5. Fire-Fighting Measures

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

Specific Hazards: Not classified as flammable or combustible. 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 all ignition sources. Clear non-emergency personnel from the area. Wear appropriate protective clothing to prevent eye and skin contact and avoid breathing vapors. Ventilate area. Caution – spill area may be slippery.

Methods and Materials for Containment and Cleanup: Cover with an inert absorbent material and collect into an appropriate container for disposal. Do not seal the container since CO₂ 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: Do not breathe fumes, vapors, mists or sprays. Use with properly positioned local exhaust ventilation to prevent exposure. 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 temperatures between 55°F and 95°F. Store in original, unopened containers. Protect from atmospheric moisture and water since isocyanates react with water to form CO₂ leading to potentially dangerous pressure build up in sealed containers.

8. Exposure Controls/Personal Protection

Occupational Exposure Limits:

Chemical Name	Exposure Limits
4,4'-methylene di(cyclohexyl isocyanate)	0.005 ppm TWA ACGIH TLV 0.01 ppm (C) NIOSH

Ventilation: Use with properly positioned local exhaust ventilation to prevent exposure and maintain air levels below the occupational exposure limits.

Respiratory Protection: If ventilation is not adequate, use an approved respirator with organic vapor cartridges or supplied air. 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, such as butyl rubber or nitrile rubber.

Eye Protection: Wear chemical safety 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 pale yellow or violet liquid

Odor: Mild, acrid

Odor Threshold: No data available

pH: Not applicable

Melting Point/Freezing Point: No data available

Boiling Point: No data available

Flash Point: >149°C (300°F)

Evap. Rate: No data available

Flamm. Limits: No data available

Vapor Pressure: ≤0.00001 mm Hg @ 20°C

Vapor Density: >1 (air = 1)

Relative Density: 1.07 @ 25°C

Solubility: Insoluble in water; reacts slowly

Partition Coefficient: n-octanol/Water: Reacts with water

Auto-Ignition Temp: No data available

Decomposition Temp: No data available

Viscosity: 35-750 cP @ 25°C

10. Stability and Reactivity

Reactivity: Isocyanates react with many chemicals, including alcohols and amines, 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 55°F and above 95°F to protect product integrity and prevent pressure buildup in closed containers.

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

Hazardous Decomposition Products: Possibly isocyanate vapor, carbon monoxide, nitrogen oxides, and traces of hydrogen cyanide. Gases are released during decomposition.

11. Toxicological Information

Eye Contact: Cause serious eye irritation.

Skin Contact: Causes skin irritation. May cause an allergic skin reaction.

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: No data available.

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 4,4'-methylene di(cyclohexyl isocyanate):

Oral LD₅₀ (rat): 18,200 mg/kg

Dermal LD₅₀ (rabbit): >7,000 mg/kg

Inhalation LC₅₀ (rat): 434 mg/m³ 4 hr

Respiratory Sensitization: Components are classified as respiratory sensitizers.

Skin Sensitization: Components are classified as skin sensitizers

Germ Cell Mutagenicity: Components are not classified as mutagens.

Carcinogenicity: Components are not classified as carcinogens.

Reproductive Toxicity: Components are not classified as reproductive toxins.

Specific Target Organ Toxicity: May cause respiratory irritation, drowsiness or dizziness.

12. Ecological Information

Ecotoxicity: No data available. Avoid release to the environment.

Persistence and Degradability: Product is expected to hydrolyze in water and, upon exposure to air, degrade by photochemical processes.

Bioaccumulative Potential: Isocyanates are not expected to bioaccumulate.

Mobility in Soil: In the aquatic and terrestrial environment, 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. Upon exposure to moisture, product forms an inert, non-hazardous solid.

For U.S.: Upon disposal, this product is not a RCRA hazardous waste (per 40 CFR 261).

14. Transport Information

U.S. DOT: Not regulated for transport.

IMDG: No regulated for transport.

AIR/IATA: UN 3334, Aviation Regulated Liquid, n.o.s. 9, III (4,4'-methylene di(cyclohexyl isocyanate)).

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

15. Regulatory Information

U.S. FEDERAL REGULATIONS:

CERCLA 103 Reportable Quantity: This product is 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: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

Diisocyanates Category (N120) 90-100%

Section 302 Extremely Hazardous Substances (TPQ): None

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

STATE REGULATIONS:

California Proposition 65: This product does not contain chemicals known to the State of California to cause cancer or birth defects or other 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 use only.

SDS Revision Notes: Reviewed, removed Prop 65 warning: May 29, 2018; New 16-Section format with revisions throughout. Added new CA Proposition 65 Warning in Section 15; Reviewed and updated: December 14, 2021

Disclaimer: The information contained herein is considered accurate; however, Polytek® Development Corp. 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.