

## 1. Identification

Product Identifier: **Poly-Optic® 1410 Clear Casting Resin Part A**  
**Poly-Optic® 1411 Clear Casting Resin Part A**  
**Poly-Optic® 1412 Clear Casting Resin Part A**  
**Poly-Optic® 1420 Clear Casting Resin Part A**  
**Poly-Optic® 14-70 Clear Casting Resin Part A**

Product Code(s): 1410A, 1411A, 1412A, 1420A, 1470A

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 (9 a.m. to 5 p.m. EST)

Emergency Phone: CHEMTREC 800-424-9300 or +1 (703) 527-3887

E-mail: [sds@polytek.com](mailto:sds@polytek.com)

## 2. Hazards Identification

### GHS Classification:

Acute Toxicity - Inhalation Category 3  
 Skin Irritation Category 2  
 Eye Irritation Category 2A  
 Respiratory Sensitization Category 1  
 Skin Sensitization Category 1  
 Specific Target Organ Toxicity Single Exposure Category 3

Label Elements: Danger



### Hazard Phrases

H331 Toxic if inhaled.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 H317 May cause an allergic skin reaction.  
 H335 May cause respiratory irritation.

### Precautionary Phrases

P261 Avoid breathing mist, vapors, or spray.  
 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, protective clothing, eye protection, and face protection.  
 P285 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.  
 P333+313 If skin irritation or rash occurs: Get medical advice or attention.  
 P362+364 Take off contaminated clothing and wash before reuse.  
 P342+311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor.  
 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 #	%
4,4'-methylene di(cyclohexyl isocyanate)	5124-30-1	60-85
4,4'-methylene di(cyclohexyl isocyanate)/polyether polyol prepolymer	Unknown	15-40

## 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 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 CO<sub>2</sub> 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 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 CO<sub>2</sub> 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. May cause temporary corneal injury.

**Skin Contact:** Causes skin irritation. Skin contact may cause an allergic skin reaction. Animal studies indicate that skin contact with isocyanates may affect potential 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:** No toxicity data is available for this product. For 4,4'-methylene di(cyclohexyl isocyanate):

Oral LC50 Rat: 18,200 mg/kg

Dermal LC50 Rat: >7,000 mg/kg

Inhalation LC50 Rat: 434 mg/m<sup>3</sup> 4 hr (dust/mist; no vapor data)

**Respiratory Sensitization:** Isocyanates are respiratory sensitizers.

**Skin Sensitization:** Isocyanates are skin sensitizers.

**Germ Cell Mutagenicity:** Product has not been tested for mutagenicity. No ingredients are classified as mutagens.

**Carcinogenicity:** Product has not been tested for carcinogenicity. No ingredients are designated as carcinogens by NTP, IARC, or OSHA.

**Reproductive Toxicity:** Product has not been tested for reproductive toxicity. No ingredients present above cut-off levels are classified as reproductive toxins.

**Specific Target Organ Toxicity:**

Single Exposure: May cause respiratory irritation.

Repeat Exposure: After repeated exposure, isocyanates may cause respiratory irritation and lung damage. But, ingredients are not classified as STOT-RE.

## 12. Ecological Information

**Ecotoxicity:** Based on available data for ingredients, product is not classified as dangerous to aquatic organisms.

**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 a hazardous material.

**IMDG:** Not dangerous goods.

**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) 60-85%

**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.

**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.