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## Material Safety Data Sheets

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Alumilite Corporation  
315 E. North St.  
Kalamazoo, MI 49007  
269 488-4000

Emergency Telephone: Chemtrec 1-800-424-9300

### Section 1 – Product Information

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#### Alumilite Water Clear “A” side

**Common Chemical Name:** Blend of Polyols  
**Synonyms:** N/A  
**Chemical Family:** Polyether Polyol  
**Molecular Weight:** Not Established

### Section 2 - Ingredients

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Chemical:	CAS	Amount
Polyether Polyols	Proprietary	< 95%
These products are not considered to be hazardous according to OSHA Hazard Communication Standard and contain no chemical subject to Sara title III Section 313 supplier notification requirements.		
Organomercury Catalyst Mixture	N/A	< .15% (Hg)
Contains no chemical subject to Sara title III Section 313 supplier notification requirements		
Aromatic Hydrocarbon	108-88-3	< 15%

All products are not listed as Carcinogen in NTP, IARC, or OSHA 1910(z)

### Section 3- Hazardous Identification

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<b>Color:</b>	Colorless
<b>Form/Appearance:</b>	Liquid
<b>Odor:</b>	Polyol
<b>Odor Intensity:</b>	Mild

#### Nature of Hazard

**Emergency Overview:** Danger! Harmful or fatal if swallowed. Pulmonary aspiration hazard. Product may enter lungs and cause damage. Harmful if mist inhaled. High vapor concentrations may cause drowsiness. May cause skin and eye irritation.

**Eye Contact:** May cause irritation.

**Skin Contact:** Frequent or prolonged contact may irritate and cause dermatitis. Occasional brief contact with the liquid will not result in significant irritation. Skin contact may aggravate an existing dermatitis condition.

**Inhalation:** High vapor or aerosol concentrations are irritating to the eyes and the respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, central nervous system defects, brain damage, and possibly death.

**Ingestion:** Small amounts of this product aspirated into the respiratory system during ingestion or vomiting may cause mild to severe pulmonary injury, possibly progressing to death.

### Section 4 – First Aid

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**Eye:** Flush with large amounts of clean water for 15 minutes. If irritation persists, get medical attention.

**Skin:** Wash with soap and water. Get medical attention if irritation develops or persists. Wash clothing before reuse.

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen and continue to monitor. Get immediate medical attention.

**Ingestion:** Do not induce vomiting! Do not give liquids! Get medical attention immediately.

### Section 5 – Fire Fighting Measures

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**Extinguishing Media:** Water spray, foam, carbon dioxide, or dry chemical

**Fire Fighting Instructions:** Firefighters should be equipped with self-contained breathing apparatus and turn out gear. Use water spray to cool fire exposed surfaces and to protect personnel. Wear structural fire fighting gear.

**Flash Point:** N/A

### Section 6 – Accidental Release Measures

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**General:** Spills should be contained, solidified, and placed in suitable containers for disposal at a licensed facility.

**Waste Disposal:** Incinerate or bury in a licensed facility. Do not discharge into waterways or sewer systems without proper authority.

### Section 7 – Handling and Storage

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**General:** Avoid breathing mist or vapors and repeated or prolonged exposure with skin. Avoid eye contact. Do not drink.

**Storage:** Store and use in well ventilated area between 70-80F. Avoid excessive temperatures, low or high. Avoid moisture. Containers should be sealed tightly to prevent contamination from foreign materials.

### Section 8 – Exposure Controls & Personal Protection

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**Clothing:** Gloves, coveralls, apron, boots as necessary to prevent skin contact.

**Eyes:** Chemical goggles; also wear face shield if splashing hazard exists.

**Respiration:** Approved organic vapor mist respirator as necessary.

**Ventilation:** Use local exhaust to control vapors/mists.

### Section 9 – Physical & Chemical Properties

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**Color:** Colorless to light yellow

**Form:** Liquid

**Odor:** Polyol

**Odor Intensity:** Mild

**Specific Gravity:** 1.01

**Boiling Pt:** Not Available

**Freezing Pt:** Not Available

**Solubility:** Partial

### Section 10 – Stability & Reactivity

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**Stability:** Stable

**Conditions to Avoid:** Exposure to moisture and temperatures above 130F

**Incompatibility:** Moisture, acids, and strong oxidizers

### Section 11 – Toxicological Information

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No applicable data for this section.

### Section 12 – Ecological Information

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No applicable data for this section.

### Section 13 – Disposal Information

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**Waste Disposal:** Dispose of in compliance with federal, state, or local environmental control regulations. Incinerate or bury in a licensed facility. Do not discharge into waterways or sewer systems without proper authority.

**Container Disposal:** Steel drums must be emptied (as defined by RCRA, Section 261.7 or state regulations that may be more stringent) and can be sent to a licensed drum reconditioner for reuse, a scrap metal dealer, or an approved landfill. Drums destined for a scrap dealer or landfill must be punctured or crushed to prevent reuse.

**Section 14 - Transportation Information**

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Not regulated by the Department of Transportation

**Section 15 - Regulatory Information**

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**CERCLA:** No  
**SARA Title III, Section 313:** Not Listed  
**Section 311/312:** N/A  
**Section 313:** N/A  
**Hazardous Rating:** Health 2                      Fire 1                      Reactivity 1

**Section 16 - Other Information**

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No Data Available.

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To the best of our knowledge, the information contained herein is accurate. However Alumilite does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be handled with care. Although we have described herein all of the hazards to which we are currently aware, we cannot guarantee that these are the only hazards which exist. While the descriptions, designs, data, and information contained herein are presented in good faith and believed to be accurate, it is provided for your guidance only. Further, you expressly understand and agree that the descriptions, designs, data, and information furnished by Alumilite hereunder are given gratis and Alumilite assumes no obligation or liability for the description, designs, data, and information given or results obtained, all such being given and accepted at your risk.

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269 488-4000

Emergency Telephone: Chemtrec 1-800-424-9300

### Section 1 – Product Information

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Alumilite Water Clear “B” side

**Common Chemical Name:** Aliphatic Isocyanate

**Synonyms:** DMDI

**Chemical Family:** Aliphatic Isocyanate

**Molecular Weight:** N/A

### Section 2 - Ingredients

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Chemical:	CAS	Amount
Dicyclohexylmethane 4,4' Diisocyanate Prepolymer	Proprietary	<85%

All products are not listed as Carcinogen in NTP, IARC, or OSHA 1910(z)

### Section 3- Hazardous Identification

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#### Nature of Hazard

#### Emergency Overview

**Color:** Clear

**Form:** Liquid

**Odor:** Odorless

**Danger:** Toxic gases/fumes may be given off during burning or thermal decomposition. May cause skin, eye, and respiratory tract irritation. Harmful if inhaled; May cause allergic respiratory reaction; May cause lung damage; toxic gases/fumes are given off during burning or thermal decomposition.

#### Human Effects and Symptoms of Overexposure

**Eye Contact:** May cause irritation with symptoms of reddening, tearing, stinging and swelling. May cause temporary corneal injury. Vapor may cause irritation with symptoms of burning and tearing.

**Skin Contact:** May cause irritation with symptoms of reddening, itching, and swelling. Frequent or prolonged contact may irritate and cause dermatitis as well as cause sensitization. Occasional brief contact with the liquid will not result in significant irritation. Skin contact may aggravate an existing dermatitis condition.

**Acute Inhalation:** Diisocyanate vapors or mist at concentrations above the TLV can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing running nose, sore throat, coughing, chest discomfort, shortness of breath, and reduced lung function. Persons with preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the TLV or PEL with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the TLV or PEL may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g. fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. The effects are usually reversible.

**Chronic Inhalation:** As a result of previous repeated overexposures or a single large dose, certain individuals develop isocyanate sensitization (chemical asthma) which may cause them to react to a later exposure to isocyanate at levels well below the TLV. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath, or asthma attack, could be immediate or delayed (up to several hours after exposure). Similar to many non-specific asthmatic responses, there are reports that once sensitized and individual can experience these symptoms upon exposure to dust, cold air, or other irritants. Sensitization can be temporary or permanent. Chronic overexposure to diisocyanates has also been reported to cause lung damage (including fibrosis, decrease in lung function) that may be permanent.

**Ingestion:** Single dose oral toxicity is considered to be low. May cause irritation. Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

#### Section 4 – First Aid

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**Eye:** Holding eyelids open, flush with large amounts of clean water for 15 minutes. If irritation persists, get medical attention.  
**Skin:** Remove contaminated clothing. Wash with soap and water. Get medical attention if irritation develops or persists. Wash clothing before reuse.  
**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen and continue to monitor. Get immediate medical attention.  
**Ingestion:** Do not induce vomiting! Wash mouth out with water. Do not give liquids or anything by mouth to an unconscious person. Get medical attention immediately.

**Notes to Physician:** Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic steroid preparation frequently. Workplace vapors have produced reversible cornea epithelial edema impairing vision. Skin: This compound is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burns. If burned, treat as thermal burn. Ingestion: Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of this compound. Respiratory: This compound is a known pulmonary sensitizer. Treatment is essentially symptomatic. An individual having a skin or pulmonary sensitization reaction to this material should be removed from exposure to any isocyanate.

#### Section 5 – Fire Fighting Measures

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**Extinguishing Media:** Water spray, foam, carbon dioxide, or dry chemical  
**Fire Fighting Instructions:** Firefighters should be equipped with NFPA compliant structural firefighting equipment, including self-contained breathing apparatus and turn out gear. Use water spray to cool fire exposed surfaces and to protect personnel. During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. At temperatures greater than 350 F diisocyanate can be extremely dangerous.

**Flash Point:** 369 F  
**Autoignition Temp:** N/A

#### Section 6 – Accidental Release Measures

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**General:** Evacuate non-emergency personnel. Isolate the area and prevent access. Remove ignition sources. Notify management. Put on protective equipment. Spills should be contained, ventilated, solidified, and placed in suitable containers for disposal at a licensed facility.  
**Waste Disposal:** Incinerate or bury in a licensed facility. Do not discharge into waterways or sewer systems without proper authority.

#### Section 7 – Handling and Storage

---

**General:** Avoid breathing mist or vapors and repeated or prolonged exposure with skin. Avoid eye contact. Do not drink.  
**Storage:** Store and use in well ventilated area between 70-80F. Avoid excessive temperatures, low or high. Avoid moisture.

#### Section 8 – Exposure Controls & Personal Protection

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**Clothing:** Gloves, coveralls, apron, boots as necessary to prevent skin contact.  
**Eyes:** Chemical goggles; also wear face shield if splashing hazard exists.  
**Respiration:** Approved organic vapor mist respirator as necessary.  
**Ventilation:** Use local exhaust to control vapors/mists.

#### Section 9 – Physical & Chemical Properties

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**Color:** Clear  
**Form:** Liquid  
**Odor:** No odor  
**Specific Gravity:** 1.08  
**Boiling Pt:** Not Established  
**Freezing Pt:** Not Established

## Section 10 – Stability & Reactivity

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<b>Stability:</b>	Stable
<b>Conditions to Avoid:</b>	Exposure to temperatures above 350F
<b>Incompatibility:</b>	Moisture, amines, strong bases, alcohols, copper alloys.
<b>Hazardous Polymerization:</b>	Temperatures above 350 F and fire.

## Section 11 – Toxicological Information

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### Toxicity Data for Dicyclohexylmethane-4,4' –Diisocyanate

#### **Acute Oral Toxicity**

> 11,000 mg/kg (rat)

#### **Acute Inhalation Toxicity**

LC50: 434 mg/m<sup>3</sup>, aerosol, 4 hrs (rat)

LC50: 510 mg/m<sup>3</sup>, 1 hrs (guinea pig)

#### **Acute Dermal Toxicity**

LD50: >10,000 mg/kg (rabbit)

#### **Skin Irritation**

Rabbit, Draize Test, Exposure Time: 24 hrs, moderately irritating

#### **Eye Irritation**

Rabbit, Draize Test, Slightly irritating

#### **Sensitization**

Inhalation: sensitizer (guinea pig)

Dermal: sensitizer (mouse, mouse ear swelling)

#### **Repeated Dose Toxicity**

2 weeks, inhalation: NOAEL: <0.04 mg/l, (rat)

4 weeks, inhalation: NOAEL: 1.06 mg/m<sup>3</sup> (rat, male/female, 6 hrs/day 5 days/week)

#### **Mutagenicity**

Genetic Toxicity in Vitro

Ames: negative (Salmonella typhimurium, Metabolic Activation: with/without)

#### **Toxicity to Reproduction/Fertility**

Inhalation, 6 hrs/day 7 days/week, (rat, Male/Female) NOAEL (parental): 1.0 mg/m<sup>3</sup>, NOAEL (F2): 6.00 mg/m<sup>3</sup>

#### **Developmental Toxicity/Teratogenicity**

Rat, Female, inhalation, 6 hrs/day 7 days/week, NOAEL (teratogenicity): 6 mg/cbm, NOAEL (maternal): 1 mg/cbm

## Section 12 – Ecological Information

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### Ecological Data for Dicyclohexylmethane-4,4' –Diisocyanate

#### **Biodegradation**

Aerobic, 0%, Exposure time: 28 days

#### **Theoretical Biological Oxygen Demand (ThBOD)**

2,195 mg/g

#### **Acute and Prolonged Toxicity to Fish**

LC50: 1.2 mg/l (zebra fish, 96 hours)

#### **Acute Toxicity to Aquatic Invertebrates**

EC0: >8.3 mg/l (Water flea, 48 hours)

#### **Toxicity to Aquatic Plants**

EC50: > 5 mg/l, End Point: growth (green algae, 72 hours)

**Toxicity to Microorganisms**

EC50: 19 mg/l, (activated sludge microorganisms, 3 hours)

**Section 13 – Disposal Information**

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**Section 14 - Transportation Information**

Not regulated by the Department of Transportation.

**Section 15 - Regulatory Information**

This product is hazardous under the criteria of the Federal OSHA Hazardous Communication Standard 29 CFR 1910.1200

<b>CERCLA:</b>	Reportable Quantity: Over 5,000 lbs
<b>SARA Title III, Section 302:</b>	Not Listed
<b>Section 311/312:</b>	Acute Heath Hazard, Chronic Heath Hazard
<b>Section 313:</b>	Dicyclohexylmethane 4,4' Diisocyanate < 85%

**Hazardous Rating:** Health 3      Fire 1      Reactivity 1

**Section 16 - Other Information**

No Data Available.

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