



Material Safety Datasheet

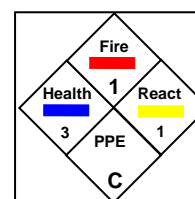
BC Flex-Cast Clear Isocyanate Part A

Clear Urethane Casting System

MSDS Version: 041714

I. Basic Information

Manufacturer: BCC Products
 Address: 2140 Earlywood Drive
 Franklin, Indiana 46131
 Emergency Phone: (317)736-4090
 Transportation Emergency Phone Number: Chem-trec 1-800-424-9300
 Chemical State: Liquid
 Chemical Type: Mixture



II. Ingredients

CAS No.	Chemical Name	% Range	EHS	NTP	IARC	SUB Z	SARA 313	OSHA PEL	ACGIH TLV	Other Limits
52292-18-9	Poly(oxy-1,4-butanediyl),alpha-hydro-omega-hydroxy, polymer with 1,1'-methylenebis[4-isocyanatocyclohexane]	10-20								
5124-30-1	Dicyclohexylmethan-4,4'-diisocyanate	80-90					x	NE	0.005 ppm	NE

III. Hazardous Identification

Hazard Category

Acute Chronic Fire Pressure Reactive

Hazardous Identification Information

- **Warning!**
- **Contains dicyclohexylmethan-4,4'-diisocyanate (also known as 1,1'-methylene bis(4-isocyanatocyclohexane, HMDI)**
- **Clear Viscous Liquid**
- **Contact may cause skin, eye and respiratory tract irritation.**
- **Incompatible with water, strong bases, oxidizers, alcohols, amines and other materials which react with isocyanates.**



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IV. First Aid Measures

Route(s) of entry:

Inhalation, ingestion, skin and eye contact.

Health Hazards (Acute and Chronic):

Acute (short term)

Contact may cause skin and eye irritation. Inhalation of vapors may cause respiratory tract irritation.

Chronic (Delayed):

Repeated skin and eye contact may produce sensitivity (rash, itching). Repeated inhalation of vapors may cause immediate or delayed respiratory sensitization leading to asthma-like conditions and difficulty breathing.

Signs and Symptoms:

Skin, eye and respiratory tract irritation.

Medical Conditions Generally Aggravated by Exposure:

Respiratory disorders like asthma and difficulty in breathing..

Emergency and First Aid Procedures:

SKIN CONTACT: Remove contaminated clothing and wash affected area with isopropyl alcohol followed by soap and water.

EYE CONTACT: Flush eyes with water for at least 15 minutes and contact a physician.

INGESTION: DO NOT INDUCE VOMITING. Take 1-2 glasses of water and contact a physician.

Do not give anything by mouth to an unconscious person.

INHALATION: Remove person to fresh air. If person is not breathing, give mouth-to-mouth resuscitation and contact a physician.

Other Health Warnings:

Wash hands thoroughly after handling this material before eating, smoking, ect.

V. Fire Fighting Measures

Flash Point: > 395°F

Lower Explosive Limit: NE

Upper Explosive Limit: NE

Fire Extinguishing Media: Foam, Water Fog, Carbon Dioxide or Dry Chemical Extinguishers. Water, if it is to be used, should be used in very large quantities.

Special Fire Fighting Procedures:

Fire fighters should wear a self-contained breathing apparatus and protective clothing to guard against incompletely combusted carbon products.

Unusual Fire and Explosion:

Contamination of isocyanates with water releases carbon dioxide which may result in a dangerous pressure build-up in closed containers. DO NOT reseal contaminated containers. Personnel must be evacuated. Use cold water to cool fire exposed containers.



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VI. Accidental Release Measures

Steps to be taken in case material is released or spilled:

Remove all sources of ignition and ventilate area. Wear Protective equipment. Cover liquid with an absorbent material (saw dust, vermiculite, or wet sand). After the material is absorbed scoop up and place in open containers. Treat material with prepared decontamination solution and leave the container open in a well ventilated area for 48 hours. The spill area should also be decontaminated with the following decontamination solution: 90% water, 2% detergent soap and 8% concentrated ammonia or sodium carbonate.

VII. Handling and Storage

Precautions to be taken:

Store in a cool, dry place in tightly sealed containers. Protect from heat and moisture contamination.

Other Precautions:

Avoid contact with skin, eyes and clothing. Any potential hazard can be minimized by using the recommended protective equipment.

VIII. Exposure Controls / Personal Protection

Chemical Name	Exposure Limits
Poly(oxy-1,4-butanediyl),alpha-hydro-omega-hydroxy, polymer with 1,1'-methylenebis[4-isocyanatocyclohexane]	None Established
dicyclohexylmethan-4,4'-diisocyanate	0.005 ppm TWA ACGIH TLV

Ventilation Requirements:

Local Exhaust: Provide mechanical (general) and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

Personal Protective Equipment:

Respiratory Protection: None needed at normal temperatures. Use a self-contained breathing apparatus for high concentrations and under emergency conditions.

Protective gloves: Impervious rubber or nitrile gloves.

Eye Protection: Wear safety glasses or goggles.

Other Protective Clothing or Equipment: An apron or suitable clothing to prevent skin contact.



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IX. Physical and Chemical Properties

Boiling Point: > 400°F **Melting Point:** NE **Evaporation Rate:** NE
Flash Point: > 395°F
Vapor Pressure (mm Hg): 0.000015 **Vapor Density (Air = 1):** NE
Flammability: Combustible
Solubility in water: Reacts with water
Solubilities: Ketones, toluene
Appearance and odor: Clear liquid, characteristic odor.
Other Information: Volatility at 75°F = very low
Percent Volatile by Volume (%) = negligible
Viscosity, cPs: 1500-2000
Specific Gravity: 1.06

X. Stability and Reactivity

Stability: Stable except at high temperatures (>200°F)
Incompatibility (materials to avoid): Incompatible with water, strong bases, oxidizers, alcohols, amines and other materials which react with isocyanates.
Decomposition By-Products: High temperatures and burning conditions may release HMDI vapors, cyanates, hydrocarbons and oxides of carbon and nitrogen.
Hazardous polymerization: Will not occur. If the material is heated above 160°F for extended periods, polymerization may occur but does not constitute a safety hazard.

XI. Toxicological Information

For Dicyclohexylmethane-4,4'-diisocyanate:

Acute Toxicity: Oral LD50(Rat)= 1065 mg/kg
Dermal LD50(Rabbit)= 10,000 mg/kg
Inhalation LC50(Rat), For 4-hour exposure periods = 434 mg/m³, 295 mg/m³ (Male Rat), 307 mg/m³ (Female Rat)
LCLo = 200 mg/m³ (Rat)
Noel = 113 mg/m³
Subacute: Exposure for 4-hours per day, 5-days per week for 2-weeks:
120 mg/m³ caused respiratory irritation and decreased growth.
40 mg/m³ caused initial loss of weight (Rat)
Eye Effects: Mild, reversible irritation (Rabbit)

Potential Acute health Effects:

Inhalation of vapors and mist of dicyclohexylmethane-4,4'-diisocyanate at concentration above the applicable exposure limit can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing a runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function. Persons with a preexisting, nonspecific bronchial hyperactivity can respond to concentrations below the exposure limit with similar symptoms as well as an asthma attack.



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XI. Toxicological Information, continued.

Exposure well above the exposure limit may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu-like symptoms (e.g., fever, chills) has also been reported. Dicyclohexylmethane-4,4'-diisocyanate is a primary skin irritant. It reacts with the skin protein and moisture and can cause irritation. Symptoms of skin irritation can include redness, swelling, rash, scaling or blistering. Dicyclohexylmethane-4,4'-diisocyanate is also a potent skin sensitizer. Experience indicates that direct skin contact is the route of exposure most likely to cause sensitization. Once sensitized, an individual may react even to airborne levels below the applicable exposure limit with the following symptoms: itching, tingling of the earlobes and neck, rash, hives, swelling of the arms and legs or other symptoms common to allergic dermatitis. These symptoms may be immediate or delayed for several hours. Liquid, vapors and mist of this product can cause tearing, reddening and swelling of the eyes, possibly accompanied by a stinging sensation. Can result in irritation and possible corrosive action in the mouth, stomach and digestive tract.

Target organs:	Respiratory system.
Carcinogenicity:	This product is not listed by NTP, IARC, or regulated as a carcinogen by OSHA .
Mutagenicity:	Ames test negative for mutagenicity with and without liver enzyme activation
Other toxic effects:	No data available.

XII. Ecological Information

Fish Toxicity for Dicyclohexylmethane-4,4'-diisocyanate:
Brachydanio, 96 hours = LCO 0.69 mg/l, LC50 = 1.20 mg/l,
LC100 = 2.76 mg/l
Persistence and degradability: No data available.
Bioaccumulative potential: No data available.
Other adverse effects: No data available.

XIII. Disposal Considerations

Neutralized waste must be disposed of in accordance with federal, state and local environmental control regulations. Incineration is the preferred disposal method. Decontaminate containers prior to disposal.

XIV. Transportation Information

Shipping name: Other regulated substances, liquid, n.o.s.
Contains Dicyclohexylmethane-4,4'-diisocyanate
Other Regulated Substances, liquid, n.o.s. (contains Dicyclohexylmethane-4,4'-diisocyanate)
Hazard class 9
UN/NA: NA3082
Packing Group III



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XV. Regulatory Information

TSCA Inventory Status: This product, or its components, are listed on, or are exempt from the Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

SARA 313 Information: This product contains the following substances subject to reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS No.	Concentration
1,1'-methylenebis(4-isocyanatocyclohexane) Or (dicyclohexylmethan-4,4'-diisocyanate)	5124-30-1	80-90%

SARA Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

- An immediate health threat
- A delayed health threat
- A reactive hazard

STATE REGULATIONS:

California Proposition 65: This product contains the following substances known to the State of California to cause cancer and reproductive toxicity (birth defects):
 None.

XVI. Other Information

HMIS Ratings: Health – 3 Flammability - 1 Physical Hazard - 1
NFPA Ratings: Health – 3 Flammability - 1 Reactivity - 1
 0= Minimal, 1= Slight, 2= Moderate, 3= High, 4= Extreme

MSDS Revision History

9/19/12: New Issue.

4/17/14: Reviewed and approved.

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. BCC Products shall not be held liable for any damage resulting from handling or from contact with the above product.

In this document, the following abbreviations were used:

- NA = Not Applicable
- NE = Not Established