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page 1 of 4

Material Safety Data Sheet

Product Name: Z-8002 Part B, ISOCYANATE

Date: 12/12/2001

Supersedes: 12/13/2000

1. PRODUCT AND COMPANY IDENTIFICATION

Manufacturers Name: Development Associates, Inc.
300 Old Baptist Rd.
North Kingstown, RI 02852

Emergency Phone No: Chemtrec (800) 424-9300 24 Hour

Product Name: Z-8002 Part B, ISOCYANATE

Chemical Family/Name: Aliphatic Polyisocyanate Mixture

Trade Name Aliphatic Isocyanate

2. COMPOSITION / INGREDIENT INFORMATION

Component	CAS #	%	Exposure limits(source)
Dicyclohexylmethane-4-4'-			
Diisocyanate	5124-30-1	10-40	0.005 ppm(3)
Aliphatic			
polyisocyanate	Trade secret	60-90	n/e(5)

Source of Exposure Limit Data: 1. ACGIH Threshold Limit Values 2. Federal OSHA Permissible exposure limit 3. DAI Exposure Guidelines 4. Chemical Manufacturer Recommended Guidelines 5. None Established

Abbreviations: n/a-not applicable, n/d-not determined, n/e-not established

3. HAZARDS IDENTIFICATION

HMIS HEALTH 2, FIRE 1, REACTIVITY 1

Threshold Limit Value: None established, 0.005 ppm is recommended. 0.010 ppm is the ceiling TLV by OSHA and 0.005 ppm is the TWA TLV from ACGIH for Dicyclohexylmethane-4-4'-diisocyanate.

Routes of Entry: At room temperature by skin absorption. At high temperatures or if the material is atomized, by inhalation and skin absorption.

Signs and Symptoms of Exposure:

Eyes: Redness, irritation, tearing, burning sensation.

Skin: Rash, redness, itching.

Inhalation: Irritation of the respiratory tract, runny nose, sore throat, coughing and reduction of lung function. Hypersensitivity, indicated by asthmatic reaction is possible in some individuals. Smarting and weeping of the nose and throat indicate that the diisocyanate concentration in the air is above acceptable limits.

Acute Effects of Overexposure:

Inhalation: Irritation of the respiratory tract, runny nose, sore throat, coughing and reduction of lung function. Hypersensitivity, indicated by asthmatic reaction is possible in some individuals. Smarting and weeping of the nose and throat indicate that the diisocyanate concentration in the air is above acceptable limits. Once sensitized an individual may react allergically to airborne levels below the exposure limits.

Skin: Prolonged or repeated contact may cause irritation, redness, swelling and dermatitis. Some individuals may become hypersensitized. Once sensitized an individual may react allergically to airborne levels below the exposure limits.

Eyes: Liquid and vapors are irritating.

Ingestion: Irritation and burning of mouth, throat and stomach.

Chronic Effects of Exposure: Some individuals may become hypersensitized and react allergically with dermatitis or asthma when exposed to airborne levels below the exposure limits.

Medical Conditions Aggravated by Exposure: Dermatitis, Asthma, other respiratory ailments or skin conditions.

Carcinogenicity: This product and its constituents are not listed as carcinogens by IARC, NTP or regulated as carcinogens by OSHA at this time.

4. FIRST AID MEASURES

Emergency and First Aid Procedures:

Eyes: Flush with water for at least 15 minutes. Consult an Ophthalmologist.

Skin Contact: Remove contaminated clothing. Wash affected areas thoroughly, with soap and water. Cover affected area with polyethylene glycol (300-500 mw.) or glycerin and wash again with soap and water. Apply moisturizing cream. Consult physician. Treat dermatitis symptomatically. Wash clothing before reusing.

Inhalation: Move to fresh air. Administer oxygen or artificial respiration as needed. Consult physician. Treat symptomatically.

Ingestion: DO NOT INDUCE VOMITING. Give milk or water. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Consult a physician.

5. FIRE AND EXPLOSION DATA

Flash Point >395°F (202°C) TCC

Flammable Limits in Air % Volume Upper: n/a Lower: n/a

Extinguishing Media Foam, CO₂, or Dry Chemical

Unusual Fire and Explosion Hazards: During a fire, diisocyanate vapors and other irritating, highly toxic gasses may be generated by thermal decomposition or combustion. Extremely high temperatures may cause closed containers to pressurize resulting in explosive rupture.

Special Fire Fighting Procedures: Use full emergency equipment with self-contained breathing apparatus. Use cold water to cool fire-exposed containers.

6. ACCIDENTAL RELEASE MEASURES

Steps to be Taken in Case Material is Released or Spilled: Remove unnecessary personnel. Ventilate area. Equip clean-up crew with appropriate protective gear. Leaks should be stopped and spill diked to control spreading. Cover spill with absorbent material such as Zip-Zorb (activated clay), diatomaceous earth, or saw dust. Sprinkle on a decontaminating solution of 25% household ammonia, 73% water, and 2% detergent. Allow to react for 15 to 30 minutes. Collect in containers. Add more decontamination solution. Cover loosely. Wash down area with soap and water. Rinse.

7. HANDLING AND STORAGE

Precautions to be Taken in Storage and Handling: Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. If container is exposed to high heat, it can be pressurized and possibly rupture. Diisocyanates react slowly with water to form CO₂ gas. This can cause sealed containers to expand and possibly rupture. Avoid contact with skin and eyes. This material may crystallize at storage temperatures below 15°C (50°F). Before using, melt crystals and mix material by warming drum to 50°-60°C (120°-140°F) and rolling the drum. When mixing, avoid inclusion of moist air.

Storage Temperature: 77°F (25°C) / 122°F (50°C) **Shelf Life:** 12 months @ 77°F (25°C)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection: Liquid chemical goggles or full face screen. Contact lenses should not be worn.

Skin Protection: Rubber Gloves, aprons and other protective clothing as required to prevent contact. Remove any contaminated clothing and wash before use. Routinely wash hands, arms and face with soap and water after handling. Do not smoke or eat until hands and face have been washed.

Ventilation and Respiratory Protection: Ventilate as required to maintain diisocyanate concentrations below 0.005 ppm. At room temperature general mechanical ventilation is adequate. At elevated temperatures additional ventilation may be required, an organic vapor respirator may be used for short periods as

supplemental protection at levels below the exposure level. At exposure levels above exposure limits a supplied air respirator is required, due to the poor warning properties of this product.

Other: Safety showers and eye wash stations should be available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	clear liquid
Color	clear
Odor	mild
Boiling Range	decomposes over 150°C
Melting Point	sets to glass <0°C. 5-40% of the material may crystallize at temps. less than 15°C.
Evaporation Rate(BuAcet=1)	n/a
Vapor pressure	1 x 10 ⁻³ mm Hg @ 68°F (20°C)
Vapor Density (air=1)	heavier than air
Weight per Gallon	8.79
Specific Gravity	1.06
Solubility in Water(%)	Insoluble/reacts with water
Percent Volatile	negligible

10. STABILITY AND REACTIVITY

Stability Stable under normal conditions.

Conditions to Avoid High heat, contamination.

Incompatibility (materials to avoid) Water, amines, strong bases, alcohols.

Hazardous Polymerization Will not occur under normal conditions.

Hazardous Decomposition Products By high heat and fires: Diisocyanate vapors, CO, CO₂, oxides of nitrogen, traces of HCN.

11. TOXICOLOGICAL INFORMATION

Dicyclohexylmethane-4-4'-Diisocyanate: Oral rat LD50: 1065 mg/kg; Dermal rabbit LD50: 10000 mg/kg; Inhalation rat LC50 4 hr exposure periods: 434 mg/m³; Eye rabbit: mild reversible irritation; Skin guinea pig: irritation and potent skin sensitizer.

12. ECOLOGICAL INFORMATION

This material reacts slowly with water and is not expected to accumulate in the environment.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: If discarded in its purchased form, this product is not hazardous waste either by listing or by characteristic. However, processing, use or contamination of this product may change its hazardous waste status. Under RCRA, it is the responsibility of the product user to determine, at the time of disposal, whether a material is a hazardous waste. State and local disposal regulations may differ from federal disposal regulations. Dispose in accordance with all federal, state, and local waste disposal laws and regulations. Incineration is the preferred method.

14. TRANSPORT

D.O.T. Shipping Name	none
Technical Shipping Name	Z-8002 Part B (aliphatic polyisocyanate)
D.O.T. Hazard Class	not classified
UN/NA Number	none
NMFC Item	Plastic material liquid No. 156240 Class 60

15. REGULATORY

Chemical Inventories: All components of this mixture are listed in the TSCA inventory.

SARA 313: Dicyclohexylmethane-4-4'-Diisocyanate, CAS 5124-30-1 is included in Diisocyanates, N120. The concentration is no greater than the maximum shown in section 2.

For details on regulatory requirements you should contact the appropriate agency in your state.

16. OTHER

This data is offered in good faith as typical values and not as a product specification. The information in this data sheet was compiled from information supplied by the vendors of the components of this compound. No warranty, either expressed or implied is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

The information on this data sheet is only to assist in the safe handling of this material, and may contain trade secrets which may not be divulged to anyone except the users of this material and health care and hygiene professionals as required for its safe use. No license or permission to infringe any patent or breach any trade secret is given.