

MATERIAL SAFETY DATA SHEET

1. Product Information

Product Name: Bio-Clear 810 Curing Agent
Product Code: RTC020 B

Chemical Family: Cycloaliphatic Amine

2. Composition/Information on Ingredients

Item	Chemical Name	CAS Number	w/w %
01	Isophoronediamine	2855-13-2	<50.0 %
02	Benzyl Alcohol	100-51-6	<50.0 %

Exposure Limits

Item	ACGIH		OSHA		COMPANY		SKIN
	TLV-TWA	TLV-STEL	PEL-TWA	PEL-CEILING	TLV-TWA		
01	N.E.	N.E.	N.E.	N.E.	N.E.	Yes	
02	N.E.	N.E.	N.E.	N.E.	N.E.	Yes	

N.A. = Not Applicable, N.E. = Not Established, N.D. = Not Determined

3. Hazardous Identification

Emergency Overview: Causes allergic skin reaction. Causes skin irritation. May cause allergic skin reaction. May cause allergic respiratory reaction. Corrosive Liquid. **EFFECTS OF OVEREXPOSURE: EYE CONTACT** - May cause irritation. Repeated and/or long term exposure may cause adverse effects (such as conjunctivitis or corneal damage). **SKIN CONTACT** - Causes skin irritation. Allergic reactions are possible. May cause skin sensitization, an allergic reaction, which becomes evident on reexposure to this material. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash). **INHALATION** - Inhalation of vapors causes skin irritation of the respiratory tract and may cause adverse systemic effects.

INGESTION - Ingestion may cause headache, nausea, vomiting, death unless treated promptly. **CHRONIC HAZARDS** - Repeated and/or prolonged exposures may result in: liver disorders (such as jaundice or liver enlargement), kidney disorders (such as edema or proteinuria), adverse respiratory effects (such as cough, tightness of chest or shortness of breath), adverse skin effects (such as defatting, rash, irritation or corrosion), adverse eye effects (such as conjunctivitis or corneal damage). **PRIMARY ROUTES OF ENTRY:** Skin contact, skin absorption, inhalation, ingestion, eye contact.

4. First Aid Measures

Eye Contact: Hold eyelids apart and immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention. **Skin Contact:** Remove product and immediately flush affected area with plenty of water for 15 minutes. Call a physician. **Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician. **Ingestion:** In the event of ingestion, administer 3-4 glasses of milk or water. DO NOT INDUCE VOMITING. Obtain medical care and hospital treatment immediately. Note to physicians: This product is highly injurious to all tissues, similar to that of ammonia or ammonia gas. Chemical pneumonitis, pulmonary edema, laryngeal edema and delayed scarring of the airway or other affected tissues may occur following exposure. There is no specific treatment. Clinical management is based on supportive treatment, which is similar to that for thermal burns.

5. Fire Fighting Measures

Flash Point: 203°F (Pensky-Martens C.C.) Lower Explosive Limit: N.A. Upper Explosive Limit: N.A. Autoignition Temperature: N.A.
Extinguishing Media: Alcohol foam, Co2, Dry Chemical, Water Fog **Unusual Fire and Explosion Hazards:** May generate toxic or irritating combustion products. May generate carbon monoxide gas. May generate toxic nitrogen oxide gases. Vapors may travel along the ground to a source of ignition and flash back. Vapors may collect in closed spaces such as sewers, caves or closed structures. Sudden reaction and fire may result if product is mixed with an oxidizing agent.
SPECIAL FIREFIGHTING PROCEDURES: Wear NIOSH approved self-contained breathing apparatus with independent air supply. Firefighters should wear butyl rubber boots, gloves and body suit as well as a self-contained breathing apparatus. Water runoff can cause environmental damage. Dike and collect water used to fight fire.

6. Accidental Release Measures

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Flush area with water spray. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Avoid runoff into storm sewers and ditches which lead to waterways. Wear a self-contained breathing apparatus and appropriate personal protective equipment. (See Exposure Controls/Personal Protection Section)

7. Handling and Storage

HANDLING: Handle in well ventilated work space. Empty containers may contain explosive vapors. Flush empty containers with water to remove residual flammable liquid and vapors. Wash thoroughly after handling. Avoid contact with skin, eyes and clothing. **STORAGE:** Keep container closed when not in use. Keep container in a cool, well ventilated place. Keep away from food, drink and animal feeding stuffs. Store away from ignition sources. Ground all containers during transfer. Keep away from oxidizers heat or flames.

8. Exposure Controls/Personal Protection

ENGINEERING CONTROLS: Good general Ventilation should be sufficient to control airborne levels. Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. **RESPIRATORY PROTECTION:** In poorly ventilated areas, a cartridge mask NIOSH approved for organic vapors is recommended. For emergency situations use self-contained breathing apparatus with pressure demand mode. **SKIN PROTECTION:** Where contact is likely, wear chemical resistant gloves, rubber boots, and chemical safety goggles. **EYE PROTECTION:** Wear chemical safety glasses with side shields or goggles. **OTHER PROTECTIVE EQUIPMENT:** Nitrile rubber gloves. **HYGIENIC PRACTICES:** Wash hands before eating. Remove contaminated clothing and wash before reuse. Use only in a well ventilated area. Avoid contact with eyes, skin and clothing.

9. Physical and Chemical Properties

BOILING RANGE: N.A. **VAPOR DENSITY:** Is heavier than air **ODOR:** Ammoniacal **ODOR THRESHOLD:** No Data **APPEARANCE:** Colorless
EVAPORATION RATE: Is slower than Ether **SOLUBILITY IN H2O:** None **FREEZE POINT:** No Data **SPECIFIC GRAVITY:** 1.0110
VAPOR PRESSURE: No Data **PH @ 100.0%:** >7 **PHYSICAL STATE:** Liquid **VISCOSITY:** N.A. **COEFFICIENT OF WATER/OIL**
DISTRIBUTION: No data

Product Name: Bio-Clear 810 Curing Agent

10. Stability and Reactivity

CONDITIONS TO AVOID: Not applicable **INCOMPATIBILITY:** Oxidizing agents **HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon monoxide in a fire. Carbon dioxide in a fire. Nitrogen oxides in a fire. Irritating and toxic fumes at elevated temperatures. **HAZARDOUS POLYMERIZATION:** Will not occur under normal conditions. **STABILITY:** This product is stable under normal storage conditions.

11. Toxicological Properties (Component Toxicological Information)

No product or component toxicological information is available.

12. Ecological Information

ECOTOXICITY: Exposure at low concentrations may kill fish **ENVIRONMENTAL FATE:** 2855-13-2 Isophoronediamine; biodegradable

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Comply with all Federal, State and Local Regulations. Incinerate in admixture with fuel equipped with a scrubber to remove nitrogen oxides and carbon monoxide. Dispose of in a permitted waste management facility if incineration or landfill is not practicable.

14. TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: Amines, Liquid, Corrosive, N.O.S. DOT TECHNICAL NAME: (Isophoronediamine)
DOT HAZARD CLASS: 8 HAZARD SUBCLASS:
DOT UN/NA NUMBER: UN2735 PACKING GROUP: III RESP. GUIDE NO: 153

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: AS FOLLOWS - OSHA; Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)
CERCLA - 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:

IMMEDIATE HEALTH HAZARD: SARA SECTION 313: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40CFR Part 372:

-----CHEMICAL NAME-----	CAS NUMBER	WT/WT %
No SARA Section 313 components exist in this product.		

TOXIC SUBSTANCES CONTROL ACT:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12 (B) if exported from the United States:

-----CHEMICAL NAME-----	CAS NUMBER
No information is available.	

U.S. STATE REGULATIONS: AS FOLLOWS:

NEW JERSEY RIGHT-TO-KNOW:

The following materials are among the top five components in this product:

Isophoronediamine	2855-13-2
Benzyl alcohol	100-51-6
Aliphatic amine adduct	Proprietary
Aliphatic amine blend	Proprietary

PENNSYLVANIA RIGHT-TO-KNOW:

The following ingredients are present in the product at greater than 3%:

-----CHEMICAL NAME-----	CAS NUMBER
Isophoronediamine	2855-13-2
Benzyl alcohol	100-51-6
Aliphatic amine adduct	Proprietary
Aliphatic amine blend	Proprietary

CALIFORNIA PROPOSITION 65:

WARNING: The chemical(s) noted below and contained in this product, are known to the state of California to cause cancer, birth defects or other reproductive harm:

-----CHEMICAL NAME-----	CAS NUMBER
No Proposition 65 chemicals exist in this product.	

INTERNATIONAL REGULATIONS: AS FOLLOWS:

CANADIAN WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for use of the 16 heading.

CANADIAN WHMIS CLASS: E CORROSIVE

16. OTHER INFORMATION

HMIS RATINGS - Health: 3, Flammability: 1, REACTIVITY: 0
VOLATILE ORGANIC COMPOUNDS (VOCs): 3.37 lbs/gal, 404 grams/ltr

The information contained on this MSDS has been checked and should be accurate. However it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.

date of prepn: 25SEP01 Manufactured by RTC of IL Chemtec: 800-424-9300
Distributed by: Progressive Epoxy Polymers - 48 Wildwood Drive - Pittsfield, NH 03263 - Tel: 603-435-7199 - Fax: 603-435-7182

1. Product Information

Product Name: Bio-Clear 810 Epoxy Base
Product Code: RTC020 A

2. Composition/Information on Ingredients

Item	Chemical Name	CAS Number	w/w %
01	Bisphenol A epoxy resin	025085-99-8	<100.0 %

Exposure Limits

Item	ACGIH		OSHA		COMPANY		SKIN
	TLV-TWA	TLV-STEL	PEL-TWA	PEL-CEILING	TLV-TWA		
01	N.E.	N.E.	N.E.	N.E.	N.E.	Yes	

N.A. = Not Applicable, N.E. = Not Established, N.D. = Not Determined

3. Hazardous Identification

Emergency Overview: May cause allergic skin reaction. **EFFECTS OF OVEREXPOSURE: EYE CONTACT** - May cause slight transient (temporary) eye irritation. Corneal injury is unlikely. **SKIN CONTACT** - May cause skin sensitization, an allergic reaction, which becomes evident on reexposure to this material.

INHALATION - Vapors are unlikely due to physical properties. **INGESTION** - No hazard in normal industrial use. **CHRONIC HAZARDS** - Not classified as a carcinogen. No known teratological or reproductive effects. **PRIMARY ROUTES OF ENTRY:** Skin contact, inhalation, ingestion, eye contact.

4. First Aid Measures

Eye Contact: Flush eyes with plenty of water. **Skin Contact:** Wash off in flowing water or shower. **Inhalation:** No adverse effects anticipated by this route of exposure. **Ingestion:** If swallowed, DO NOT induce vomiting. Give victim a glass of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

5. Fire Fighting Measures

Flash Point: 485°F (Pensky-Martens C.C.) Lower Explosive Limit: N.A. Upper Explosive Limit: N.A. Autoignition Temperature: N.A.

Extinguishing Media: Co2, Dry Chemical, Foam **Unusual Fire and Explosion Hazards:** The byproducts expected in incomplete pyrolysis or combustion of epoxy resins are mainly phenolics, carbon monoxide and water. The thermal decomposition products of epoxy resins therefore should be treated as potentially hazardous substances, and appropriate precautions should be taken.

SPECIAL FIREFIGHTING PROCEDURES: Firefighters should wear butyl rubber boots, gloves and body suit as well as a self-contained breathing apparatus. Water runoff can cause environmental damage. Dike and collect water used to fight fire.

6. Accidental Release Measures

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Flush area with water spray. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Avoid runoff into storm sewers and ditches which lead to waterways.

7. Handling and Storage

HANDLING: Wash thoroughly after handling. Avoid contact with skin, eyes and clothing. **STORAGE:** Keep from freezing. Keep container closed when not in use.

8. Exposure Controls/Personal Protection

ENGINEERING CONTROLS: Good general Ventilation should be sufficient to control airborne levels. **RESPIRATORY PROTECTION:** In poorly ventilated areas, a cartridge mask NIOSH approved for organic vapors is recommended. **SKIN PROTECTION:** Where contact is likely, wear chemical resistant gloves, rubber boots, and chemical safety goggles.

EYE PROTECTION: Wear chemical safety glasses with side shields or goggles. **OTHER PROTECTIVE EQUIPMENT:** Nitrile rubber gloves. **HYGIENIC PRACTICES:** Wash hands before eating. Remove contaminated clothing and wash before reuse. Follow all MSDS/label precautions even after container is emptied because they may retain product residues. Avoid prolonged or repeated contact with skin. Avoid contact with eyes, skin, and clothing.

9. Physical and Chemical Properties

BOILING RANGE: N.A. **VAPOR DENSITY:** Is heavier than air **ODOR:** Faint epoxy odor **ODOR THRESHOLD:** N.A. **APPEARANCE:** Clear
Liquid **EVAPORATION RATE:** Is slower than Ether **SOLUBILITY IN H2O:** None **FREEZE POINT:** N.A. **SPECIFIC GRAVITY:**
1.1612 **VAPOR PRESSURE:** N.A. **PH @ 0.0%:** N.A. **PHYSICAL STATE:** Liquid **VISCOSITY:** N.A. **COEFFICIENT OF WATER/OIL**
DISTRIBUTION: None

10. Stability and Reactivity

CONDITIONS TO AVOID: Excess heating above 60°C over long periods of time degrades resin. **INCOMPATIBILITY:** Bases, acids, amines and oxidizing materials. **HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon monoxide and phenolics in a fire. **HAZARDOUS POLYMERIZATION:** Will not occur under normal conditions. **STABILITY:** This product is stable under normal storage conditions.

11. Toxicological Properties (Component Toxicological Information)

Chemical Name	LD50	LC50
Bisphenol A epoxy resin	>5000 mg/kg o-rat	No information

Product Name Bio-Clear 810 Epoxy Base

12. Ecological Information

ECOTOXICITY: Material is highly toxic to aquatic organisms on an acute basis under aerobic static laboratory conditions is below detectable limits.

ENVIRONMENTAL FATE: Bioconcentration potential is low. Biodegradation

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Comply with all Federal, State and Local Regulations.

14. TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: Resin Compound - Not regulated
DOT HAZARD CLASS:
DOT UN/NA NUMBER: PACKING GROUP:

DOT TECHNICAL NAME:
HAZARD SUBCLASS:
RESP. GUIDE NO:

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: AS FOLLOWS - OSHA; Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)
CERCLA - 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:

IMMEDIATE HEALTH HAZARD: SARA SECTION 313: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40CFR Part 372:

-----CHEMICAL NAME-----	CAS NUMBER	WT/WT %
No SARA Section 313 components exist in this product.		

TOXIC SUBSTANCES CONTROL ACT:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12 (B) if exported from the United States:

-----CHEMICAL NAME-----	CAS NUMBER
No information is available.	

U.S. STATE REGULATIONS: AS FOLLOWS:

NEW JERSEY RIGHT-TO-KNOW:

The following materials are among the top five components in this product:

-----CHEMICAL NAME-----	CAS NUMBER
Bisphenol A epoxy resin	025085-99-8
Acrylate copolymer	Proprietary

PENNSYLVANIA RIGHT-TO-KNOW:

The following ingredients are present in the product at greater than 3%:

-----CHEMICAL NAME-----	CAS NUMBER
Bisphenol A epoxy resin	025085-99-8

CALIFORNIA PROPOSITION 65:

WARNING: The chemical(s) noted below and contained in this product, are known to the state of California to cause cancer, birth defects or other reproductive harm:

-----CHEMICAL NAME-----	CAS NUMBER
No Proposition 65 chemicals exist in this product.	

INTERNATIONAL REGULATIONS: AS FOLLOWS:

CANADIAN WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for use of the 16 heading.

CANADIAN WHMIS CLASS: D-2B - Skin Sensitizer.

16. OTHER INFORMATION

HMIS RATINGS - Health: 1, Flammability: 1, REACTIVITY: 0
VOLATILE ORGANIC COMPOUNDS (VOCs): 0.00 lbs/gal, 0 grams/ltr

The information contained on this MSDS has been checked and should be accurate. However it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.