

# Material Safety Data Sheet

# 115-3302

CircuitMedic, 22 Parkridge Road, Haverhill, MA 01835 USA  
 Phone: 978-373-1600 | Website: <http://www.circuitmedic.com>

Revision Date: Jun 26, 2013  
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## Section 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Epoxy  
**Product Number:** 115-3302  
**Distributor:** CircuitMedic  
 22 Parkridge Road, Haverhill, MA 01835 USA  
 PHONE: 978-373-1600, FAX: 978-372-5700

**Emergency Response:** AAPC: USA - 800-222-1222

This epoxy is packaged in a 2 part plastic package including a "Resin" and "Hardener". The components are mixed just prior to use.

### HMIS Rating:

**Health:** 3 **Flammability:** 1  
**Physical Hazard:** 0 **Personal Protection:** B

## Section 2. COMPOSITION, INFORMATION OR INGREDIENTS

Component	Chemical Name	C.A.S. Number	EINECS	Classification	% by Weight
Hardener	Amine - Epoxy Resin Adduct	Proprietary	Proprietary	Not established	60-100
Hardener	2,2'-iminodiethylamine	111-40-0	203-865-4	Xn,C;R21/22,R34,R43 *	10-30
Resin	Bisphenol A/epichlorohydrin Resin	25068-38-6	500-033-5	Xi,N; R36/38,R43,R51/53 *	85-90
Resin	N-butyl Glycidyl Ether	002426-08-6	-	-	10-15

\*See Section 16

## Section 3. HAZARD IDENTIFICATION

### Emergency Overview:

**Immediate Concerns:** Corrosive. Will cause eye burns and permanent tissue damage.

### Potential Health Effects:

**Eyes:** Corrosive to the eyes and may cause severe damage including blindness.  
**Skin:** Causes skin burns, irritation and possible allergic reaction.  
**Ingestion:** Can burn mouth, throat and stomach.  
**Inhalation:** Prolonged or repeated inhalation may cause lung damage and/or central nervous system disturbances.

### Signs and Symptoms of Overexposure:

**Eyes:** Eyes may become irritated, red or itchy.  
**Skin:** Skin may become itchy, red or irritated.  
**Ingestion:** Ingestion of this material can cause mouth, throat, esophageal, and gastrointestinal tract irritation.  
**Acute Toxicity:** Symptoms of overexposure include: tearing of eyes, burning sensation in the throat, cough, chest discomfort or skin burning.  
**Chronic Effects:** Corrosive and may cause severe and permanent damage to mouth, throat and stomach.

**Sensitization:** May cause allergic skin reaction.

**Health Hazards:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

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## Section 4. FIRST AID MEASURES

- Eyes:** Immediately flush eyes with plenty of water. Get medical attention, if irritation persists.
- Skin:** Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
- 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.
- Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

## Section 5. FIRE-FIGHTING MEASURES

- Hardener - Flash Point & Method:** > 212 °F
- Resin - Flash Point & Method:** (168 &deg;F) Setaflash CC Tester-ASTM D 3828
- Extinguishing Media:** Use foam, dry chemical, carbon dioxide, or fine water spray when fighting fires involving this material.
- Hazardous Combustion Products:** Oxides of carbon, aldehydes, amines, aniline, acids and other organic substances may be formed during combustion. The chemical nature and quantity of decomposition by-products will vary widely depending on the conditions of combustion.
- Fire Fighting Procedures:** Firefighters / rescue personnel should wear positive pressure self-contained breathing apparatus and full protective equipment. Cool exposed containers with water to prevent pressure buildup. If large quantities are involved, evacuate area and fight fire from a safe distance.

## Section 6. ACCIDENTAL RELEASE MEASURES

- Small Spill:** Activate available exhaust ventilation equipment in the immediate spill area. Wipe up or absorb spilled material with paper towels or other absorbent material. Wash area with soapy water to remove residue. Collect absorbed material and water rinses in appropriate containers. Dispose of in accordance with Federal, State and local regulations.
- Large Spill:** Dike area to contain spill. Take precautions as necessary to prevent contamination of ground and surface waters. Recover spilled material on adsorbent, such as sawdust or vermiculite, and sweep into closed containers for disposal. After all visible traces, including ignitable vapors, have been removed thoroughly wet vacuum the area. Do not flush to sewer. If area of spill is porous, remove as much contaminated earth and gravel, etc. as necessary and place in closed containers for disposal.
- Release Notes:** Spill response operations must be conducted in accordance with the provisions of OSHA 29 CFR 1910.120. Review the entire MSDS before proceeding with spill response.

## Section 7. HANDLING AND STORAGE

- General Procedures:** Minimize contact with unprotected skin and eyes and ensure that adequate ventilation is provided in the work area. Store material in a cool, dry place.
- Handling:** Keep container closed when not in use, avoid contact with eyes and prolonged or repeated contact with skin. Maintain good housekeeping practices.
- Storage:** Keep container closed when not in use, store in a cool dry place away from heat and flames. Keep out of the reach of children and do not re-use this container.

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## Section 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

### Exposure Guidelines

#### OSHA Hazardous Components (29 CFR1910.1200)

Hardener - Chemical Name	Exposure Limits OSHA PEL ppm	Exposure Limits OSHA PEL mg/m3	Exposure Limits ACGIH TLV ppm	Exposure Limits ACGIH TLV mg/m3
2,2'-iminodiethylamine TWA	Not established	Not established	Not established	4.2

Resin - Chemical Name	Exposure Limits OSHA PEL ppm	Exposure Limits OSHA PEL mg/m3	Exposure Limits ACGIH TLV ppm	Exposure Limits ACGIH TLV mg/m3
Bisphenol A/epichlorohydrin Resin TWA	Not established	Not established	Not established	Not established
Bisphenol A/epichlorohydrin Resin STEL	Not established	Not established	Not established	Not established
N-butyl Glycidyl Ether STEL	50		25	

### Personal Protective Equipment

- Eyes and Face:** Wear safety glasses with side shields (or goggles) and a face shield.
- Skin:** Wear impervious gloves and appropriate protective clothing or equipment to prevent prolonged or repeated contact with skin. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using restroom facilities. Promptly remove contaminated clothing and launder thoroughly before reuse.
- Respiratory:** Provide effective mechanical exhaust ventilation to draw vapors, mists or fumes generated during processing away from the worker and prevent routine inhalation, especially during elevated temperature processing. Ventilation must be sufficient to maintain airborne levels of Section 2 chemicals below their PEL/TLV values. Use an appropriate, properly fitted respirator if exposures exceed PEL/TLV values. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.
- Work Hygienic Practices:** Maintain good housekeeping practices, minimize contact with skin and eyes, and provide appropriate ventilation.
- Other Use Precautions:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

## Section 9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical State:** Liquid
- Odor:** Amine-like
- Appearance:** Clear
- Color:** Amber
- Hardener Boiling Point:** >374°F
- Hardener Flashpoint:** >212°F
- Resin Flashpoint:** 168°F
- Hardener Specific Gravity:** 1.090
- Resin Specific Gravity:** 1.130 gm/cm<sup>3</sup>

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## Section 10. STABILITY AND REACTIVITY

<b>Stable:</b>	Yes
<b>Hazardous Polymerization:</b>	No
<b>Stability:</b>	Stable under normal handling and storage conditions.
<b>Polymerization:</b>	It will not vigorously polymerize, decompose, condense or not become self-reactive under conditions of shocks, pressure, or temperature. Uncontrolled mixing with resins may cause hazardous polymerization.
<b>Conditions to Avoid:</b>	Contact with acidic, basic, or oxidizing materials. Avoid storage in open containers, exposure to open flame or uncontrolled heat, uncontrolled mixing or exposure to incompatible substances.
<b>Hazardous Decomposition Products:</b>	Oxides of carbon, aldehydes, amines, aniline, acids and other organic substances may be formed during combustion. The chemical nature and quantity of decomposition byproducts will vary widely depending on the conditions of combustion.

## Section 11. TOXICOLOGICAL INFORMATION

### Acute

Hardener - Chemical Name	ORAL LD50(rat)	DERMAL LD50(rabbit)
2,2'- iminodiethylamine	1080 mg/kg	1090 mg/kg

### Acute

Resin - Chemical Name	ORAL LD50 (rat)	DERMAL LD50 (rabbit)	INHALATION LC50 (rat)
Bisphenol A/epichlorohydrin Resin	> 2000 mg/kg	> 2000 mg/kg	-
N-butyl Glycidyl Ether	2260 mg/kg	788 mg/kg	1030 ppm

**Eye Effects:** Contains materials irritating to the eyes. Symptoms may include blurred vision, burning sensation and tearing.

**Skin Effects:** Contains materials that cause moderate skin irritation. Prolonged or repeated exposure to the liquid may exert a defatting or drying action on the skin, possibly resulting in dermatitis. This product may cause skin sensitization / allergic skin reactions that may be severe in certain individuals. Symptoms include rash, itching, hives, swelling.

## Section 12. ECOLOGICAL INFORMATION

**Environmental Data:** Do not flush to sewer.

## Section 13. DISPOSAL CONSIDERATIONS

**Disposal Method:** Dispose of container and unused contents in accordance with federal, state, and local requirements.

**Empty Container:** Do not re-use this container. Keep away from heat, flames or sparks. Do not cut, puncture or weld on or near this container.

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## Section 14. TRANSPORT INFORMATION

### DOT (Department of Transportation):

**Proper Shipping Name:** Amines, Liquid, Corrosive, N.O.S.  
**Technical Name:** Diethylenetriamine  
**Primary Hazard Class/Division:** 8  
**UN/NA Number:** 2735  
**Packaging Group:** III

### Road and Rail (ADR/RID):

**Proper Shipping Name:** Amines, Liquid, Corrosive, N.O.S.  
**Primary Hazard Class/Division:** 8  
**UN/NA Number:** 2735  
**Packaging Group:** III

### Air (ICAO/IATA):

**Shipping Name:** Amines, Liquid, Corrosive, N.O.S.  
**Technical Name:** Diethylenetriamine  
**Primary Hazard Class/Division:** 8  
**UN/NA Number:** 2735  
**Packaging Group:** III

### Vessel (IMO/IMDG):

**Shipping Name:** Amines, Liquid, Corrosive, N.O.S.  
**Technical Name:** Diethylenetriamine  
**Primary Hazard Class/Division:** 8  
**UN/NA Number:** 2735  
**Packaging Group:** III

## Section 15. REGULATORY INFORMATION

### United States SARA Title III (Superfund Amendments and Reauthorization Act):

**Acute:** Yes

**Chronic:** Yes

**California Proposition 65:** Phenyl Glycidyl Ether (CAS# 122-60-1) is present at <6 ppm. This material is known to the State of California to cause cancer.

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## Section 16. OTHER INFORMATION

### Relevant R-Phrases:

- R21/22:** Harmful in contact with skin and if swallowed.
- R34:** Causes burns.
- R36/38:** Irritating to eyes and skin.
- R43:** May cause sensitization by skin contact.
- R51/53:** Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### REACH Compliance

This product is compliant with REACH - Registration, Evaluation, Authorization and Restriction of Chemical substances. For more information visit: <http://www.circuitmedic.com/general/reach.shtml>

### RoHS Compliance

This product is compliant with RoHS Directive 2011/65/EU of the European Parliament and the Council from 08/06/2011 on restriction of the use of certain hazardous substances in electrical and electronic appliances. For more information visit: <http://www.circuitmedic.com/general/rohs.shtml>

To the best of our knowledge, the information contained herein is accurate. However, neither Circuit Technology Center, Inc., nor any of its subsidiaries assumes 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 used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

# Material Safety Data Sheet

# Circuit Frame/Bonding Film

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 Phone: 978-373-1600 | Website: <http://www.circuitmedic.com>

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## Section 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Circuit Frame with Bonding Film  
**Product Number:** Various Product Numbers  
**Distributor:** CircuitMedic  
 22 Parkridge Road, Haverhill, MA 01835 USA  
 PHONE: 978-373-1600, FAX: 978-372-5700

**Emergency Response:** AAPC: USA - 800-222-1222

## Section 2. COMPOSITION, INFORMATION OR INGREDIENTS

Chemical Name	CAS	Wt. %	OSHA PEL	ACGIH TLV
Phenol	108-95-2	<.1	5ppm	5ppm
Dimethyl Acetamide	127-19-5	<.1	10ppm	10ppm

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200): Exposure Limits 8 Hours TWA (PPM)  
 Constituents not listed above are considered non-hazardous as defined in OSHA's Hazard Communication Standard 29 CFR 1910.1200.

## Section 3. HAZARD IDENTIFICATION

**Emergency Overview:**

**Potential Health Effects:**

**Inhalation:** Headache and nausea possible following excessive overexposure.

**Eyes:** Irritation.

**Skin:** Phenol component may be absorbed through skin upon prolonged exposure causing irritation.

**Ingestion:** Not a likely route of exposure.

## Section 4. FIRST AID MEASURES

**Inhalation:** Remove to fresh air - seek medical attention.

**Eye Contact:** Flush with water for 15 minutes - seek medical attention.

**Skin Contact:** Wash with soap and water. Seek medical attention if irritation or rash is present.

**Ingestion:** Not a likely route of exposure.

## Section 5. FIRE-FIGHTING MEASURES

**Flash Point & Method:** N/A

**Flammable Limits:** LEL: N/A UEL: N/A

**Autoignition Temperature:** N/A

**General Hazard:** None expected within normal processing.

**Fire Fighting Instructions:** Firefighters should wear self-contained breathing apparatus.

**Hazardous Combustion Prod.** N/A

**Flammable Properties:** N/A

**Extinguishing Media:** Water Fog, Foam, Dry Chemical and CO2.

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## Section 6. ACCIDENTAL RELEASE MEASURES

Land Spill: N/A

N/A N/A

## Section 7. HANDLING AND STORAGE

Storage Temperature: 40°F - 70°F.

Storage Pressure: Atmospheric

General: Store between 40°F - 70°F; keep dry.

## Section 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls: Provide appropriate local exhaust as needed if large quantities are heated.

Personal Protection:

Respirator: N/A

Hand Protection: N/A

Eye Protection: The following eye protection(s) are recommended: Safety glasses with side shields

Other Recommended: N/A

## Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Density: Varies with construction

pH: N/A

Boiling Point: N/A

Freezing Point: N/A

Vapor Density (Air = 1): N/A

% Volatile By Weight: N/A

% Solids: N/A

Evaporation Rate (Butyl Acetate = 1): N/A

Solubility in Water: Negligible

Viscosity: N/A

Molecular Weight: N/A

Physical State: Solid

Molecular Weight: N/A

Appearance: Yellow Clear Sheet

Vapor Pressure(mmHg): N/A



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# Circuit Frame/Bonding Film

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## Section 10. STABILITY AND REACTIVITY

**General:** Stable

**Incompatible materials and Conditions to Avoid:** Temperatures above 400° (752°) without adequate ventilation.

**Hazardous Decomposition or Byproducts:** CO, CO2 and nitrogen oxides

**Hazardous Polymerization:** Will not occur.

## Section 11. TOXICOLOGICAL INFORMATION

**Results of Component Toxicity Test Performed:** Information not available.

**Human Experience:** Information not available.

## Section 12. ECOLOGICAL INFORMATION

**Further Information:** N/A

## Section 13. DISPOSAL CONSIDERATIONS

**RCRA 40 CFR 261 Classification:** Federal, State, and Local laws governing disposal of materials can differ. Ensure proper disposal compliance with proper authorities before disposal.

## Section 14. TRANSPORT INFORMATION

**DOT, IATA, ICAO, and IMO Description:**

**Basic Description:** N/A

**Proper Shipping Name:** N/A

**Hazard Class:** N/A

**Packaging Group:** N/A

**UN Number:** N/A

**Label Requirements:** N/A

**Max. Shippable Qty.:** N/A

**Packaging:** N/A

**Reportable Quantity (RQ):** N/A

**1996 NAERG Guide#:** N/A

**Limitations:** N/A

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## Section 15. REGULATORY INFORMATION

### United States Federal Regulations:

MSDS complies with OSHA's Hazard Communication Rule, 29 CFR 1910.1200.

CERCLA/SUPERFUND, 40 CFR 117, 302: None of the chemicals are Superfund hazards

SARA SUPERFUND AND REAUTHORIZATION ACT OF 1986 TITLE III Sections 302, 311, 312 and 313: Section 302 Extremely hazardous substances (40 CFR 355): None of the chemicals are Section 302 hazards.

Section 311/312 - Material Safety Data Sheet Requirements (40 CFR 370): By our hazard evaluation, this product is non-hazardous.

TOXIC SUBSTANCE CONTROL ACT (TSCA): All substances are TSCA Listed.

Section 311/312 - Material Safety Data Sheet Requirements (40 CFR 370): By our hazard evaluation, this product is non-hazardous.

TOXIC SUBSTANCE CONTROL ACT (TSCA): All substances are TSCA Listed.

### International Regulations:

Canada Whims: NA

Europe EINECS Numbers: NA

Canadian Substance Inventory: One or more of the components of this product do not appear in the Canadian Substance Inventory.

## Section 16. OTHER INFORMATION

### Label Information:

European risk and Safety Phrases: N/A

European Symbols Needed: N/A

Canadian WHIMS Symbols: N/A

NFPA Hazard Rating: (1) Flammability (1) Health (0) Reactivity

Abbreviations Used in this Document: NE - Not Established, NA - Not Applicable/Not Available, NIF - No Information Found

References: Code of Federal Regulations (CFR)  
The Sigma-Aldrich Library of Regulatory and Safety Data  
Chemical Guide and OSHA Hazard Communication Standard  
Various Federal, State & Local Regulations

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