

SECTION 1: CHEMICAL PRODUCT AND COMPANY INFORMATION**Company Address:**8125 Cobb Center Drive
Kennesaw, GA 30152Product Information: 800-TECH-401
Customer Service: 800-645-5244Emergency: (Chemtec) 800-424-9300
Revision Date: November 11, 2008**Product Identification****CIRCUITWORKS® 60 MINUTE CONDUCTIVE EPOXY - Part B (Hardener)****Product Code: CW2460****SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	UN number	IDLH	Classification			CAS#	Wt. % Range
			H	F	R		
Silver (Metallic)	Not regulated	10 mg/m ³	0	0	0	7440-22-4	60.0-90.0
Triethylenetetramine	UN2259	-	3	1	0	112-24-3	5.0-15.0

SECTION 3: HAZARDOUS IDENTIFICATION

OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency Overview: DANGER! CAUSES EYE AND SKIN BURNS. HARMFUL IF ABSORBED THROUGH SKIN. CAUSES RESPIRATORY TRACT IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. Harmful if absorbed through the skin. Corrosive to eyes and skin. Causes burns. Moderately irritating to the respiratory system. May cause sensitization by skin contact. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling. Since the product is used in very small quantity, the risks of exposure to the mentioned hazards are minimal. Therefore, please consider the statements in this MSDS accordingly.

Potential Health Effects

Eyes: Liquid and vapors of this product may cause chemical burns in the eye. Damage is irreversible.

Skin: Corrosive to the skin. Causes burns. Toxic in contact with skin. May cause sensitization by skin contact.

Ingestion: Harmful if swallowed. May cause chemical burn in gastrointestinal tract and may be potentially toxic. Silver ingestion may result in generalized argyria.

Inhalation: Harmful if inhaled. High concentrations in immediate area can cause respiratory irritation if inhaled. Sensitizer - may cause allergic respiratory reaction.

Pre-Existing Medical Conditions Aggravated by Exposure: Heart, lung, eye, skin. Pre-existing skin disorders may be aggravated by over-exposure to this product.

Over-exposure signs/symptoms

Inhalation: Adverse symptoms may include respiratory tract irritation and coughing.

Ingestion: Adverse symptoms may include stomach pains.

Skin: Adverse symptoms may include pain or irritation and redness; blistering may occur **Eyes:** Adverse symptoms may include pain, watering, redness

SECTION 4: FIRST AID MEASURES

Eyes: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 20 minutes. Get medical attention immediately. Have eyes examined by a Physician.

Skin: In case of contact, immediately flush skin with plenty of water for at least 20 minutes. Get medical attention immediately.

Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Inhalation: In case of exposure to high concentrations of vapor or mist, remove to fresh air. If breathing is difficult, give oxygen and call a Physician. If breathing has stopped, apply artificial respiration and call a Physician.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point: > 200°F (>93C) (Setaflash) **LEL/UEL:** NA (% by volume in air)

Extinguishing Media: Use an extinguishing agent suitable for the surrounding fire..

Fire Fighting Instructions: Remove all ignition sources. Closed containers may rupture due to build-up of pressure when exposed to extreme heat. As in any fire, wear self-contained breathing apparatus (pressure demand, OSHA/NIOSH approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Large Spills: Remove all sources of ignition. Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal information Do not flush to sewer. Prevent material from entering storm sewers, ditches that lead to waterways and ground.

Small Spills: Absorb spill with absorbent material, then place in a chemical waste container for proper disposal.

SECTION 7: HANDLING AND STORAGE

Handling: Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate.

Storage: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials and food and drink. Keep container tightly closed and sealed until ready for use. Do not store in unlabeled containers.

KEEP OUT OF REACH OF CHILDREN.

SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

Exposure Guidelines:

CHEMICAL NAME	United States Exposure Limits	Canada Exposure Limits	Mexico Exposure Limits
Silver	NIOSH REL (United States, 12/2001). TWA: 0.01 mg/m ³ , (as Ag) 10 hour(s). OSHA PEL (United States, 11/2006). TWA: 0.01 mg/m ³ , (as Ag) 8 hour(s). ACGIH TLV (United States, 1/2008). TWA: 0.1 mg/m ³ 8 hour(s). Form: Metallic form	CA Alberta Provincial (Canada, 10/2006). 8 hrs OEL: 0.1 mg/m ³ 8 hour(s). CA British Columbia Provincial (Canada, 7/2007). TWA: 0.01 mg/m ³ , (as Ag) 8 hour(s). STEL: 0.03 mg/m ³ , (as Ag) 15 minute(s). CA Ontario Provincial (Canada, 3/2007). TWAEV: 0.1 mg/m ³ 8 hour(s). CA Quebec Provincial (Canada, 12/2006). TWAEV: 0.1 mg/m ³ 8 hour(s).	NOM-010-STPS (Mexico, 9/2000). LMPE-PPT: 0.1 mg/m ³ 8 hour(s).
Triethylenetetramine	AIHA WEEL (United States, 1/2008). Absorbed through skin. TWA: 1 ppm 8 hour(s).	CA Ontario Provincial (Canada, 3/2007). Absorbed through skin. TWAEV: 0.5 ppm 8 hour(s). TWAEV: 3 mg/m ³ 8 hour(s).	

Work/Hygienic Practices: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location. Wear safety glasses with side shields (or goggles) and rubber or other chemically resistant gloves when handling this material. Wear a lab coat where required.

NFPA and HMIS Codes:

	NFPA	HMIS
Health	3	3
Flammability	0	0
Reactivity	0	0
Personal Protection	-	B

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Silver/gray Paste

Odor: Amine

pH: NA

Vapor Pressure: <1.0 mmHg @ 20°C

Percent Volatile: < 0.5%

Vapor Density:>1 (Air=1)

Solubility in Water: Very slightly soluble.

Specific Gravity: 4.1

Evaporation Rate: <1

(Butyl acetate=1)

Boiling Range: >250°F (>121C)

SECTION 10: STABILITY AND REACTIVITY

Stability: This product is stable. Conditions to Avoid: Excessive Heat.

Incompatibility: Avoid epoxy resins and isocyanates, strong acids, mineral and organic acids, strong bases, caustics and alkali contamination.

Products of Decomposition: carbon dioxide, carbon monoxide, halogenated compounds, metal oxide/oxides.

Hazardous Polymerization: Will not occur.

Conditions to avoid: Contamination with strong acids, bases, epoxy resins or isocyanates can cause polymerization.

SECTION 11: TOXICOLOGICAL INFORMATION

Ingredients	LD50	LD50	LC50 (ppm)
	(rat) Oral	(rat) Dermal	(rat) Inhalation
Silver (metallic)	NA	NA	NA
Triethylenetetramine	2500 mg/kg	805 mg/kg (Rabbit)	NA

Inhalation: Moderately irritating to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Eyes: Corrosive to eyes. Causes burns.

Ingestion: May cause burns to mouth, throat and stomach.

Skin: Corrosive to the skin. Causes burns. Toxic in contact with skin. May cause sensitization by skin contact.

Cancer Information: No ingredients listed as human carcinogens by NTP or IARC

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

SECTION 12: ECOLOGICAL INFORMATION

Environmental Impact Information

Avoid runoff into storm sewers and ditches which lead to waterways. Water runoff can cause environmental damage.

Aquatic Ecotoxicity

Ingredient name	Species	Exposure	Result
Silver	Daphnia	48 hours	Acute EC50 0.24 ug/L
	Daphnia	48 hours	Acute LC50 14 ug/L
	Fish	96 hours	Acute LC50 0.0062 mg/L
	Crustaceans	48 hours	Acute LC50 15 to 18 ug/L
Triethylenetetramine	Daphnia - Water flea - Daphnia magna	48 hours	Acute LC50 33900 ug/L Fresh water

REPORTING

US regulations require reporting spills of this material that could reach any surface waters. The toll free number for the US Coast Guard National Response Center is: **1-800-424-8802**

SECTION 13: DISPOSAL CONSIDERATIONS

This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14: TRANSPORTATION INFORMATION

Air and Ground Shipments:

Adhesives, sealants
Not Regulated

SECTION 15: REGULATORY INFORMATION

SECTION 313 SUPPLIER NOTIFICATION

This product contains no toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372).

This information should be included on all MSDSs copied and distributed for this material.

HCS Classification : Toxic material, Corrosive material, Sensitizing material

U.S. Federal regulations: United States inventory (TSCA 8b): All components are listed or exempted.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Silver; Triethylenetetramine
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Silver: Immediate (acute) health hazard;
Triethylenetetramine: Immediate (acute) health hazard, Delayed (chronic) health hazard
Clean Water Act (CWA) 307: Silver
Clean Water Act (CWA) 311: No products were found.
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

SARA 313

	Product name	CAS number	Concentration
Form R – Reporting requirements	Silver	7440-22-4 60 - 100	
Supplier notification	Silver	7440-22-4 60 - 100	

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations:

Connecticut Carcinogen Reporting: None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: The following components are listed: Silver; Triethylenetetramine
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: The following components are listed: Silver; Triethylenetetramine
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
New York Acutely Hazardous Substances: The following components are listed: Silver
New York Toxic Chemical Release Reporting: None of the components are listed.
Pennsylvania RTK Hazardous Substances: The following components are listed: Silver; Triethylenetetramine
Rhode Island Hazardous Substances: None of the components are listed.

California Prop. 65:

WHMIS:

No products were found.
Class D-1B: Material causing immediate and serious toxic effects (Toxic).
Class D-2B: Material causing other toxic effects (Toxic). Class E: Corrosive material

Canadian lists:

CEPA Toxic substances: None of the components are listed.
Canadian ARET: None of the components are listed.
Canadian NPRI: The following components are listed: Silver
Alberta Designated Substances: None of the components are listed.
Ontario Designated Substances: None of the components are listed.
Quebec Designated Substances: None of the components are listed.

Canada inventory:

All components are listed or exempted.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

International lists:

This product, (and its ingredients) is (are) listed on national inventories, or is (are) exempted from being listed, in Australia (AICS), in Europe (EINECS/ELINCS), in Korea (TCCL), in Japan (METI), in the Philippines (RA6969).



SECTION 16: OTHER INFORMATION

Normal ventilation for standard manufacturing practices is usually adequate. Local exhaust should be used when large amounts are released. To the best of our knowledge, the information contained herein is accurate. However, all materials may present unknown hazards and should be used with caution. In particular, improper use of our products and their inappropriate combination with other products and substances may produce harmful results which cannot be anticipated. Final determination of the suitability of any material is the sole responsibility of the user. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that may exist.