

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: (Chemtrek) 800-424-9300
Revision Date: August 30, 2010**Product Identification****CIRCUITWORKS® CONDUCTIVE EPOXY - Part A (Adhesive)****Product Code: CW2400, CW2400J, CW2400BLK (Part A)****SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS No.	Wt. % Range
Silver (Metallic)	7440-22-4	60.0-90.0
Epoxy Resin	25068-38-6	10.0-25.0
Modified Epoxy Ester	68475-94-5	1.0-3.0

SECTION 3: HAZARDOUS IDENTIFICATION**Emergency Overview:** Silver/gray paste with mild odor. This product is nonflammable. Liquid will irritate eyes and skin. Breathing high concentrations may produce headaches and dizziness.**Potential Health Effects:****Eyes:** Liquid and vapors of this product may cause eye injury which may persist for several days.**Skin:** Contact may cause skin injury (reddening and swelling). Sensitizer - may cause allergic skin reaction.**Ingestion:** Harmful if swallowed. Silver ingestion may result in generalized argyria.**Inhalation:** No specific information available. Heating can generate vapors that could cause headaches, nausea, dizziness and respiratory irritation if inhaled.**Pre-Existing Medical Conditions Aggravated by Exposure:** Heart, lung, eye, skin**SECTION 4: FIRST AID MEASURES****Eyes:** Immediately flush with large amounts of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined by a Physician.**Skin:** Remove contaminated clothing and wash skin with soap and water. Get medical attention if irritation develops persists. Wash clothes separately before reuse.**Ingestion:** If appreciable quantities are swallowed, seek medical attention.**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 carbon dioxide or dry chemicals for small fires, aqueous foam or water for large fires involving this material.**Fire Fighting Instructions:** Remove all ignition sources. 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 (sparks, open flames, etc.). Wear self-contained breathing apparatus and appropriate personal protective equipment. Ventilate area and contain spill by diking and/or absorbing with inert material. Collect spill by scooping up liquids and absorbent material and place in a chemical waste container for proper disposal. 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**

Avoid prolonged or repeated contact with skin, eyes or clothing. Wash hands before eating. Use with adequate ventilation. Avoid breathing product vapor. Do not reuse this container. Store in a cool dry place, away from heat, sparks or flames.

KEEP OUT OF REACH OF CHILDREN.**SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION****Exposure Guidelines:**

CHEMICAL NAME	ACGIH TLV	OSHA PEL	ACGIH STEL
Silver	0.1 mg/m3	0.01mg/m3	NA
Epoxy Resin	NA	NA	NA
Modified Epoxy Ester	NA	NA	NA

Work/Hygienic Practices: 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. Wear safety glasses with side shields or goggles and rubber or other chemically resistant gloves when handling this material.**NFPA and HMIS Codes:**

	NFPA	HMIS
Health	3	3
Flammability	1	1
Reactivity	1	1
Personal Protection	-	B

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIESPhysical State: Silver/gray PasteOdor: MildpH: NAVapor Pressure: <0.10 mmHg @ 20°CVapor Density: NAPercent Volatile: < 0.5%Solubility in Water: <10%Specific Gravity: 4.0Evaporation Rate: <1

(Butyl acetate=1)

Boiling Range: >200°F (>93C)**SECTION 10: STABILITY AND REACTIVITY**Stability: Stable under normal conditions.Conditions to Avoid: Storage above 120°F, exposure to light, loss of dissolved air, loss of polymerization, inhibitor, contamination with incompatible materials.Incompatibility: Avoid strong oxidizing agents, copper, copper alloys, carbon steel, iron and rust. Avoid strong acids and bases. Also avoid caustics, amines, alkalis and mercaptans.Products of Decomposition: Carbon monoxide, carbon dioxide.Hazardous Polymerization: May occur.Conditions to avoid: Polymerization initiators including peroxides, strong oxidizing agents, copper, copper alloys, carbon steel, iron, rust or strong bases. Contamination with strong acids, amines or mercaptans can cause polymerization.**SECTION 11: TOXICOLOGICAL INFORMATION**

Ingredients	LD50 (rat) Oral	LD50 (rbt) Dermal	LC50 (ppm) (rat) Inhalation
Silver (metallic)	NA	NA	NA
Epoxy Resin	>10,000 mg/kg	>20,000 mg/kg	NA
Modified Epoxy Ester	NA	NA	NA

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

Reproductive effects: none

Teratogenic effects: none

Mutagenic effects: none

SECTION 12: ECOLOGICAL INFORMATION**Environmental Impact Information**

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

REPORTINGUS 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**

Dispose of in accordance with all federal, state and local regulations. Water runoff can cause environmental damage.

SECTION 14: TRANSPORTATION INFORMATIONAir and Ground Shipments:

Adhesives, sealants

Not Regulated

SECTION 15: REGULATORY INFORMATION**SECTION 313 SUPPLIER NOTIFICATION**

This product contains the following chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372).

Silver

CAS # 7440-22-4

60.0-90.0%

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

TOXIC SUBSTANCES CONTROL ACT (TSCA)

All ingredients of this product are listed on the TSCA Inventory.

WHMIS: Class D2B

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.

SECTION 16: OTHER INFORMATION

Normal ventilation for standard manufacturing practices is usually adequate. Local exhaust should be used when large amounts are released.

NOTE: To obtain maximum shelf life, product must be stored below 77F / 25C.

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.

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Kennesaw, GA 30152Product Information: 800-TECH-401
Customer Service: 800-645-5244Emergency: (Chemtrek) 800-424-9300
Revision Date: October 1, 2010**Product Identification****CIRCUITWORKS® CONDUCTIVE EPOXY - Part B (Hardener)****Product Code:** CW2400, CW2400J, CW2400BLK (Part B)**SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS No.	Wt. % Range
Silver (Metallic)	7440-22-4	60.0-90.0
Modified Aliphatic Amine	140-31-8	10.0-25.0

SECTION 3: HAZARDOUS IDENTIFICATION**Emergency Overview:** Silver/gray paste with amine odor. This product is nonflammable. Liquid may cause chemical burns in eye.**Potential Health Effects:****Eyes:** This product may cause chemical burns in the eye. Damage is irreversible.**Skin:** Sensitizer - may cause allergic skin reaction.**Ingestion:** Harmful if swallowed. May cause chemical irritation in gastrointestinal tract and may be potentially toxic. Silver ingestion may result in generalized argyria.**Inhalation:** May cause respiratory irritation if inhaled over a long period of time. Sensitizer - may cause allergic respiratory reaction.**Pre-Existing Medical Conditions Aggravated by Exposure:** Heart, lung, eye, skin**SECTION 4: FIRST AID MEASURES****Eyes:** Immediately flush with large amounts of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined by a Physician.**Skin:** Remove contaminated clothing and wash skin with soap and water. Get medical attention if irritation persists. Wash clothes separately before reuse.**Ingestion:** If swallowed, seek medical attention. Neutralize with milk or dilute with water.**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 (>93°C) (Setaflash) **LEL/UEL:** NA (% by volume in air)**Extinguishing Media:** Use carbon dioxide or dry chemicals for small fires, aqueous foam or water for large fires.**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 (sparks, open flames, etc.). Wear self-contained breathing apparatus and appropriate personal protective equipment. Ventilate area and contain and absorb spill with inert material. Collect spill by scooping up liquids and absorbent material and place in a chemical waste container for proper disposal. 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**

Avoid prolonged or repeated contact with skin, eyes or clothing. Wash hands before eating. Use with adequate ventilation. Avoid breathing product vapor. Do not reuse this container. Store in a cool dry place, away from heat, sparks or flames.

KEEP OUT OF REACH OF CHILDREN.**SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION****Exposure Guidelines:**

CHEMICAL NAME	ACGIH TLV	OSHA PEL	ACGIH STEL
Silver	0.1 mg/m3	0.01mg/m3	NA
Modified Aliphatic Amine	NA	NA	NA

Work/Hygienic Practices: 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. Wear safety glasses with side shields or goggles and rubber or other chemically resistant gloves when handling this material.**NFPA and HMIS Codes:**

	NFPA	HMIS
Health	1	1
Flammability	1	1
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: <10%**Specific Gravity:** 4.1**Evaporation Rate:** <1

(Butyl acetate=1)

Boiling Range: >400°F (>204C)

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 monoxide, carbon dioxide and oxides of nitrogen.

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 (rat) Oral	LD50 (rft) Dermal	LC50 (ppm) (rat) Inhalation
Silver (metallic)	NA	NA	NA
Modified Aliphatic Amine	2,140 mg/kg	880 µL/kg	NA

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

Reproductive effects: none

Teratogenic effects: none

Mutagenic effects: none

SECTION 12: ECOLOGICAL INFORMATION**Environmental Impact Information**

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

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

Dispose of in accordance with all federal, state and local regulations. Water runoff can cause environmental damage.

SECTION 14: TRANSPORTATION INFORMATION

Air and Ground Shipments:

Adhesives, sealants

Not Regulated

SECTION 15: REGULATORY INFORMATION**SECTION 313 SUPPLIER NOTIFICATION**

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