

# MATERIAL SAFETY DATA SHEET

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## SECTION 1 PRODUCT IDENTIFICATION

Product Name: **CHO-BOND 592, PART A**  
General Chemical Description: Conductive Epoxy

## SECTION 2 COMPOSITION INFORMATION

<u>Components &amp; CAS. No.</u>	<u>Weight %</u>	<u>Exposure Limits</u>
Silver 7440-22-4	60 - 70	OSHA PEL TWA: 0.01 mg/m <sup>3</sup> ; ACGIH TLV TWA: 0.1 mg/m <sup>3</sup> .
Epoxy Resin 25068-38-6	20 - 30	Not Established
o-Cresyl glycidyl ether 2210-79-9	5 - 10	Not Established
Toluene 108-88-3	2 - 5	OSHA PEL TWA: 200 ppm, STEL: 500 ppm (10 min. peak/8 hour), CEILING: 300 ppm; ACGIH TLV TWA: 50 ppm (Skin)

## SECTION 3 HAZARDS IDENTIFICATION

Emergency Overview: Silver liquid with a light aromatic odor. Flammable liquid. Keep away from heat, sparks and other sources of ignition. May cause severe irritation of eyes and skin as well as skin sensitization. May cause irritation of mucous membranes and respiratory tract. Chronic health hazards. Refer to other sections of the MSDS for more detailed information.

Routes of Entry: Inhalation, skin and eye contact.

### Acute Effects:

Eye: Contact may cause severe eye irritation.

Skin: Contact may cause severe skin irritation. Prolonged or repeated skin contact may cause defatting or drying of the skin which may lead to irritation and /or dermatitis (rash). Contact may cause sensitization, an allergic skin reaction, with symptoms including reddening, swelling, rash, scaling or blistering. Persons sensitized may exhibit these symptoms on subsequent contact with very small amounts of material or as a result of exposure to vapor. May be absorbed through the skin.

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**Inhalation:** Inhalation of high concentrations of toluene may cause respiratory irritation and central nervous system effects progressing from headache, dizziness, staggering gait and confusion to unconsciousness, coma, and death. The severity of these effects will be dependent on the vapor concentration and length of exposure. Inhalation of extremely high concentrations of toluene may cause heart irregularities and cardiac sensitization.

**Ingestion:** Harmful if swallowed.

**Chronic Effects:** Prolonged or repeated contact with silver may result in argyria, a blue-gray discoloration of the eyes, skin or other body tissue. Once deposited, there is no known means by which the silver can be eliminated; the pigmentation is permanent.

o-Cresyl glycidyl ether has been reported to be mutagenic in in-vitro tests.

Toxicology studies with laboratory animals and occupational evaluations with humans have found limited evidence of birth defects, low birth weight and delayed growth in offspring resulting from repeated exposures to toluene during pregnancy.

Subchronic and chronic inhalations studies with toluene produced kidney and liver damage and hearing loss.

**Special Condition Effects:** Not Applicable.

**Aggravated Medical Conditions:** No data is available for this product mixture.

### **SECTION 4 FIRST AID MEASURES:**

Handle in accordance with good industrial hygiene and safety practices by avoiding unnecessary exposure and by removing material from the eyes, skin and clothing.

**Eye:** Immediately but gently flush the eyes with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention.

**Skin:** Remove contaminated clothing. Thoroughly wash skin with soap and water for at least 15 minutes. Get immediate medical attention if irritation persists or if symptoms of exposure develop (see SECTION 3 - HAZARDS IDENTIFICATION).

**Inhalation:** Remove to fresh air. Get immediate medical attention if irritation persists, breathing becomes difficult or if symptoms (as described in SECTION 3) develop.

**Ingestion:** Get medical attention. DO NOT induce vomiting, potential aspiration hazard. Never give anything by mouth to an unconscious, drowsy or convulsing person.

### **SECTION 5 FIRE FIGHTING MEASURES**

**Flash Point:** Not Established. 45°F TCC (based on toluene)

**Autoignition Temp.:** Not Established.

**Flammable Limits:** Not Established. lel: 1.0 uel: 7.0% vol. in air (for toluene)

**Extinguishing Media:** Carbon dioxide, water, water foam, dry chemical.

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**Fire Fighting Procedures:** Use self-contained breathing apparatus and protective clothing. If large quantities of material are involved, evacuate area and fight fire from a safe distance.

**Unusual Fire Hazards:** Decomposition and combustion products may be toxic. Flammable liquid can form flammable/explosive mixture in air at or above the flash point temperature. This product contains solvent with vapors that are heavier than air and can travel along the ground to an ignition source, resulting in a flash back to the source of the vapors.

### **SECTION 6 ACCIDENTAL RELEASE MEASURES**

Spill response operations must be conducted in accordance with the provisions of 29 CFR 1910.120. Observe all recommendations identified in Sections 5 and 8.

**Procedures:** Release can create fire/explosion hazard. Determine whether to evacuate personnel or isolate the spill area. Limit access to spill area. Eliminate all sources of ignition. Ventilate the area using explosion-proof equipment. Use only tools approved for use in flammable environments. Prevent the release from entering sewers or waterways. Collect material for reuse or salvage. Cover remaining spilled material with inert substance to absorb residue. Transfer liquid and absorbed materials to appropriate containers. Observe all applicable local, state and federal waste management regulations.

### **SECTION 7 HANDLING AND STORAGE**

**Handling:** Do not allow contact with eyes. Do not allow skin contact. Skin absorption presents a significant route of exposure for this product. Avoid exposure by inhalation. Wash thoroughly after handling and before eating, drinking or smoking. Use with adequate ventilation.

Control static electricity accumulation and discharge by effectively grounding and bonding containers when transferring liquids, and during storage and use. The use of explosion-proof equipment is recommended and may be required.

**Storage:** Store in a cool, dry location with adequate ventilation. Store in tightly closed container. Keep away from heat, sparks, flames and other ignition sources. Prevent contact and storage with incompatible materials.

Because empty containers may retain product residue and flammable vapors, keep away from heat, spark, or other sources of ignition. Do not cut, weld, drill, grind on or near empty containers. Do not smoke where this product is used or stored.

### **SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

The recommendations described in this section are provided as general guidance for minimizing exposure. Because usage conditions vary with customer applications, specific exposure controls should be developed by a person knowledgeable in the intended usage condition and equipment.

**Ventilation:** Provide local exhaust ventilation to capture vapors or mist generated by the process. Use explosion-proof exhaust ventilation equipment unless a process and equipment evaluation indicates this action is not required. Ventilation must be sufficient to maintain airborne levels of Section 2 ingredients below their exposure limits.

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- Eyes: Wear safety eye wear including safety glasses with side shields and chemical goggles.
- Skin: Wear protective gloves and, if appropriate, chemical resistant clothing to prevent skin contact and possible skin absorption. Wash thoroughly after handling and before eating, drinking or smoking. Remove contaminated clothing or shoes as soon as practical and thoroughly clean before reuse.
- Inhalation: Use NIOSH/MSHA approved respiratory protection if adequate exhaust ventilation is not provided or air sampling indicates exposure limits are exceeded. The type of respirator selected will depend on the conditions of use. Respiratory protection programs must comply with 29 CFR 1910.134.

### **SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

- Physical Form: Silver liquid.  
Specific Gravity: >1  
Boiling Point : Not Established.  
Vapor Pressure (25°C): Not Established.  
Vapor Density: Heavier than air.  
Solubility in Water: Insoluble.  
Volatile Content (Wt%): 2-5% (toluene)

### **SECTION 10 STABILITY AND REACTIVITY**

- Chemical Stability: Stable.
- Hazardous Polymerization: Will not occur.
- Condition to Avoid: Avoid storage in open containers, exposure to heat/sparks/open flame or exposure to incompatible substances.
- Incompatibilities: Strong oxidizers, acids, bases, amines and mercaptans.
- Hazardous Decomposition: Thermal or chemical decomposition may produce carbon monoxide, carbon dioxide, silver compounds, and traces of incompletely burned carbon products.

### **SECTION 11 TOXICOLOGY INFORMATION**

All available toxicology information has been provided in Section 3 of this document.

### **SECTION 12 ECOLOGICAL INFORMATION**

No data on ecological effects is available.

### **SECTION 13 DISPOSAL INFORMATION**

Since regulations vary, consult applicable regulations or authorities before disposing of this material.

**SECTION 14 TRANSPORTATION INFORMATION**

Proper Shipping Name: Resin Solution (Toluene)

Class: 3

UN Number: 1866

Packing Group: II

**SECTION 15 REGULATORY AND MISCELLANEOUS INFORMATION**

TSCA: All components of this product are listed on the TSCA inventory.

SARA 313 Chemicals: Silver 7440-22-4 Toluene 108-88-3

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Prepared By: Chomerics Safety Department

Revision Information: Ingredients ranges in Section 2 updated. Text consistency changes made.

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