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## Safety Data Sheet

Epoxy International

**SILVER-BOND 4 RESIN****SDS Number:** 904-R**SDS Date:** 09/27/2015

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**Product name:** SILVER-BOND 4 (Resin)  
**SDS number:** 904-R  
**Product type:** Resin  
**Chemical family:** Epoxy resin  
**Company Address:** Epoxy International  
200 Allens Ave,  
Providence, RI 02903  
**Email:** [info@epoxyinternational.com](mailto:info@epoxyinternational.com)  
**Emergency Contact Number :** (888) 522-6742  
**Fax:** (877) 522-6742  
**Chemtrec (Domestic):** (800) 424-9300  
**Chemtrec (International):** (703) 527-3887

### SECTION 2: HAZARDS IDENTIFICATION

**Form:** Viscous Liquid  
**OSHA/HCS Status:** This material is considered hazardous by the OSHA Hazard Communications Standard (29 CFR 1910.1200)  
**Emergency overview:** WARNING!  
CAUSES EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE RESPIRATORY TRACT IRRITATION. HEAD MATERIAL CAN CAUSE THERMAL BURNS.  
**Potential acute health effects:**  
**Inhalation:** Slightly irritating to the respiratory system.  
**Ingestion:** Not expected to be harmful under normal conditions of use.  
**Skin:** Irritating to skin. May cause sensitization by skin contact material. Can cause thermal burns.  
**Eyes:** Irritating to eyes. Heated material can cause thermal burns.

#### **Potential chronic health effects:**

**Chronic effects:** No known significant effects or critical hazards.  
**Carcinogenicity:** No known significant effects or critical hazards.  
**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.

**Target organs:** Review section 2 and 11 for any additional assessments.

**Over-exposure signs/symptoms**

**Inhalation:** Adverse symptoms may include the following respiratory tract irritation coughing.

**Skin:** Adverse symptoms may include the following: irritation and or redness

**Eyes:** Adverse symptoms may include the following: pain and or irritation, watering and redness.

**SECTION 3: COMPOSITION INFORMATION ON INGREDIENTS**

<b>Ingredient's name</b>	<b>CAS NUMBER</b>	<b>% BY WEIGHT</b>
Bisphenol-A-(Epichlorohydrin); Epoxy Resin	25068-38-6	< 25
Silver	7440-22-4	> 75
Dicyandiamide	--	< 2
Amine Adduct with Epoxy Resin	134001-76-2	< 2

\*\*Any applicable Canadian trade secret numbers will be listed in section 15.

**SECTION 4: FIRST AID MEASURES**

**Eye contact:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention.

**Skin contact:** Flush contaminated skin with a plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wears gloves, continue to rinse for at least 10 minutes. In the event of any complains or symptoms, avoid further exposure. Wash clothing before reuse. For contact with hot product flush contaminated skin with large amounts of cold water to dissipate heat. Gear with clean cotton sheeting or gauze. Get medical attention immediately.

**Inhalation:** Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Ingestion:** Wash out mouth with water. Remove dentures if any. Move person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting is dangerous. Do not induce vomiting unless directed to do so medical personnel If vomiting occurs, the head should be kept low

that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Protection of First Aid personnel:** In the event of body contact. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Notes to physician:** No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

## SECTION 5: FIRE FIGHTING MEASURES

**FLAMMABILITY OF THE PRODUCT:** In a fire or if heated, a pressure increase will occur and the container may burst.

### EXTINGUISHING MEDIA

**Suitable:** Use an extinguishing agent suitable for the surrounding fire.

**Not suitable:** N/A

**Special exposure hazards:** Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Hazardous Combustion Products:** Decomposition products may include the following materials: carbon oxides.

**Special protective equipment:** Fire-fighters should wear appropriate protective equip self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**Personal precautions:** No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

**Environmental precautions:** Avoid dispersal of spilled material and runoff and contact with soil, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

**Large spill:** Stop leak if without risk. Move containers from spill area. For molten material, allow the product to cool and solidify. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

**Small spill** Use an extinguishing agent suitable for the surrounding fire.

\*For safety and environmental precautions, please review entire SDS for necessary information.

## 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 processes. Workers should wash hands and face before eating, drinking or smoking. Persons with history of skin sensitization problems should not be employed in any process in which this product is used. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- 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 (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. **Note:** This resin may be handled, shipped and stored at elevated temperature in bulk.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### CONSULT LOCAL AUTHORITIES FOR ACCEPTABLE EXPOSURES LIMITS

- Ventilation:** Use only with adequate ventilation. If user operations generate dust, fumes gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Eyes:** Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
- Skin:** Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Clothing measures:** Employee must wear appropriate protective clothing and equipment to prevent any possibility of skin contact with this substance. Uniforms, coveralls, or a lab coat should be worn.
- HYGIENE MEASURES:** 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. Appropriate techniques should be used to remove potentially contaminated clothing. wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to workstation location.
- Respiratory measures:** Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels. the hazards of the products of the safe working limits of the selected respirator.
- Recommended monitoring procedures:** If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Environmental exposure controls:** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### GENERAL INFORMATION:

**PHYSICAL FORM:** Liquid

<b>COLOR:</b>	Straw Yellow
<b>ODOR:</b>	ND
<b>BOILING POINT:</b>	260°C, >500 °F
<b>FLASH POINT:</b>	249°C, >480 °F
<b>SOLUBILITY IN WATER:</b>	Negligible
<b>SPECIFIC GRAVITY (WATER=1) :</b>	1.1
<b>VAPOR PRESSURE:</b>	0.03 @171.03 @171°F, 77°C
<b>VAPOR DENSITY (AIR = 1) :</b>	3.6
<b>VOLATILES:</b>	ND
<b>SHELF LIFE:</b>	6 Months

## SECTION 10: STABILITY AND REACTIVITY

<b>Stability:</b>	The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.
<b>Materials to avoid:</b>	Reactive or incompatible with the following materials: Oxidizers, Acids, Amines
<b>Conditions to avoid:</b>	Strong oxidizer.
<b>Hazardous decompositions products:</b>	Decomposition products may include the following materials: Carbon Oxides.
<b>Hazardous polymerization conditions:</b>	CONDITIONS Heat may cause hazardous polymerization.
<b>Reactivity:</b>	Stable under normal conditions
<b>Other hazards:</b>	Reacts with considerable heat release with some curing agents.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Oral toxicity

<b>Primary Entry Route(s)</b>	Skin, eyes, inhalation
<b>LD50 – Low toxicity,</b>	LD50> 2000 mg/kg.

### Dermal toxicity

<b>LD50 -- Low toxicity,</b>	LD50 > 2000 mg/kg.
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### SENSITIZATION:

May cause skin sensitization.

### CARCINOGENICITY

Recent 2-year bioassays in rats and mice exposed by the dermal route to the diglycidyl ether of bisphenol A (BADGE) yielded no evidence of carcinogenicity to the skin or any other organs. This study clarifies prior equivocal results from a 2-year mouse skin painting study, which were suggestive, but not conclusive, for weak carcinogenic activity. Note: Diglycidyl ether of bisphenol A (BADGE) is a component in all BPA/ECH based epoxy resins.

### MUTAGENICITY:

Resins of this type, liquid resins based on diglycidyl ether of bisphenol A have proved to be inactive when tested by in vivo mutagenicity assays. These resins have shown activity in in-vitro microbial mutagenicity screening and have produced chromosomal aberrations in cultured rat liver cells. The significance of these tests to man is unknown.

## POTENTIAL HEALTH EFFECTS

### Inhalation:

Not expected to be a relevant route of exposure, however, under conditions where exposure to vapors or mists is possible, could cause respiratory tract irritation.

### Skin:

May be mildly irritating to the skin.  
Contact with hot material can cause thermal burns which may result in permanent damage.  
May cause skin sensitization.

### Eyes:

May be mildly irritating to the eyes.  
Contact with hot material can cause thermal burns which may result in permanent damage or blindness.

### Ingestion:

Not likely to be a relevant route of exposure

## SECTION 12: ECOLOGICAL INFORMATION

### Environmental effects

No known significant effects or critical hazards.

Other adverse effects

No known significant effects or critical hazards.

## SECTION 13: DISPOSAL INFORMATION

**Waste disposal:** The generations of waste should be avoided or minimize wherever possible. 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. Avoid dispersal of spilled and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: TRANSPORTATION INFORMATION

The data provided in this section is for information only and may not be specific to your package size or mode of transport. You will need to apply the appropriate regulations to properly classify your shipment for transportation.

### International Transport Regulations

<b>Regulatory Information</b>	<b>UN/NA Number</b>	<b>Proper shipping name</b>	<b>Classes/Packaging Group</b>	<b>Reportable Quantity (RQ)</b>
<b>CFR</b>	non-regulated	non-regulated	non-regulated	non-regulated
<b>IATA (Cargo)</b>	non-regulated	non-regulated	non-regulated	non-regulated
<b>TDG</b>	non-regulated	non-regulated	non-regulated	non-regulated
<b>IMO/IMDG</b>	non-regulated	non-regulated	non-regulated	non-regulated

## SECTION 15: REGULATORY INFORMATION

### US Regulations:

<b>HCS</b>	Irritating materials, sensitizing material	
<b>Classification:</b>		
<b>Canada</b>	Class D-2B: Material causing other toxic effects (Toxic).	
<b>(WHMIS):</b>	<b>Canada lists:</b> Canadian NPRI: None Required	
<b>China (IECSC)</b>	On the IECSC inventory	
<b>US Federal Regulations</b>	<b>SARA 311/312</b> classification immediate (acute) health hazard.  <b>SARA 313 – Supplier Notification</b> This product contains the following toxic chemical(s) subject to the reporting requirements of section 313 of Title 3 of the Superfund Amendments and Reauthorization Act of 1986, and Subpart C-Supplier Notification Requirement of 40 CFR Part 372. None required.  <b>SARA 302 Extremely Hazardous Substances</b> None Required	
<b>State Regulation</b>	<b>Massachusetts RTK Substances</b>	None Required
	<b>New Jersey RTK Substances</b>	None Required
	<b>Pennsylvania RTK Hazardous Substances</b>	None Required
	<b>California Prop. 65</b>	WARNING: This Product contains a chemical know to the state of California to cause cancer. Oxirane. (Phenoxymethyl) –122-60-1
<b>International Regulations</b>	<b>Europe inventory</b>	all components are listed or exempted.
	<b>Australia inventory (AICS)</b>	all components are listed or exempted.
	<b>China inventory (IECSC)</b>	all components are listed or exempted.
	<b>Korea inventory (KECI)</b>	all components are listed or exempted.
	<b>Philippines inventory (PICCS)</b>	all components are listed or exempted.
	<b>Japan inventory (ENCS)</b>	all components are listed or exempted.
	<b>Canada inventory</b>	all components are listed or exempted.
	<b>United States inventory (TSCA 8b)</b>	all components are listed or exempted.
	<b>New Zealand inventory (NZIoC)</b>	Not determined.
<b>WARNING:</b> This product contains the following chemicals that are known to the State of California to cause cancer, birth defects or other reproductive harm. Unless a concentration is specified in Section 2 of the SDS, the below chemical/s are present in trace amounts.		
<b>Component</b>	<b>CAS Number</b>	
None reportable	N/A	

## SECTION 16: REGULATORY INFORMATION

### HMIS® Hazard Ratings

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs by OSHA's 29 CFR 1910.1200, we choose to provide them as a service to our customers using HMIS®. These ratings are to be used only with a fully implemented HMIS® program. To deal adequately with the safe handling of this material, all the information contained in this SDS must be considered.

NPCA recommends that employers must determine appropriate PPE for the actual conditions under which this product is used in their workplace. For information on PPE codes, consult the HMIS® Implementation Manual.

When two ratings are provided for Health, the first represents the material 'as supplied', and the second represents the material 'in use'.

\* = chronic health hazard

HMIS® is a registered trademark of the National Paint and Coatings Association (NPCA).

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Health	Flammability	Physical Hazard
2	1	0

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### Notice to reader:

The information provided herein was believed by Epoxy International to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply suitability of the product for its intended use. All products supplied by Epoxy International are subject to Epoxy International' terms and conditions of sale. EPOXY INTERNATIONAL MAKES NO WARRANTY, EXPRESSED OR FOR ANY PURPOSE OF CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY EPOXY INTERNATIONAL, except that the product shall conform to Epoxy International specifications. Nothing contained herein constitutes an offer for the sale of any product.

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