



Revision Number: 003.0

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**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product name:** Ablefilm ECF550-1-005, 12 x 12  
**Product type:** Epoxy adhesive  
**IDH number:** 1198793  
**Region:** United States  
**Company address:** Henkel Electronic Materials LLC  
 14000 Jamboree Road  
 Irvine, CA 92606  
**Contact information:** Telephone: 1.888.9.HENKEL (1.888.943.6535)  
 MEDICAL EMERGENCY Phone: Poison Control Center  
 1-877-671-4608 (toll free) or 1-303-592-1711  
 TRANSPORT EMERGENCY Phone: CHEMTREC  
 1-800-424-9300 (toll free) or 1-703-527-3887  
 Internet: www.henkelna.com

**2. HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW**

<b>Physical state:</b>	Film	<b>HEALTH:</b>	*2
<b>Color:</b>	Silver	<b>FLAMMABILITY:</b>	1
<b>Odor:</b>	Slight	<b>PHYSICAL HAZARD:</b>	0
		<b>Personal Protection:</b>	See MSDS Section 8

**WARNING:** MAY CAUSE ALLERGIC SKIN REACTION.  
 MAY CAUSE EYE AND SKIN IRRITATION.

**Relevant routes of exposure:** Skin, Inhalation, Eyes

**Potential Health Effects**

**Inhalation:** Low vapor pressure makes inhalation unlikely at standard temperatures and pressures. Inhalation of processing fumes may be harmful.

**Skin contact:** Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitisation of susceptible persons. May cause mechanical irritation. Argyria (a non-toxic, cosmetic blue-gray discoloration of the skin and mucous membranes that is irreversible).

**Eye contact:** This product may cause irritation to the eyes. Fumes released during thermal processing may cause eye irritation.

**Ingestion:** Not expected under normal conditions of use. Ingestion of this product may cause nausea, vomiting and diarrhea.

**Existing conditions aggravated by exposure:** Skin allergies. Other pre-existing skin conditions.

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

See Section 11 for additional toxicological information.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

Hazardous components	CAS NUMBER	%
Silver	7440-22-4	60 - 100
Modified epoxy resin	Proprietary	10 - 30
Glass, oxide, chemicals	65997-17-3	5 - 10
Epoxy resin	Proprietary	5 - 10
Epoxy resin	Proprietary	1 - 5
Cyanoguanidine	461-58-5	1 - 5

#### 4. FIRST AID MEASURES

<b>Inhalation:</b>	Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
<b>Skin contact:</b>	Immediately flush skin with plenty of water (using soap, if available). Remove contaminated clothing and footwear. Wash clothing before reuse. If symptoms develop and persist, get medical attention.
<b>Eye contact:</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Ingestion:</b>	DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

#### 5. FIRE FIGHTING MEASURES

<b>Flash point:</b>	> 93.30 °C (> 199.94 °F)
<b>Autoignition temperature:</b>	Not available.
<b>Flammable/Explosive limits - lower:</b>	Not available.
<b>Flammable/Explosive limits - upper:</b>	Not available.
<b>Extinguishing media:</b>	Water spray (fog), foam, dry chemical or carbon dioxide.
<b>Special firefighting procedures:</b>	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. In case of fire, keep containers cool with water spray.
<b>Unusual fire or explosion hazards:</b>	This product is combustible at high temperatures. Closed containers may rupture (due to build up of pressure) when exposed to extreme heat.
<b>Hazardous combustion products:</b>	Oxides of carbon, oxides of nitrogen, irritating organic vapors.

#### 6. ACCIDENTAL RELEASE MEASURES

<b>Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.</b>	
<b>Environmental precautions:</b>	Do not allow product to enter sewer or waterways.
<b>Clean-up methods:</b>	Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment during clean-up. Sweep up or gather material and place in appropriate container for disposal.

#### 7. HANDLING AND STORAGE

<b>Handling:</b>	Use only with adequate ventilation. Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Refer to Section 8.
<b>Storage:</b>	Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Silver	0.1 mg/m <sup>3</sup> TWA Dust and fume.	0.01 mg/m <sup>3</sup> TWA (as Ag)	None	None
Modified epoxy resin	None	None	None	None
Glass, oxide, chemicals	10 mg/m <sup>3</sup> TWA Inhalable dust. 3 mg/m <sup>3</sup> TWA Respirable fraction.	15 mg/m <sup>3</sup> TWA Total dust. 5 mg/m <sup>3</sup> TWA Respirable fraction.	None	None
Epoxy resin	None	None	None	None
Epoxy resin	None	None	None	None
Cyanoguanidine	None	None	None	None

<b>Engineering controls:</b>	Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.
<b>Respiratory protection:</b>	Use NIOSH approved respirator if there is potential to exceed exposure limit(s).
<b>Eye/face protection:</b>	Safety goggles or safety glasses with side shields. Safety showers and eye wash stations should be available.
<b>Skin protection:</b>	Use impermeable gloves and protective clothing as necessary to prevent skin contact.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b>	Film
<b>Color:</b>	Silver
<b>Odor:</b>	Slight
<b>Odor threshold:</b>	Not available.
<b>pH:</b>	Not available.
<b>Vapor pressure:</b>	Not applicable
<b>Boiling point/range:</b>	Not available.
<b>Melting point/ range:</b>	Not available.
<b>Specific gravity:</b>	3.3
<b>Vapor density:</b>	Not available.
<b>Flash point:</b>	> 93.30 °C (> 199.94 °F)
<b>Flammable/Explosive limits - lower:</b>	Not available.
<b>Flammable/Explosive limits - upper:</b>	Not available.
<b>Autoignition temperature:</b>	Not available.
<b>Evaporation rate:</b>	Not available.
<b>Solubility in water:</b>	Insoluble
<b>Partition coefficient (n-octanol/water):</b>	Not available.
<b>VOC content:</b>	< 3 % (calculated)

## 10. STABILITY AND REACTIVITY

<b>Stability:</b>	Stable under normal conditions of storage and use.
<b>Hazardous reactions:</b>	Hazardous polymerization can occur.
<b>Hazardous decomposition products:</b>	Oxides of carbon. Oxides of sulfur. Irritating organic fragments.
<b>Incompatible materials:</b>	Avoid contact with amines.
<b>Conditions to avoid:</b>	Elevated temperatures.

## 11. TOXICOLOGICAL INFORMATION

<b>Acute dermal product toxicity:</b>	Prolonged or repeated skin contact with silver and its salts may cause a blue-gray discoloration of the skin and mucous membranes that is irreversible (Argyria).
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Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Silver	No	No	No
Modified epoxy resin	No	No	No
Glass, oxide, chemicals	No	No	No
Epoxy resin	No	No	No
Epoxy resin	No	No	No
Cyanoguanidine	No	No	No

Hazardous components	Health Effects/Target Organs
Silver	Allergen, Eyes, Irritant, Respiratory, Skin
Modified epoxy resin	Irritant, Allergen
Glass, oxide, chemicals	Allergen, Respiratory
Epoxy resin	Allergen, Irritant
Epoxy resin	Irritant, Allergen
Cyanoguanidine	Allergen, Central nervous system, Eyes, Irritant

## 12. ECOLOGICAL INFORMATION

**Ecological information:** Not available.

## 13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

**Recommended method of disposal:** Follow all local, state, federal and provincial regulations for disposal.

**Hazardous waste number:** Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. D011: Silver (Check TCLP Level).

## 14. TRANSPORT INFORMATION

The shipping classification in this section is the substance classification. The actual shipping classification may be different as exceptions may apply based upon size of package and mode of shipment. Please refer to shipping documents for package specific transportation classification.

### U.S. Department of Transportation Ground (49 CFR)

**Proper shipping name:** Not regulated  
**Hazard class or division:** None  
**Identification number:** None  
**Packing group:** None

### International Air Transportation (ICAO/IATA)

**Proper shipping name:** Not regulated  
**Hazard class or division:** None  
**Identification number:** None  
**Packing group:** None

### Water Transportation (IMO/IMDG)

**Proper shipping name:** Not regulated  
**Hazard class or division:** None  
**Identification number:** None  
**Packing group:** None

## 15. REGULATORY INFORMATION

### United States Regulatory Information

**TSCA 8 (b) Inventory Status:** All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

**TSCA 12(b) Export Notification:** None above reporting de minimus

**CERCLA/SARA Section 302 EHS:** None above reporting de minimus  
**CERCLA/SARA Section 311/312:** Immediate Health, Delayed Health  
**CERCLA/SARA 313:** This product contains the following 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). Silver (CAS# 7440-22-4).

**CERCLA Reportable quantity:** Silver (CAS# 7440-22-4) 1,000 lbs. (454 kg)

**California Proposition 65:** No California Proposition 65 listed chemicals are known to be present.

#### Canada Regulatory Information

**CEPA DSL/NDSL Status:** Contains one or more components listed on the Non-Domestic Substances List. All other components are listed on or are exempt from listing on the Domestic Substances List. Components listed on the NDSL must be tracked by all Canadian Importers of Record as required by Environment Canada. They may be imported into Canada in limited quantities. Please contact Regulatory Affairs for additional details.

**WHMIS hazard class:** D.2.A, D.2.B

### 16. OTHER INFORMATION

**This material safety data sheet contains changes from the previous version in sections:** New Material Safety Data Sheet format., Updated HMIS rating in Section 2., Updated composition in Section 3., This Material Safety Data Sheet contains changes from the previous version in Section(s): 2,14,15

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