



Revision Number: 003.0

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**1. PRODUCT AND COMPANY IDENTIFICATION**

<b>Product name:</b> Ablefilm ECF563-003	<b>IDH number:</b> 1471443
<b>Product type:</b> Conductive dry film product	<b>Item number:</b> 405400
	<b>Region:</b> United States
<b>Company address:</b> Henkel Electronic Materials LLC 14000 Jamboree Road Irvine, CA 92606	<b>Contact information:</b> 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> grey	<b>FLAMMABILITY:</b> 1
<b>Odor:</b> Slight	<b>PHYSICAL HAZARD:</b> 0
	<b>Personal Protection:</b> See MSDS Section 8
<b>WARNING:</b> MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION. REPEATED OR PROLONGED CONTACT MAY CAUSE ALLERGIC SKIN REACTION.	

**Relevant routes of exposure:** Skin

**Potential Health Effects**

<b>Inhalation:</b>	Low vapor pressure makes inhalation unlikely at standard temperatures and pressures. Inhalation of processing fumes may be harmful.
<b>Skin contact:</b>	Prolonged or repeated skin contact may cause irritation, skin sensitization and argyria (a non-toxic, cosmetic blue-gray discoloration of the skin and mucous membranes that is irreversible).
<b>Eye contact:</b>	Fumes released during thermal processing may cause eye irritation.
<b>Ingestion:</b>	May be harmful if swallowed.

**Existing conditions aggravated by exposure:** May cause allergic skin reaction in individuals with pre-existing skin sensitization.

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	5 - 10
Epoxy resin	Proprietary	5 - 10
Epoxy resin	Proprietary	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. If symptoms develop and persist, get medical attention.
<b>Skin contact:</b>	Wash with soap and water. If a person feels unwell or symptoms of skin irritation appear, consult a physician.
<b>Eye contact:</b>	In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate 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. If symptoms develop and persist, get medical attention.

#### 5. FIRE FIGHTING MEASURES

<b>Flash point:</b>	Not applicable
<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. Cartridge respirators do not provide adequate protection for fire fighters or exotherm mitigation.
<b>Unusual fire or explosion hazards:</b>	May liberate large quantities of dense, foul-smelling smoke which may contain unidentified toxic gasses.
<b>Hazardous combustion products:</b>	Oxides of carbon and nitrogen, aldehydes, acids and undetermined organics.

#### 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 let product enter drains.
<b>Clean-up methods:</b>	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.
<b>Storage:</b>	Store in a cool, dry area.

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
Epoxy resin	None	None	None	None
Epoxy resin	None	None	None	None

**Engineering controls:** Local exhaust ventilation is recommended when general ventilation is not sufficient to control airborne contamination.

**Respiratory protection:** Use a NIOSH approved respirator if ventilation is inadequate.

**Eye/face protection:** Safety goggles or safety glasses with side shields.

**Skin protection:** Use impermeable gloves and protective clothing as necessary to prevent skin contact.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Film  
**Color:** grey  
**Odor:** Slight  
**Odor threshold:** Not available  
**pH:** Not available  
**Vapor pressure:** Not available  
**Boiling point/range:** Not available  
**Melting point/ range:** Not determined  
**Specific gravity:** 4.1  
**Vapor density:** Not available  
**Flash point:** Not applicable  
**Flammable/Explosive limits - lower:** Not available  
**Flammable/Explosive limits - upper:** Not available  
**Autoignition temperature:** Not available  
**Evaporation rate:** Not determined  
**Solubility in water:** Insoluble  
**Partition coefficient (n-octanol/water):** Not determined  
**VOC content:** Not available

## 10. STABILITY AND REACTIVITY

**Stability:** Stable

**Hazardous reactions:** Will not occur.

**Hazardous decomposition products:** Oxides of carbon and nitrogen, aldehydes, acids and undetermined organics.

**Incompatible materials:** Keep away from strong oxidizing agents, strong Lewis or mineral acids.

**Conditions to avoid:** None known

## 11. TOXICOLOGICAL INFORMATION

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Silver	No	No	No
Modified epoxy resin	No	No	No
Epoxy resin	No	No	No
Epoxy resin	No	No	No

Hazardous components	Health Effects/Target Organs
Silver	Allergen, Eyes, Irritant, Respiratory, Skin
Modified epoxy resin	Irritant, Allergen
Epoxy resin	Irritant, Allergen
Epoxy resin	Allergen, Irritant

## 12. ECOLOGICAL INFORMATION

**Ecological information:** Harmful to aquatic organisms.

## 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:** D011. silver

## 14. TRANSPORT INFORMATION

### 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:** Environmentally hazardous substance, solid, n.o.s.  
**Hazard class or division:** 9  
**Identification number:** UN 3077  
**Packing group:** III

### Water Transportation (IMO/IMDG)

**Proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
**Hazard class or division:** 9  
**Identification number:** UN 3077  
**Packing group:** III

## 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

**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).

**California Proposition 65:** This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

### 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.B

## 16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: New Material Safety Data Sheet format.

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