



Revision Number: 007.0

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name:	LOCTITE LF 318 97SCAGS88.5 BU known as 97SC LF318 AGS 88.5 JAR MB626	IDH number:	721440
Product type:	Solder Paste	Item number:	M00572
Restriction of Use:	None identified	Region:	United States
Company address:	Henkel Electronic Materials LLC 14000 Jamboree Road Irvine, CA 92606	Contact information:	Telephone: +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.henkel.com/electronics

EXPORTATION OF THIS PRODUCT MAY BE CONTROLLED BY THE UNITED STATES GOVERNMENT DEPARTMENT OF COMMERCE. SEE SECTION 15 FOR DETAILS.

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER: CAUSES SKIN IRRITATION.
MAY CAUSE AN ALLERGIC SKIN REACTION.
CAUSES SERIOUS EYE IRRITATION.
MAY CAUSE ALLERGY OR ASTHMA SYMPTOMS OR BREATHING DIFFICULTIES IF INHALED.

HAZARD CLASS	HAZARD CATEGORY
SKIN IRRITATION	2
EYE IRRITATION	2A
RESPIRATORY SENSITIZATION	1
SKIN SENSITIZATION	1

PICTOGRAM(S)



Precautionary Statements

Prevention:	Avoid breathing dust or fumes. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear eye and face protection. Wear protective gloves. In case of inadequate ventilation wear respiratory protection.
Response:	IF ON SKIN: Wash with plenty of soap and water. IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to remove. Continue rinsing. If skin irritation or rash occurs: Get medical attention. If eye irritation persists: Get medical attention. If experiencing respiratory symptoms: Call a poison center or physician. Take off contaminated clothing.
Storage:	Not prescribed
Disposal:	Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Tin	7440-31-5	60 - 100
Rosin	8050-09-7	1 - 5
Silver	7440-22-4	1 - 5
Polyethylene glycol dibutyl ether	31885-97-9	1 - 5
Copper	7440-50-8	0.1 - 1
Triethanolamine	102-71-6	0.1 - 1

* Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation:	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get immediate medical attention.
Skin contact:	Remove contaminated clothing and footwear. Wash with soap and water. Immediately flush skin with plenty of water (using soap, if available). If a person feels unwell or symptoms of skin irritation appear, consult a physician. Wash clothing before reuse.
Eye contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Ingestion:	DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get immediate medical attention.
Symptoms:	See Section 11.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Water spray (fog), foam, dry chemical or carbon dioxide.
Special firefighting procedures:	Wear a self-contained breathing apparatus with a full face piece operated in pressure-demand or other positive pressure mode.
Unusual fire or explosion hazards:	In case of fire, keep containers cool with water spray.
Hazardous combustion products:	High temperatures may produce heavy metal dust, fumes or vapors. The flux will give rise to irritating fumes. Formaldehyde.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Do not allow product to enter sewer or waterways.
Clean-up methods:	Ensure adequate ventilation. Wear suitable protective clothing, gloves and eye/face protection. Scrape up spilled material and place in a closed container for disposal.

7. HANDLING AND STORAGE

Handling: Use only with adequate ventilation. Wear suitable protective clothing, gloves and eye/face protection. Avoid skin contact with molten resins. Avoid contact with eyes, skin and clothing. Do not wear contact lenses. Wash thoroughly after handling.

Storage: Store in original container until ready to 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 Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Tin	2 mg/m3 TWA	2 mg/m3 PEL (as Sn)	None	None
Rosin	Exposure by all routes should be carefully controlled to levels as low as possible. Included in the regulation but with no data values. See regulation for further details (Respiratory sensitization) (Dermal sensitization)	None	None	None
Silver	0.1 mg/m3 TWA Dust and fume.	0.01 mg/m3 PEL (as Ag)	None	None
Polyethylene glycol dibutyl ether	None	None	None	None
Copper	0.2 mg/m3 TWA (as Cu) Fume. 1 mg/m3 TWA (as Cu) Dust and mist.	1 mg/m3 PEL (as Cu) Dust and mist. 0.1 mg/m3 PEL (as Cu) Fume.	None	None
Triethanolamine	5 mg/m3 TWA	None	None	None

Engineering controls: Use only with adequate ventilation. Use local ventilation if general ventilation is insufficient to maintain vapor concentration below established exposure limits.

Respiratory protection: When workplace hazards warrant the use of a respirator, appropriate respirators must be used, and a program that follows 29 CFR 1910.134 must be followed.

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: Paste, Solid
Color: Gray
Odor: mild
Odor threshold: Not available.
pH: Not applicable
Vapor pressure: Not available.
Boiling point/range: 256 °C (492.8 °F) (solvent)
Melting point/ range: 217 °C (422.6 °F) (solder alloy)
Specific gravity: 4.37
Vapor density: Heavier than air.

Flash point:	117 °C (242.6 °F)
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not determined
Evaporation rate:	Not available.
Solubility in water:	Not miscible
Partition coefficient (n-octanol/water):	Not determined
VOC content:	0 %; 0 g/l
Viscosity:	Not available.
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage conditions.
Hazardous reactions:	Will not occur.
Hazardous decomposition products:	Thermal decomposition can lead to release of irritating gases and vapors. Formaldehyde.
Incompatible materials:	Incompatible with oxidising agents.
Reactivity:	Not available.
Conditions to avoid:	Solder alloy will react with concentrated nitric acid to produce toxic fumes of nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure:	Skin, Inhalation, Eyes
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Potential Health Effects/Symptoms

Inhalation: Inhalation of processing fumes may be harmful. May cause allergic respiratory reaction. Fumes and/or dust produced by this product may be hazardous in case of ingestion or inhalation. Rosin thermal decomposition product (as formaldehyde) is classified by NIOSH as a potential occupational carcinogen. Excessive inhalation of fumes from many metals can produce an acute reaction known as "metal fume fever". Symptoms consist of chills and fever (very similar to and easily confused with flu symptoms) which come on a few hours after large exposures. Lead is a cumulative poison and continuous exposure to small amounts over time can raise the body's content to toxic levels.

Skin contact: Causes skin irritation. May cause allergic skin reaction. Argyria (a non-toxic, cosmetic blue-gray discoloration of the skin and mucous membranes that is irreversible).

Eye contact: Causes serious eye irritation.

Ingestion: Lead is a cumulative poison and continuous exposure to small amounts over time can raise the body's content to toxic levels. May cause gastrointestinal tract irritation if swallowed. Symptoms of lead poisoning include abdominal pain, nausea, vomiting, and headache.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Tin	None	Gastrointestinal, Irritant, Kidney, Liver, Lung, Nervous System
Rosin	None	Allergen, Irritant, Respiratory
Silver	Oral LD50 (RAT) = > 5,000 mg/kg Dermal LD50 (RAT) = > 2,000 mg/kg	Allergen, Eyes, Irritant, Respiratory, Skin
Polyethylene glycol dibutyl ether	None	No Records
Copper	None	Allergen, Blood, Central nervous system, Developmental, Gastrointestinal, Immune system, Irritant, Kidney, Liver, Mutagen, Sensory, Skin
Triethanolamine	Oral LD50 (RAT) = 8.0 g/kg Dermal LD50 (RABBIT) = > 20,000 mg/kg	Irritant, Allergen

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Tin	No	No	No
Rosin	No	No	No
Silver	No	No	No
Polyethylene glycol dibutyl ether	No	No	No
Copper	No	No	No
Triethanolamine	No	No	No

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. Do not dispose of in an uncontrolled manner.

Hazardous waste number: D011. Silver.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

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: Glycol Ether (CAS# 31885-97-9).

CERCLA/SARA Section 302 EHS: None above reporting de minimis
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health

CERCLA/SARA Section 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 to the State of California to cause birth defects or other reproductive harm.

Export Restrictions: This product is controlled for export by the United States Department of Commerce. The Export Classification Control Number (ECCN) is 1C995.a.2.a

Canada Regulatory Information

CEPA DSL/NDL Status: One or more components are not listed on, and are not exempt from listing on either the Domestic Substances List or the Non-Domestic Substances List.

16. OTHER INFORMATION

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

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