

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: **LORD 6144S**
Product Use/Class: **Conductive Paste**

LORD Corporation
111 LORD Drive
Cary, NC 27511-7923

Telephone: 814 868-3180
Non-Transportation Emergency: 814 763-2345
Chemtrec 24 Hr Transportation Emergency No.
800 424-9300 (Outside Continental U.S. 703 527-3887)

EFFECTIVE DATE: 07/14/2015

2. HAZARDS IDENTIFICATION**GHS CLASSIFICATION:**

Acute toxicity Inhalation - Dust and Mist Category 4 - 16.9% of the mixture consists of ingredient(s) of unknown toxicity.
Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 2A
Skin sensitization Category 1
Carcinogenicity Category 2
Specific target organ systemic toxicity (single exposure) Category 2 Central nervous system
Specific target organ systemic toxicity (single exposure) Category 1 Respiratory system
Specific target organ systemic toxicity (repeated exposure) Category 2 Blood, brain, Hematopoietic System, Kidney, Liver
Specific target organ systemic toxicity (repeated exposure) Category 1 Respiratory system, Eyes
Hazardous to the aquatic environment - acute hazard Category 2
Hazardous to the aquatic environment - chronic hazard Category 3

GHS LABEL ELEMENTS:

Symbol(s)

**Signal Word**

DANGER

Hazard Statements

Harmful if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
Suspected of causing cancer.
May cause damage to organs.(Central nervous system)
Causes damage to organs.(Respiratory system)
May cause damage to organs through prolonged or repeated exposure in contact with skin.(Blood, brain, Hematopoietic System, Kidney, Liver)
Causes damage to organs through prolonged or repeated exposure.(Respiratory system, Eyes)
Toxic to aquatic life.
Harmful to aquatic life with long lasting effects.

Precautionary Statements

Prevention

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Wear protective gloves/eye protection/face protection.
- Use personal protective equipment as required.
- Do not breathe dust/fume/gas/mist/vapors/spray.
- Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Use only outdoors or in a well-ventilated area.
- Contaminated work clothing should not be allowed out of the workplace.
- Avoid release to the environment.

Response

- Call a POISON CENTER or doctor/physician if you feel unwell.
- IF exposed: Call a POISON CENTER or doctor/physician.
- Specific treatment (see supplemental first aid instructions on this label).
- IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
- IF ON SKIN: Wash with plenty of soap and water.
- If skin irritation or rash occurs: Get medical advice/attention.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
- Continue rinsing.
- Take off contaminated clothing and wash before reuse.

Storage

Store locked up.

Disposal:

Dispose of contents/container in accordance with waste/disposal laws and regulations of your country or particular locality.

Other Hazards:

This product contains component(s) which have the following warnings; however based on the GHS classification criteria of your country or locale, the product mixture may be outside the respective category(s).

Acute: Harmful if absorbed through skin. Vapor harmful; may affect the brain or nervous system causing dizziness, headache or nausea. Eye contact may cause severe eye damage, including vision disturbances, corneal damage, and blindness. May cause eye burns. May cause central nervous system depression characterized by the following progressive steps: headache, dizziness, staggering gait, confusion, unconsciousness or coma. May cause allergic respiratory reaction. May cause respiratory tract irritation. Harmful if swallowed. Ingestion is not an expected route of entry in industrial or commercial uses.

Chronic: Prolonged or repeated contact may result in dermatitis. This product contains silver; localized argyria may occur from silver particles imbedded in skin during handling. IARC has designated Gamma butyrolactone to be in Group 3 - inadequate evidence for carcinogenicity in humans, and limited evidence in experimental animals.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Range
Silver	7440-22-4	70 - 75 %
Epoxy resin	PROPRIETARY	10 - 15 %
Gamma butyrolactone	96-48-0	5 - 10 %

Any "PROPRIETARY" component(s) in the above table is considered trade secret, thus the specific chemical and its exact concentration is being withheld.

4. FIRST AID MEASURES

FIRST AID - EYE CONTACT: Flush eyes immediately with large amount of water for at least 15 minutes holding eyelids open while flushing. Get prompt medical attention.

FIRST AID - SKIN CONTACT: Flush contaminated skin with large amounts of water while removing contaminated clothing. Wash affected skin areas with soap and water. Get medical attention if symptoms occur.

FIRST AID - INHALATION: Move person to fresh air. Restore and support continued breathing. If breathing is difficult, give oxygen. Get immediate medical attention.

FIRST AID - INGESTION: If swallowed, do not induce vomiting. Call a physician or poison control center immediately for further instructions. Never give anything by mouth if victim is rapidly losing consciousness, unconscious or convulsing.

5. FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Carbon Dioxide, Dry Chemical, Foam, Water Fog

SPECIFIC HAZARDS POSSIBLY ARISING FROM THE CHEMICAL: Keep containers tightly closed. Closed containers may rupture when exposed to extreme heat. Use water spray to keep fire exposed containers cool. During a fire, irritating and/or toxic gases and particulate may be generated by thermal decomposition or combustion.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE-FIGHTERS: Wear full firefighting protective clothing, including self-contained breathing apparatus (SCBA). Water spray may be ineffective. If water is used, fog nozzles are preferable.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES: Avoid breathing vapors. Use self-contained breathing equipment. Avoid contact.

ENVIRONMENTAL PRECAUTIONS: Do not contaminate bodies of water, waterways, or ditches, with chemical or used container.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANUP: Notify appropriate authorities if necessary. Contain and remove with inert absorbent material. Avoid contact. Keep non-essential personnel away from spill area. Before attempting cleanup, refer to hazard caution information in other sections of the SDS form.

7. HANDLING AND STORAGE

HANDLING: Keep closure tight and container upright to prevent leakage. Wash thoroughly after handling. Avoid breathing of vapor or spray mists. Use with adequate ventilation.

STORAGE: Store only in well-ventilated areas. Keep container closed when not in use.

INCOMPATIBILITY: Strong acids, bases, and strong oxidizers. Reaction of the imidazole in this product with peroxides may result in violent decomposition of peroxide possibly creating an explosion. Peroxides and oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

COMPONENT EXPOSURE LIMIT

<u>Chemical Name</u>	<u>ACGIH TLV-TWA</u>	<u>ACGIH TLV-STEL</u>	<u>OSHA PEL-TWA</u>	<u>OSHA PEL-CEILING</u>	<u>Skin</u>
Silver	0.1 mg/m ³	N.E.	0.01 mg/m ³	N.E.	N.A.
Epoxy resin	N.E.	N.E.	N.E.	N.E.	N.A.
Gamma butyrolactone	N.E.	N.E.	N.E.	N.E.	N.A.

N.A. - Not Applicable, N.E. - Not Established, S - Skin Designation

Engineering controls: Sufficient ventilation in pattern and volume should be provided in order to maintain air contaminant levels below recommended exposure limits.

PERSONAL PROTECTION MEASURES/EQUIPMENT:

RESPIRATORY PROTECTION: Use a NIOSH approved chemical/mechanical filter respirator designed to remove a combination of particulates and organic vapor if occupational limits are exceeded. For emergency

situations, confined space use, or other conditions where exposure limits may be greatly exceeded, use an approved air-supplied respirator. Observe OSHA regulations (29CFR 1910.134) for respirator use.

SKIN PROTECTION: Use neoprene, nitrile, or rubber gloves to prevent skin contact.

EYE PROTECTION: Use safety eyewear including safety glasses with side shields and chemical goggles where splashing may occur.

OTHER PROTECTIVE EQUIPMENT: Use disposable or impervious clothing if work clothing contamination is likely. Remove and wash contaminated clothing before reuse.

HYGIENIC PRACTICES: Wash hands before eating, smoking, or using toilet facility. Do not smoke in any chemical handling or storage area. Food or beverages should not be consumed anywhere this product is handled or stored. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Typical values, not to be used for specification purposes.

ODOR:	Characteristic	VAPOR PRESSURE:	N.D.
APPEARANCE:	Silver	VAPOR DENSITY:	Heavier than Air
PHYSICAL STATE:	Paste	LOWER EXPLOSIVE LIMIT:	Not Applicable
FLASH POINT:	≥ 201 °F, 93 °C	UPPER EXPLOSIVE LIMIT:	Not Applicable
	Pensky-Martens Closed		
	Cup		
BOILING RANGE:	205 °C	EVAPORATION RATE:	Slower than n-butyl-acetate
AUTOIGNITION TEMPERATURE:	N.D.	DENSITY:	3.37 g/cm ³ - 28.06 lb/gal
DECOMPOSITION TEMPERATURE:	N.D.	VISCOSITY, DYNAMIC:	N.D.
ODOR THRESHOLD:	N.D.	VISCOSITY, KINEMATIC:	N.D.
SOLUBILITY IN H₂O:	Insoluble	VOLATILE BY WEIGHT:	8.98 %
pH:	N.A.	VOLATILE BY VOLUME:	27.03 %
FREEZE POINT:	N.D.	VOC CALCULATED:	2.52 lb/gal, 302 g/l
COEFFICIENT OF WATER/OIL DISTRIBUTION:	N.D.		

LEGEND: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

10. STABILITY AND REACTIVITY

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur under normal conditions.

STABILITY: Product is stable under normal storage conditions.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY: Strong acids, bases, and strong oxidizers.; Reaction of the imidazole in this product with peroxides may result in violent decomposition of peroxide possibly creating an explosion.; Peroxides and oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Silver fume, Carbon monoxide, carbon dioxide, oxides of nitrogen

11. TOXICOLOGICAL INFORMATION

EXPOSURE PATH: Refer to section 2 of this SDS.

SYMPTOMS: Refer to section 2 of this SDS.

TOXICITY MEASURES:

Chemical Name	LD50/LC50
Silver	Oral LD50: Rat > 2,000 mg/kg GHS LC50 (vapour): rat > 55 mg/l /4 h

Epoxy resin	Oral LD50: Rat 11,400 mg/kg Oral LD50: Rat 11,400 mg/kg
Gamma butyrolactone	Oral LD50: Rat 1,540 mg/kg Inhalation LC50: Rat > 5,100 mg/m3 /4 h

Germ cell mutagenicity: No classification proposed

Carcinogenicity: Category 2 - Suspected of causing cancer.
Components contributing to classification: 4-Methylimidazole.

Reproductive toxicity: No classification proposed

12. ECOLOGICAL INFORMATION

ECOTOXICITY:

<u>Chemical Name</u>	<u>Ecotoxicity</u>
Silver	N.D.
Epoxy resin	N.D.
Gamma butyrolactone	<u>Invertebrates:</u> Daphnia magna Straus > 500 mg/148 h <u>Plants:</u> Desmodemus subspicatus 360 mg/172 h Desmodemus subspicatus 79 mg/196 h

PERSISTENCE AND DEGRADABILITY: Not determined for this product.

BIOACCUMULATIVE: Not determined for this product.

MOBILITY IN SOIL: Not determined for this product.

OTHER ADVERSE EFFECTS: Not determined for this product.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Disposal should be done in accordance with Federal (40CFR Part 261), state and local environmental control regulations. If waste is determined to be hazardous, use licensed hazardous waste transporter and disposal facility.

14. TRANSPORT INFORMATION

This product is NOT REGULATED for non-bulk US DOT Road, IATA Cargo or IMDG shipments. For the most accurate shipping information, refer to your transportation/compliance department regarding changes in package size, mode of shipment or other regulatory descriptors.

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: AS FOLLOWS:

SARA SECTION 313

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372.:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Weight % Less Than</u>
Silver	7440-22-4	75.0 %

TOXIC SUBSTANCES CONTROL ACT:

INVENTORY STATUS

The chemical substances in this product are on the TSCA Section 8 Inventory.

EXPORT NOTIFICATION

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

NONE

16. OTHER INFORMATION

Under HazCom 2012 it is optional to continue using the HMIS rating system. It is important to ensure employees have been trained to recognize the different numeric ratings associated with the HazCom 2012 and HMIS schemes.

HMIS RATINGS - HEALTH: 2* FLAMMABILITY: 1 PHYSICAL HAZARD: 0

* - Indicates a chronic hazard; see Section 2

Revision: New GHS SDS Format

Effective Date: 07/14/2015

DISCLAIMER

The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.