



MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: **LORD 2232 SILVER CONDUCTOR PAINT**
Product Use/Class: **CONDUCTIVE PASTE**

LORD CORPORATION
111 LORD DRIVE
CARY, NC 27511-7923

TRANSPORTATION EMERGENCY:
CHEMTREC 24 HR EMERGENCY NO.
800 424-9300
(Outside Continental U.S. 703 527-3887)

INFORMATION TELEPHONE:
814 868-0924

NON-TRANSPORTATION EMERGENCY:
814 763-2345

EFFECTIVE DATE: 08/24/2011

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Weight % Less Than</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	7440-22-4	45.0 %	0.1 mg/m3	N.E.	0.01 mg/m3	N.E.	N.A.
Glycol ether solvent	PROPRIETARY	25.0 %	20 ppm	N.E.	N.E.	N.E.	N.A.
N-Butyl acetate	123-86-4	20.0 %	150 ppm	200 ppm	710 mg/m3 150 ppm	N.E.	N.A.
1-Methoxy-2-propyl acetate	108-65-6	15.0 %	N.E.	N.E.	N.E.	N.E.	N.A.
Rosin, polymerized	PROPRIETARY	5.0 %	N.E.	N.E.	N.E.	N.E.	N.A.
Amyl acetate	628-63-7	5.0 %	50 ppm	100 ppm	525 mg/m3 100 ppm	N.E.	N.A.

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

3. HAZARDS IDENTIFICATION

***** EMERGENCY OVERVIEW ***:** Silver Liquid, with Organic odor. Combustible liquid and vapor. Vapor harmful; may affect the brain or nervous system causing dizziness, headache or nausea. Harmful if absorbed through skin. May cause allergic skin reaction. May cause allergic respiratory reaction. May cause skin and eye irritation.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: May cause eye irritation.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: May be absorbed through the skin in harmful amounts. May cause allergic skin reaction. May cause skin irritation.

EFFECTS OF OVEREXPOSURE - INHALATION: Possible irritation of the respiratory system can occur causing a variety of symptoms such as dryness of the throat, tightness of the chest, and shortness of breath. 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. Hot vapor can cause nose and throat irritation.

EFFECTS OF OVEREXPOSURE - INGESTION: Harmful if swallowed. Ingestion is not an expected route of entry in industrial or commercial uses.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: May cause damage to red blood cells. May cause liver or kidney damage. Repeated or prolonged solvent overexposure may result in permanent central nervous system damage. Repeated exposure to smoke or fumes generated by heating this product may lead to respiratory sensitization (asthma) in susceptible individuals. This product contains silver; localized argyria may occur from silver particles

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imbedded in skin during handling. Prolonged or repeated contact may result in dermatitis. ACGIH considers the glycol ether solvent in this product to be an A3 carcinogen (confirmed animal carcinogen with unknown relevance in humans). Repeated exposure to n-butyl acetate caused fetotoxic and developmental effects in laboratory animals.

PRIMARY ROUTE(S) OF ENTRY: Skin Contact, Inhalation, Ingestion, Eye Contact

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. Give victim one or two glasses of water or milk. 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

FLASH POINT: 101 °F, 38 °C
Setaflash Closed Cup

LOWER EXPLOSIVE LIMIT (%): 0.5 %(V)
UPPER EXPLOSIVE LIMIT (%): 13.1 %(V)

AUTOIGNITION TEMPERATURE: N.D.

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

UNUSUAL FIRE AND EXPLOSION HAZARDS: Combustible liquid and vapor. During a fire, irritating and/or toxic gases and particulate may be generated by thermal decomposition or combustion. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks, open flame, and other sources of ignition. Closed containers may rupture when exposed to extreme heat. Use water spray to keep fire exposed containers cool.

SPECIAL FIREFIGHTING PROCEDURES: 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

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Keep non-essential personnel a safe distance away from the spill area. Remove all sources of ignition (flame, hot surfaces, and electrical, static or frictional sparks). Avoid breathing vapors. Use self-contained breathing equipment. Notify appropriate authorities if necessary. Contain and remove with inert absorbent material and non-sparking tools. Avoid contact. Before attempting cleanup, refer to hazard caution information in other sections of the MSDS form.

7. HANDLING AND STORAGE

HANDLING: Keep closure tight and container upright to prevent leakage. Avoid skin and eye contact. Wash thoroughly after handling. Avoid breathing of vapor or spray mists. Do not handle until all safety precautions have been read and understood. Empty containers should not be re-used. Use with adequate ventilation. Because empty containers may retain product residue and flammable vapors, keep away from heat, sparks and flame; do not cut, puncture or weld on or near the empty container. Do not smoke where this product is used or stored.

STORAGE: Do not store or use near heat, sparks, or open flame. Refer to OSHA 29CFR Part 1910.106 "Flammable and Combustible Liquids" for specific storage requirements. Store only in well-ventilated areas. Do not puncture, drag, or slide container. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Sufficient ventilation in pattern and volume should be provided in order to maintain air contaminant levels below recommended exposure limits. Caution: Solvent vapors are heavier than air and collect in lower levels of the work area.

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

ODOR:	Organic	BOILING RANGE:	126 - 192 °C
APPEARANCE:	Silver	VAPOR PRESSURE:	N.D.
PHYSICAL STATE:	Liquid	VAPOR DENSITY:	Heavier than Air
ODOR THRESHOLD:	N.D.	EVAPORATION RATE:	Slower than n-butyl-acetate
SOLUBILITY IN H2O:	Insoluble	DENSITY, LB/GL:	12.68 lb/gal
pH:	N.A.	VOLATILE BY WEIGHT:	51.20 %
FREEZE POINT:	N.D.	VOLATILE BY VOLUME:	84.27 %
COEFFICIENT OF WATER/OIL DISTRIBUTION:	N.D.		

(See section 16 for abbreviation legend)

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: High temperatures. Sources of ignition.

INCOMPATIBILITY: Strong acids, bases, and strong oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide., Silver fume.

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

STABILITY: Product is stable under normal storage conditions.

11. TOXICOLOGICAL INFORMATION

PRODUCT LD50	(ORAL)	No Data
	(DERMAL)	No Data
PRODUCT LC50		No Data

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: No Information

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

DOT PROPER SHIPPING NAME: Paint
DOT HAZARD CLASS: 3
SECONDARY HAZARD: None
DOT UN/NA NUMBER: 1263
PACKING GROUP: III
EMERGENCY RESPONSE GUIDE NUMBER: 128

The listed transportation classification applies to US DOT non-bulk road shipments. It does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors. For the most accurate shipping information, refer to your transportation/compliance department.

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: AS FOLLOWS -

This product is considered hazardous as defined by 29 CFR 1910.1200 (OSHA HazCom Standard.)

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	45.0 %
Glycol ether solvent	PROPRIETARY	25.0 %

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

HMS RATINGS - HEALTH: 2* **FLAMMABILITY:** 2 **PHYSICAL HAZARD:** 0

* - Indicates a chronic hazard; see Section 3

VOLATILE ORGANIC COMPOUNDS

Calculated: 6.49 lb/gal, 778 g/l

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

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.