

MATERIAL SAFETY DATA SHEET

CODE: M/L 1132

This Material Safety Data Sheet complies with the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200

PRODUCT NAME: COPPER PHOSPHORUS (6% Silver) BRAZING ROD

COMMON NAME OR SYNONYMS: Includes trade name products: LENOX® Brazing Rods

NFPA/HMIS HAZARD CODES: HEALTH: 2/2* FIRE: 0/0 REACTIVITY: 0/0 SPECIAL: N/A

0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

SECTION I CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMMON NAME: Silver-Copper-Phosphorus Brazing Alloy **ISSUE DATE:** October, 2007
CHEMICAL NAME: Silver-Copper-Phosphorus Brazing Alloy
FORMULA: Ag-Cu-P
PRODUCT CAS No: Chemical Mixture
PRODUCT USE: Welding/Brazing
SUPPLIER: LENOX®
ADDRESS: 1690 Lowery Street, Winston-Salem, NC 27101
PHONE: (336) 777-8600

SECTION II COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>WEIGHT %</u>
Phosphorous	7723-14-0	7.25
Silver	7440-22-4	6
Copper	7440-50-8	86.75

NOTE: The percentage by weight values reported for the ingredients in this product represent approximate formulation values.

NOTE: See Section VIII for the Exposure Limits and Section XI for the Toxicological Information.

SECTION III HAZARDOUS INFORMATION

EMERGENCY OVERVIEW: Metallic wire, rod or strip. Odorless. Flash point: not applicable. Overexposure may cause kidney and liver damage and blood disorders. May cause skin and eye irritation. May cause severe respiratory tract irritation. Overexposure to freshly formed fumes may cause flu-like illness called "metal fume fever". Harmful if swallowed. Causes gastrointestinal irritation, abdominal pain, nausea, vomiting and diarrhea. Not a fire or explosion hazard in solid form. Finely divided dust may ignite and burn rapidly when mixed with air in the proper proportions. Toxic metal fumes may be released in a fire situation.

ROUTES OF ENTRY:

EYES: Yes
SKIN: Yes
INHALATION: Yes
INGESTION: Yes

POTENTIAL HEALTH EFFECTS: Eye contact may cause irritation. Skin contact may cause irritation. Inhalation causes irritation and may cause systemic toxicity. Ingestion may cause **Copper** poisoning. Short-term overexposure may cause a flu-like illness called "metal fume fever". May cause a flu-like illness called metal fume fever. Typically begins four to twelve hours after sufficient exposure to freshly formed fumes. The first symptoms are a metallic taste, dryness and irritation of the throat. Cough and shortness of breath may occur along with headache, fatigue, nausea, vomiting, muscle and joint pain, fever and chills. The syndrome runs its course in 24-48 hours. Ingestion is harmful. May cause abdominal pain, nausea, vomiting and diarrhea. **Copper** poisoning can result in hemolytic anemia and kidney, liver and spleen damage. Overexposure to **Copper** poisoning, resulting in hemolytic anemia and liver, kidney and spleen damage. Prolonged overexposure to **Phosphorus** can cause gastrointestinal distress, garlic breath, necrosis and deformity of the jaw. Systemic effects such as cardiac, liver and kidney dysfunction may result due to prolonged inhalation of fumes. The absorption of **Silver** compounds into the circulation and the subsequent deposition of reduced silver in various tissues of the body may result in the production of a generalized grayish pigmentation of the skin and mucous membrane (argyria). There are no systemic effects or symptoms and no physical disability. Once deposited, there is no known means by which this **Silver** can be eliminated; the pigmentation is permanent.

NOTE: Health effects only apply if dust or fume is formed.

CARCINOGENICITY: Not listed by NTP, IARC or OSHA. Refer to Potential Health Effects.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

May adversely affect existing medical conditions, such as eye, skin, respiratory, blood, liver and/or kidney ailments. Individuals with Wilson's Disease are at increased risk of Copper poisoning.

NOTE: See Section VIII for Exposure Limits, Section XI for Toxicological Information and Section XII for Ecological Information.

SECTION IV FIRST AID MEASURES

EYE CONTACT: Flush eyes with plenty of water. If irritation develops, call a physician.
SKIN CONTACT: Flush with plenty of water. If irritation persists, call a physician.
INHALATION: If exposed to excessive levels of metal fumes, remove to fresh air and seek medical attention.
INGESTION: Procedures normally are not needed. If large quantities are ingested, seek medical advice.

SECTION V FIRE-FIGHTING MEASURES

FLASH POINT: Not applicable
AUTO-IGNITION: Not applicable
LEL: Not applicable
UEL: Not applicable

<u>HAZARD CLASSIFICATION</u>	<u>HEALTH</u>	<u>FLAMMABLE</u>	<u>REACTIVITY</u>
NFPA	2	0	0
HMIS	2*	0	0

*Indicates the possibility of chronic health effects. See Chronic Health Effects Hazards in Section III for more information.

EXTINGUISHING MEDIA:

Use carbon dioxide, chemical foam or dry chemical. Use any means for extinguishing surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES:

Wear NIOSH/MSHA approved positive-pressure self-contained breathing apparatus and protective clothing gas specified in 29 CFR 1910.156.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Not a fire or explosion hazard in solid form. Finely divided dust may ignite and burn rapidly when mixed with air in the proper proportions. Toxic metal fumes may be released in a fire situation.

SECTION VI ACCIDENTAL RELEASE MEASURES

Contain spillage and scoop up or vacuum. Notification of the National Response Center (800-424-8802) may be required. Refer to EPA, DOT and applicable state and local regulations for current response information.

It is recommended that each user establish a spill prevention, control and countermeasure plan (SPCC). Such plan should include procedures applicable to proper storage, control and clean-up of spills, including reuse or disposal as appropriate (See Section XI: Disposal Considerations).

NOTE: In the event of an accidental release of this material, the above procedures should be followed. Additionally proper exposure controls and personal protection equipment should be used (see Section VIII: Exposure Controls/Personal Protection) and disposal of the material should be in accordance with Section XI: Disposal Considerations.

SECTION VII HANDLING AND STORAGE

Wash thoroughly after handling. Store in cool, dry location away from incompatible materials. Avoid contact with any dusts, mists or fumes resulting from the use of this product. Do not eat, drink or smoke in work area. Use only with adequate ventilation.

SECTION VIII EXPOSURE CONTROLS & PERSONAL PROTECTION

<u>INGREDIENTS</u>	<u>CAS NO.</u>	<u>PEL-OSHA</u>	<u>TLV-ACGIH</u>
Copper	7440-50-8	0.1 MG.M3 (Fume) 1 MG.M3 (Dust)	0.2 MG.M3 (Fume) 1 MG M3 (Dust)
Silver	7440-22-4	0.1/MG/M3	0.1/MG/M3
Phosphorus	7723-14-0	0.1MG M3 AS PHOSPHOROUS -YELLOW	0.1 MG/M3 AS PHOSPHOROUS -YELLOW

NOTE: The hazards of all ingredients of this product are not known, however, exposure is not expected as the product is in solid form. The threshold limit values (TLV's) and the potential health effects statements are listed for the ingredients of the product for which data is available. However, these statements may not be applicable as the ingredients are in solid form. If dust, powder, or fume is generated then TLV's and effects of overexposure statements will be applicable. Unless otherwise noted, all values are reported as 8-hour Time-Weighted Averages (TWA's) and total dust (particulate only). All ACGIH TLV's refer to the 1992-93 Standards. All OSHA PEL's refer to 29 CFR Part 1910 Air Contaminants: Final Rule, January 19, 1989.

NOTE: As a result of the July 7, 1992 decision by the U.S. Circuit Court of Appeals (AFL-CIO v. OSHA) to vacate the 1989 PEL's, OSHA will no longer enforce these new limits and will return to the pre-1989 PEL's. Engelhard, however, will continue to list the more protective 1989 levels.

RESPIRATORY PROTECTION: A NIOSH/MSHA-approved respirator is recommended if dust is generated.

VENTILATION: General local exhaust ventilation as necessary to control any air contaminants to within their PELs or TLV's during the use this product.

PROTECTION EQUIPMENT: Refer to the ANSI/ASC Z49.1-88 (Safety in Welding and Cutting) published by The American Welding Society for further information of the selection of personal protective equipment. Safety glasses with side shields; gloves; body protection as necessary to prevent skin contact.

PERSONNEL SAMPLING PROCEDURE:

For Copper (dust & fume): Refer to NIOSH Manual of Analytical Methods (NMAM), 4th Edition, Method 7029.
For Phosphorus: Refer to NIOSH Manual of Analytical Methods (NMAM), 4th Edition, Method 7905.
For Metallic Components: Refer to NIOSH Manual of Analytical Methods (NMAM), 4th Edition, Method 7300.

SECTION IX PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: Not determined
SPECIFIC GRAVITY: (H₂O=1):7.75
MELTING POINT: 636.9 °C
% SOLUBILITY IN WATER: Insoluble
APPEARANCE: Metallic wire, rod or strip
ODOR: Odorless
PH: Not available

SECTION X STABILITY AND REACTIVITY

STABILITY: Generally considered stable
AVOID: None expected
INCOMPATIBILITY: Strong acids and bases, oxidizing agents, acetylene, magnesium metal, ammonium nitrate, and hydrogen sulfide.
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Toxic metal oxides are emitted when heated above the melting point. The amount of fume evolved increases as the temperature rises.
POLYMERIZATION: Is not expected to occur.
AVOID: Not applicable

SECTION XI TOXICOLOGICAL INFORMATION

<u>CHEMICAL NAME</u>	<u>CAS NO.</u>	<u>WEIGHT %</u>	<u>LC50</u>
Copper	7440-50-8	80 3.5 mg/kg MOUSE, intraperitoneal	Not available
Silver	7440-22-4	15 Not available	Not available
Phosphorus	7723-14-0	5 Not available	Not available

NOTE: See Section III, VIII and XII for additional information.

SECTION XII ECOLOGICAL INFORMATION

ECOTOXICITY: No data available
ENVIRONMENTAL FATE: No data available

SECTION XIII DISPOSAL CONSIDERATIONS

U.S. EPA WASTE NUMBER: D011

This product contains Silver or Silver compounds and disposal may be regulated under the EPA hazardous waste regulations, waste number D011. Before disposal, this product or mixtures containing this product should be tested for the toxicity characteristics (TC) under the current EPA Waste Regulations TCLP testing procedures, 40 CFR Part 261 et seq. Disposal/recycling/reclamation requirements will vary by location and type of disposal selected. Consult with state and local regulatory authorities.

NOTE: Chemical additions, processing or otherwise altering this material may make the waste management information presented above incomplete, inaccurate or otherwise inappropriate.
As local regulations may vary, all waste must be disposed/recycled/reclaimed in accordance with federal, state, and local environmental control regulations.

SECTION XIV TRANSPORT INFORMATION

INTERNATIONAL: Not regulated
UNITED STATES: Not regulated
EPA WASTE NUMBER: D011
DOT CLASSIFICATION: Not regulated
CANADA: Not regulated
PIN NUMBER: Not regulated
TDG CLASS: Not regulated
EC:
DGL: Not determined

SECTION XV REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

TSCA: Listed in TSCA

SARA 311 AND 312 HAZARD CATEGORIES:

Immediate (Acute) Health Hazard: Yes
Delayed (Chronic) Health Hazard: Yes
Fire Hazard: No
Reactivity Hazard: No
Sudden Release of Pressure: No

SARA SECTION 313 NOTIFICATION:

This product contains a toxic chemical (or chemicals) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>WEIGHT %</u>
Phosphorous	7723-14-0	5
Silver	7440-22-4	15
Copper	7440-50-8	80

OZONE DEPLETING SUBSTANCES (ODs)

This product neither contains nor is manufactured with an ozone depleting substance subject to the labeling requirements of the Clean Air Act Amendments 1190 and 40 CFR Part 82.

VOLATILE ORGANIC COMPOUNDS (CARB): Not determined
CANADIAN REGULATIONS: DSL/NDL: Not determined
WHMIS CLASSIFICATION: Class D Division 2 Subdivision B
EUROPEAN REGULATIONS: Not determined
OTHER REGULATIONS: Not determined
EINECS: Yes
MITI: Yes
AICS: Yes

SECTION XVI OTHER INFORMATION

VOC CONTENT: None

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