

MATERIAL SAFETY DATA SHEET

CODE: M/L 041

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

PRODUCT: LENOX® LEAD-FREE SOLDER

NFPA/HMIS HAZARD CODES: HEALTH: 1/1 FIRE: 0/0 REACTIVITY: 0/0 SPECIAL: N/A

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

SECTION I

MANUFACTURER NAME: LENOX® **ISSUE DATE:** October, 2007
 1690 Lowery Street
 Winston-Salem, NC 27101
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SECTION II HAZARDOUS INGREDIENTS

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>US-NIOSH RTECS NO.</u>	<u>US OSHA AL</u>	<u>US OSHA PEL</u>	<u>ACGIH TLV</u>	<u>WT. PERCENT</u>
Tin	7440-31-5	XP7320000	NE	2.0mg/m3	2.0mg/m3	Balance
Copper (dust) (fume)		GL5325000	NE	1.0 mg/m3	1.0 mg/mg3	4.95
Selenium	7782-49-2	VS7700000	NE	0.1 mg/m3 0.2 mg/m3	0.2 mg/m3 0.2 mg/m3	0.05

NE = NONE ESTABLISHED AL = ACTION LEVEL PEL = PERMISSIBLE EXPOSURE LIMIT TLV = THRESHOLD LIMIT VALUE

SECTION III PHYSICAL DATA

APPEARANCE & ODOR (AT NORMAL CONDITIONS): Solid - Silver to silver gray metallic metal - no odor
SPECIFIC GRAVITY (H2O=1): 7.39
MELTING POINT RANGE (DEGREES F): 419 - 425
BOILING POINT (DEGREES C): Information not available
SOLUBILITY IN WATER: Insoluble
PH: Not applicable

SECTION IV FIRE & EXPLOSION HAZARD DATA

FLASH POINT: Non-flammable
FLAMMABLE LIMITS: Not applicable
EXTINGUISHING MEDIA: No specific agents recommended
SPECIAL FIRE FIGHTING PROCEDURES: If involved in fire, use full protective clothing and NIOSHA/MSHA approved self-contained breathing apparatus operated in a positive-pressure mode.
UNUSUAL FIRE & EXPLOSION HAZARDS: The solid metal form is not a fire hazard. However, it is possible that dust generated from processing operations may present a moderate fire or explosion hazard.

SECTION V REACTIVITY DATA

STABILITY: Stable
CONDITIONS TO AVOID: Not applicable
INCOMPATIBILITY: Chlorine, Turpentine, Magnesium, and Acetylene Gas
HAZARDOUS DECOMPOSITION PRODUCTS: At temperatures above the melting point metal oxide fumes may be evolved.
HAZARDOUS POLYMERIZATION: Will not occur.

SECTION VI HEALTH HAZARD DATA

NOTE: Exposure to the solid form of this product presents few health hazards in itself. However, normal handling or processing of this material may result in exposure to product components and/or decomposition products, which may present a potential health hazard.

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ROUTES OF ENTRY: Dust/fume inhalation; dust ingestion.

SYMPTOMS & EFFECTS OF OVEREXPOSURE:

Chronic (Prolonged) Overexposure to **Tin** can result in benign pneumoconiosis (stannous). This form of pneumoconiosis produces progressive x-ray changes of the lungs as long as exposure exists, but there is no distinctive fibrosis, no evidence of disability and no special complicating factors.

Acute (severe short-term) overexposure to **Tin** dust/fume can cause irritation of the eyes, skin, mucous membranes and respiratory system. Acute overexposure to **Copper** dust/fume can cause irritation of the eyes, nose, throat and skin, and under severe fume overexposure may cause metal fume fever with flu-like symptoms such as sweet metal taste, dry throat, coughing, fever and chills, tight chest, dyspnea, headache, blurred vision, back pain, nausea, vomiting, fatigue. Symptoms usually disappear within 24 hours. **Copper** may cause skin and hair discoloration. Inhalation of copper dusts may cause changes in the gums and mucous lining in the mouth, which is generally attributable to, localized tissue effect rather than general toxicity.

MEDICAL CONDITIONS POSSIBLY

AGGRAVATED BY EXPOSURE: Pre-existing conditions of the lungs, Wilson's Disease (genetic trait).

CARCINOGENICITY: Not listed as a carcinogen by NTP, IARC, OSHA, and ACGIH

EMERGENCY & FIRST AID PROCEDURES:

- SKIN:** Normal hygiene and first aid procedures - wash with soap and water. If irritation develops or persists obtain medical attention.
- EYES:** Flush well with running water to remove particulate. If irritation persists obtain medical attention.
- ACUTE INHALATION:** Remove from exposure. Obtain immediate medical attention. If breathing has stopped, initiate artificial resuscitation.
- INGESTION:** Give water; induce vomiting only in a conscious non-convulsing individual; obtain immediate medical attention.

SECTION VII PROTECTION MEASURES

- RESPIRATORY PROTECTION:** Respiratory protection is required where airborne exposures exceed U.S. OSHA/ACGIH permissible air concentrations. Respirator selection shall be made in accordance with the U.S. OSHA Respiratory Protection Standard, 29 CFR 1910.134.
- VENTILATION:** Ventilation, as described in "Industrial Ventilation, A Manual of Recommended Practice", by the American Conference of Governmental Industrial Hygienists, is recommended to maintain exposure levels below the Permissible Exposure Limits (PEL's) or Threshold Limit Values (TLV's) specified by U.S. OSHA or other local or state regulations.
- PROTECTIVE GLOVES:** Recommended for prolonged contact/heat.
- EYE PROTECTION:** Safety glasses or goggles are recommended where the possibility exists of getting dust particles in the eyes. Safety glasses or goggles with face shield are recommended around molten metal.
- OTHER PROTECTIVE EQUIPMENT:** Safety equipment should be worn as appropriate for the work environment.
- WORK/HYGIENIC PRACTICES:** Do not permit eating, drinking, or the use of cosmetics or tobacco products while handling or processing material or in solder work areas. Practice good oral hygiene procedures. Wash hands and face thoroughly before eating, drinking, applying cosmetics or using tobacco products. Avoid inhalation and ingestion of product, and activities, which generate dust or fume. Keep melting/soldering temperatures as low as possible to minimize the generation of fume.

SECTION VIII PRECAUTIONS FOR SAFE HANDLING & USE

- PRECAUTIONS TO BE TAKEN**
- IN HANDLING & STORING:** Practice good housekeeping procedures to prevent dust accumulations. Keep material dry. Avoid storage near incompatible materials (See Section V). Keep product away from children and their environment and domestic animals.
- OTHER PRECAUTIONS:** Special attention is drawn to the requirements of the U.S. OSHA Respirator 1910.134 should airborne exposures exceed the U.S. OSHA PEL. Inadvertant contaminants to product such as moisture, ice, snow, grease or oil can cause an explosion when charged to a molten metal bath or melting furnace (preheating metal will remove moisture from the product).

SECTION IX SPILL OR LEAK PROCEDURES

- SPILL OR LEAK PROCEDURES:**
 1. Material in dust form-minimize exposure. Clean up using dustless methods (i.e. HEPA Vacuum). Do not use compressed air.
 2. Place in closed labeled containers for recycling or disposal.
 3. Keep out of waterways.
- NOTE:** Cleanup personnel should wear protective clothing and respiratory protection where significant dust/fume exposure exists.

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