

**MATERIAL SAFETY DATA SHEET**

CODE: M/L 043

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

**PRODUCT: LENOX® ACID CORE 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®  
1690 Lowery Street  
Winston-Salem, NC 27101  
**ISSUE DATE:** October, 2004  
**INFORMATION PHONE:** 336-777-8600

**SECTION II HAZARDOUS INGREDIENTS**

| INGREDIENT       | CAS NO.           | US-NIOSH<br>RTECS NO. | US OSHA<br>AL | US OSHA<br>PEL | ACGIH<br>TLV | APPROX.<br>VOL. % <sup>(*)</sup> | WT.<br>PERCENT <sup>(*)</sup> |
|------------------|-------------------|-----------------------|---------------|----------------|--------------|----------------------------------|-------------------------------|
| <b>SOLDER</b>    | <b>COMPONENTS</b> | >>>>>>>>              | >>>>>>>>      | >>>>>>>>       | >>>>>>>>     | 97.0                             |                               |
| Tin              | 7440-31-5         | XP7320000             | NE            | 2.0mg/mg3      | 2.0mg/mg3    |                                  | Balance                       |
| Copper<br>(dust) | 7440-50-8         | GL5325000             | NE            | 1.0mg/mg3      | 1.0mg/mg3    |                                  | 3.0 – 4.0                     |
| (fume)           |                   |                       |               | 0.1mg/m3       | 0.1mg/m3     |                                  |                               |
| <b>CORE</b>      | <b>COMPONENTS</b> | >>>>>>>>              | >>>>>>>>      | >>>>>>>>       | >>>>>>>>     | 3.0 <sup>(*)</sup>               |                               |
| Urea             | 57-13-6           | NK                    | NE            | NE             | NE           | 2.6                              |                               |

**NOTES:** \*1 = Product volume formulation is relatively constant.

\*2 = Product weight formulation is to customer specification and appears on product packaging or packing slip.

\*3 = Remaining constituents, by volume, are inert or constitute less than the declaratory reporting threshold.

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: Contains core of white powder.  
**SPECIFIC GRAVITY (H20=1):** No information available  
**MELTING POINT RANGE (DEGREES F):** 227-250 (441-482 Degree F)  
**BOILING POINT (DEGREES C):** No information available  
**SOLUBILITY IN WATER:** Insoluble

**SECTION IV FIRE & EXPLOSION HAZARD DATA**

**FLASH POINT:** Non-flammable  
**FLAMMABLE LIMITS:** Not applicable  
**EXTINGUISHING MEDIA:** No specific agents available  
**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, dust generated from processing operations may present a moderate fire or explosion hazard.

## SECTION V REACTIVITY DATA

|  |  |
|--|--|
| <b>STABILITY:</b>                        | Stable   |
| <b>CONDITIONS TO AVOID:</b>              | Not applicable   |
| <b>INCOMPATIBILITY:</b>                  | Chlorine, Turpentine, Magnesium, and Acetylene Gas.                      |
| <b>HAZARDOUS DECOMPOSITION PRODUCTS:</b> | At temperatures above the melting point metal oxide fume may be evolved. |
| <b>HAZARDOUS POLYMERIZATION:</b>         | 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 health hazard.

**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** can cause irritation of the eyes, skin, mucous membranes and respiratory system. Acute overexposure to **Copper** 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).

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

### **EMERGENCY & FIRST AID PROCEDURES:**

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

## SECTION VII PROTECTION MEASURES

|                                    |  |
|------------------------------------|--|
| <b>RESPIRATORY PROTECTION:</b>     | 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.   |
| <b>VENTILATION:</b>                | Good general ventilation, or 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.   |
| <b>PROTECTIVE GLOVES:</b>          | Recommended for prolonged contact/heat.  |
| <b>EYE PROTECTION:</b>             | 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.  |
| <b>OTHER PROTECTIVE EQUIPMENT:</b> | Safety equipment should be worn as appropriate for the work environment.   |
| <b>WORK/HYGIENIC PRACTICES:</b>    | 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 personal 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

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|   |     |
|---|-----|
| <b>HAZARD CLASS:</b>                    | N/A |
| <b>UN NO.:</b>                          | N/A |
| <b>PACKING GROUP:</b>                   | N/A |
| <b>EMERGENCY RESPONSE GUIDE NUMBER:</b> | N/A |
| <b>OTHER:</b>                           | N/A |

### SECTION XIII ADDITIONAL INFORMATION

**VOC CONTENT:** None

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