



MATERIAL SAFETY DATA SHEET

CODE: M/L 1116

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

PRODUCT: BERNZOMATIC LEAD-FREE SILVER BEARING SOLDER; TIN/COPPER/SILVER ROSIN CORE SOLDER ALLOYS (TCI-107-2)

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

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

SECTION I

MANUFACTURERS NAME: Lenox **ISSUE DATE:** October 2004
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SECTION II HAZARDOUS INGREDIENTS

INGREDIENT	CAS NO.	US-NIOSH RTECS NO.	US OSHA AL	US OSHA PEL	ACGIH TLV	APPROX. VOL. % ^(*)	WT. PERCENT ^(*)
SOLDER	COMPONENTS	>>>>>>>>	>>>>>>>>	>>>>>>>>	>>>>>>>>	97.0	
Tin	7440-31-5	XP7320000	NE	2.0 mg/m3	2.0 mg/m3		Balance
Copper (dust) (fume)	7440-50-8	GL5325000	NE	1.0mg/m3 0.1mg/m3	1.0mg/m3 0.2mg/m3		3.0-4.0
Silver CORE	7440-22-4 COMPONENTS	VW3500000	NE	0.01 mg/m3	0.1 mg/m3		<1.0
		>>>>>>>>	>>>>>>>>	>>>>>>>>	>>>>>>>>	2.0-2.5 ^(*)	
Rosin	65997-06-0	NK	NE	0.1mg//m3 ^(*)	0.2 mg/m3 ^(*)	2.5	1.0-6.0

- NOTES:** *1-Product formulation is to customer specification and appears on product packaging or packing slip.
*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.
*4- Aliphatic Aldehydes, measured as formaldehyde (CAS #50-00-0; RTECS #LP89250000), best indicator of rosin pyrolysis products.

NE=NONE ESTABLISHED AL=ACTION LEVEL PEL=PERMISSIBLE EXPOSURE LIMIT TLV=THRESHOLD LIMIT VALUE
NK=NOT KNOWN

SECTION III PHYSICAL DATA

APPEARANCE & ODOR (AT NORMAL CONDITIONS): Solid - silver to silver gray metallic metal- No odor: Contains core of light yellow color with rosin odor.
SPECIFIC GRAVITY (H20=1): Information not available
MELTING POINT RANGE (DEGREES F): 227-250 (441-482 Degree F)
BOILING POINT (DEGREES C): Information not available
SOLUBILITY IN WATER: Insoluble

SECTION IV FIRE AND 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 NIOSH/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

SECTION V REACTIVITY DATA

STABILITY:	Stable
CONDITIONS TO AVOID:	Not Applicable
INCOMPATIBILITY:	Chlorine, Turpentine, and 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 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 linings of the mouth, which is generally attributable to localized tissue effect rather than general toxicity. Acute overexposure to **rosin** pyrolysis products is characterized by irritation of the eyes, nose, throat, and cough.

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 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 US-OSHA/ACGIH permissible air concentrations. Respirator selection shall be made in accordance with the US OSHA Respiratory Protection Standard, 29CFR 1910.134.
VENTILATION:	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 US-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 personal hygiene procedures. Wash hands and face thoroughly before eating, drinking, applying cosmetics or using tobacco products. Keep melting/soldering temperatures as low as possible to minimize the generation of fumes.

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.

SECTION XIII ADDITIONAL INFORMATION

VOC CONTENT: NONE

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