

MATERIAL SAFETY DATA SHEET

CODE M/L 1116

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

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

COMMON NAME OF SYNONYMS: Tin/Copper/Silver formulation (<1% silver content) solders or alloys in the following forms: wire with acid flux core.

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: Taracorp Imaco, Inc. **PREPARATION DATE:** February 25, 2005
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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>APPROX. VOL. %</u> ^{(*)1}	<u>WT. PERCENT</u> ^{(*)2}
Tin	7440-31-5	XP7320000	NE	2.0mg/m3	2.0mg/m3		Balance
Copper (dust) (fume)	7440-50-8	GL5325000	NE	1.0 mg/m3 0.1 mg/m3	1.0 mg/mg3 0.1 mg/m3		1.0-10.0
Silver	7440-22-4	VW3500000	NE	0.01 mg/m3	0.1 mg/m3		<1.0
CORE COMPONENTS		>>>>>>>>	>>>>>>>	>>>>>>>	>>>>>>>	2.0-2.5 ^{(*)3}	
Rosin	65997-06-0	NK	NE	0.1mg/m3 ^{(*)4}	2.5 ^{(*)4}		1.0-6.0

NOTES: *1-Product volume formulation is relatively constant.
 *2-Product formulation is to customer specification and appears on product packaging and/or packing slip.
 *3-Remaining constituents, by volume, are inert or constitute less than the declaratory reporting threshold.
 *4-As formaldehyde (CAS #50-00-0; RTECS #LP8925000), a rosin core solder pyrolysis product indicator.

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

SECTION III PHYSICAL DATA

APPEARANCE & ODOR (AT NORMAL CONDITIONS)
SPECIFIC GRAVITY (H2O=1): Solid - silver to silver gray metallic metal- No odor
MELTING POINT RANGE (DEGREES F): 7.39
BOILING POINT (DEGREES C): 227-250 (441-482 Degrees F)
SOLUBILITY IN WATER: Information not available
EVAPORATION RATE (BUTYL ACETATE=1): Insoluble
VAPOR DENSITY (AIR=1): Not applicable
VAPOR PRESSURE (mmHg): Not applicable
PH: Not applicable

SECTION IV 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

STABILITY: Stable

Rev 002
 Date: 2/25/05

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 the generation of tin and copper dusts and/or fumes, which may present a health hazard.

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

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** dusts or fumes can 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 of 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 procedures - wash with soap and water. If rash develops get medical attention.

EYES: Flush well with running water to remove particulate. If irritation persists get medical attention.

INHALATION: Remove from exposure. Get medical attention.

INGESTION: Give water; induce vomiting in a conscious individual; 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: 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. Required above the lead PEL.

EYE PROTECTION: Safety glasses or goggles are recommended where the possibility exists of getting dust particles in the eyes. Safety glasses with face shield are recommended around molten metal.

OTHER PROTECTIVE EQUIPMENT: Safety equipment should be worn as appropriate for the work environment. Full protective clothing and shoes are required for employee exposure above the lead PEL. Other safety equipment should be worn as appropriate for the work environment. Keep work clothing separate from street clothes.

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. Full protective clothing is required to worn by workers exposed to concentrations of lead/dust fume above the PEL, and showering is required before changing into street clothes. 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 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.

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.

SECTION IX SPILL OR LEAK PROCEDURES

SPILL OR LEAK PROCEDURES:

1. Material in dust form-minimize exposure. Clean up using dustless methods (i.e. 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.

OTHER PROCEDURES

We recommend that the purchaser establish a spill prevention, control and counter measure plan. This plan should include procedures for proper storage as well as clean up of spills or leaks. The procedures should conform to safe practices and provide for proper recovery and/or disposal. Depending on the quantity spilled, notification to the U.S. National Response Center (800-424-8802) may be required in case of hazardous substances. (See USEPA and USDOT regulations: also various state and local regulations.)

WATER DISPOSAL METHODS: May have value on a recycled basis. If disposed of, dispose of in a permitted disposal site in accordance with all federal, state and local disposal or discharge regulations

SECTION X UNITED STATES SARA TITLE III INFORMATION

This product/mixture contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of title III of the U.S. Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372. The percent by weight of each toxic chemical and its associated chemical abstract system (CAS) number are to found in Section II of this Material Safety Data Sheet.

<u>CHEMICAL NAME</u>	<u>EHS RQ (LBS)</u>	<u>EHS TPQ (LBS)</u>	<u>SEC.313</u>	<u>313 CATEGORY</u>	<u>311-312 CATEGORIES</u>
	(*1)	(*2)	(*3)	(*4)	(*5)
	Not Applicable	Not Applicable	Yes	Copper	H-1

-FOOTNOTES-

- *1= Reportable quantity of extremely hazardous substance, Section 302.
- *2= Threshold planning quantity, extremely hazardous substance, Section 302.
- *3= Toxic chemical list, Section 313
- *4= Chemical category as required by Section 313 (40 CFR 372.42). Subject to annual release reporting requirements.
- *5= Hazard category for SARA Section 311/312 reporting:

Health	H-1=Immediate (ACUTE) Health Hazard	Physical	P-3= Fire Hazard
	H-2=Delayed (CHRONIC) Health Hazard		P-4= Sudden Release of Pressure Hazard
			P-5= Reactive Hazard

SECTION XI UNITED STATES CERCLA SECTION 103 INFORMATION

This product/mixture contains the following chemicals subject to the release reporting of Section 302.

<u>CHEMICAL NAME</u>	<u>RQ (LBS)</u>
	(*1)
Copper	5000

-FOOTNOTES-

*1= Reportable quantity (RQ) under CERCLA Section 302. Spills to the environment exceeding the reportable quantity in any 24-hour period must be reported to the U.S. National Response Center (800) 424-8802. No reporting of releases of the hazardous substance(s) is required if the diameter of the pieces of the solid metal(s) released is equal to or exceeds 100 micrometers (0.004 inches).

SECTION XII USDOT TRANSPORTATION INFORMATION (172.101)

DOT SHIPPING NAME: This product is not regulated by the USDOT as shipped.
 HAZARD CLASS: NOT APPLICABLE
 UN/ID NO.: NOT APPLICABLE
 DOT LABEL (S): NOT APPLICABLE

SECTION XIII ADDITIONAL INFORMATION

NO ADDITIONAL INFORMATION

This Material Safety Data Sheet is offered solely for your information, consideration and investigation. Taracorp Imaco, Inc. provides no warranties, either express or implied, and assumes no responsibilities for the accuracy or completeness of the data contained in this document. The data in this Material Safety Data Sheet relates only to this product and does not relate to use in combination with any other material or in any process.