

MATERIAL SAFETY DATA SHEET

CODE: M/L 030

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


**PRODUCT: TIN/ANTIMONY SOLDER ALLOY
(Fabrications/Forms)**

COMMON NAME OR SYNONYMS: Tin/Antimony formulations in the following forms: wire, ingot, pig, sheet, anodes, cast or extruded bar and miscellaneous extruded lines.

INCLUDES TRADE NAME PRODUCTS: LENOX® 95% SN/5%

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

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

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 (Sn)	7440-31-5	XP7320000	NE	2.0 mg/m3	2.0 mg/m3	90.0-98.0
Antimony (Sb)	7440-36-0	CC4025000	NE	0.5 mg/m3	0.5 mg/m3	2.0-10.0

NOTE: Product formulation is to customer specification and appears on product packaging or packing slip.

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): 5.77-5.84
MELTING POINT RANGE (DEGREES F): Alloy specific dependent: Tin-232 Antimony-630
BOILING POINT (DEGREES C): Alloy specific dependent: Tin-2260 Antimony-1380
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 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, 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, Strong Acids, bases, nascent hydrogen, reducing agents, chlorine, fluorine and bromine. NEVER mix molten metal with water- it will explode. NEVER put product, by-products, dust or product waste into galvanized or aluminum containers.
HAZARDOUS DECOMPOSITION PRODUCTS:	At temperatures above the melting point metal oxide fumes may be evolved. Under reducing conditions, such as any strong acid or base plus an active metal, or in the presence of nascent hydrogen, highly toxic stibine gas (TLV=0.10 ppm) 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:	<p>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. Chronic overexposure to Antimony can lead to liver and kidney damage and central nervous system disorders. Antimony can cause eye and skin irritation and dermatitis.</p> <p>Acute (severe short-term) overexposure to Tin can cause irritation of the eyes, skin, mucous membranes and respiratory system. Acute overexposure to Antimony can cause upper respiratory tract irritation and systematic antimony poisoning with symptoms including abdominal cramps, nausea, dizziness, dry throat and various nervous complaints, such as sleeplessness, irritability and muscular pains. Repeated skin contact with antimony may result in dermatitis, and eye contact may cause severe eye irritation.</p>
MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:	Pre-existing conditions of the lungs, diseases of the kidneys, liver and nervous systems.
CARCINOGENITY:	Not listed as a carcinogen by NTP, IARC, OSHA, and ACGIH.
ADDITIONAL INFORMATION:	<p>In industrial/commercial processing operations, pre-employment medical evaluations are recommended for large users of this product. Attention should be directed to skin, eyes, respiratory tract, blood, kidneys, pulmonary function and neurological health.</p> <p>Periodic medical examinations should be repeated on an annual basis for those employees exposed to potentially hazardous levels of this product.</p> <p>Some animal studies indicate that inhalation of antimony trioxide fume may pose an increased risk of lung cancer. ACGIH identifies antimony trioxide as a Class A2 carcinogen (suspected human carcinogen). IARC classifies antimony trioxide as a Group 2B carcinogen (possibly carcinogenic to humans).</p>
EMERGENCY & FIRST AID PROCEDURES:	
SKIN:	Normal hygiene and first aid procedures - wash with soap and water. If irritation or rash 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 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:	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.
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 and where excessive metal dust exposure exists.
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 product 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

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, feed products, food products, and domestic animals. Do NOT place product, by-products, dust or product waste into galvanized or aluminum containers.
OTHER PRECAUTIONS:	Special attention is drawn to the requirements of the U.S. OSHA Respirator Standard 1910.134 should airborne exposures exceed the U.S. OSHA Action Level (AL) or (PEL). Inadvertent 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 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.

OTHER PROCEDURES: For large product users or involving large product quantities, 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 states and local regulations.)

WASTE 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.

