

SMT International, LLC

MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Solder Powder containing Antimony, Bismuth, Copper, Indium, Lead, Nickel, Silver, and Tin
SYNONYMS: Powder

MANUFACTURER: Gesick MPM, Inc
ADDRESS: 500 Main Street Unit 8 Deep River, CT 06417 USA
PHONE: 860-526-8300
FAX: 860-526-8243
EMERGENCY: Infotrac-(800)535-5035

CHEMICAL NAME: N/A
CHEMICAL FAMILY: Inorganic Metals
CHEMICAL FORMULA: N/A

REVISION DATE: December 7, 2010
DOCUMENT NAME: MSDS-Alloys-002

SECTION 1 NOTES: Non-Hazardous Material

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

| <u>Ingredient</u> | <u>CAS Number</u> | <u>OSHA PEL</u> | <u>ACGIH TLV</u> |
|-------------------|-------------------|------------------------|------------------------|
| Lead | 7439-92-1 | 0.05 MG/M ³ | 0.15 MG/M ³ |
| Tin | 7440-31-5 | 2.0 MG/M ³ | 2.0 MG/M ³ |
| Silver | 7440-22-4 | 0.01 MG/M ³ | 0.1 MG/M ³ |
| Bismuth | 7440-69-9 | Not Established | Not Established |
| Antimony | 7440-36-0 | 0.5 MG/M ³ | 0.5 MG/M ³ |
| Nickel | 7440-02-0 | 1.0 Mg./Cu. M. | 1.0 Mg./Cu. M. |
| Indium | 7440-74-6 | Not Established | 0.1 MG/M ³ |
| Copper | 7440-50-8 | 1.0 Mg./Cu. M. | 1.0 Mg./Cu. M. |

SECTION 2 NOTES:
Product contains one or more of these metallic elements in varying percentages.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Moderate eye irritant, will not burn. Toxic by inhalation. Gastrointestinal and respiratory tract irritant. May cause skin irritation.

ROUTES OF ENTRY: Inhalation, Ingestion, Skin/Eye Contact

Target Organs: Blood; Kidneys; Skin; Respiratory System; Nasal; Septum; Liver; Eyes

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:
Diseases of the blood-forming organs, kidneys, nervous and possibly reproductive systems.

POTENTIAL HEALTH EFFECTS

Eye Contact: May cause moderate irritation, tearing, and reddening. Contact with fumes from molten metal may cause irritation.

Inhalation: Inhalation of fumes or dust may cause local irritation to the respiratory system, dizziness, weakness, fatigue, nausea, and/or headache.

Skin Contact: May cause mild skin irritation.

Ingestion: Harmful if swallowed. May cause irritation to the mouth, throat, and stomach. May cause abdominal discomfort, nausea, vomiting, and/or diarrhea.

POTENTIAL HEALTH EFFECTS (CHRONIC)

Tin: Dust or fumes may cause irritation of the skin mucous membranes and may result in a benign Pneumoconiosis (Stannosis).

Silver: May cause discoloration of eyes and skin (Argyria).

Bismuth: May cause foul breath, a blue-black line on the gums, and Stomatitis.

Antimony: May cause gastrointestinal upset, sleeplessness, irritability, and muscular pain.

Indium: May cause weight loss, pulmonary edema, blood damage and degenerative changes in liver and kidneys.

CHRONIC/ ACUTE HEALTH HAZARDS: Women of child-bearing age should avoid exposure to lead and its inorganic compounds due to post-natal effects. Lead can cause potential injury to a developing fetus and possible effects on reproduction. Exposure to high levels of airborne or ingested lead may produce symptoms of anemia, weakness, constipation, nausea, and abdominal pain. Prolonged exposure may result in kidney and/or nervous system involvement.

POTENTIAL HEALTH EFFECTS (Overexposure):

Tin: Dust or fumes may cause irritation of the skin mucous membranes and may result in a benign Pneumoconiosis (Stannosis).

Silver: May cause discoloration of eyes and skin (Argyria).

SECTION 3: HAZARDS IDENTIFICATION (continued)

Bismuth: May cause foul breath, a blue-black line on the gums, and Stomatitis.

Antimony: May cause gastrointestinal upset, sleeplessness, irritability, and muscular pain.

Indium: May cause weight loss, pulmonary edema, blood damage and degenerative changes in liver and kidneys.

CARCINOGENICITY:

OSHA: N/A

ACGIH: N/A

NTP: N/A

IARC: Lead (Pb)-Group 2B

SECTION 3 NOTES:

SMT International, LLC does not recommend, manufacture, market, or endorse any of its products for human consumption.

Chronic Toxicity-Proposition 65, State of California: Warning! This product contains lead, known to the state of California to cause birth defects or other reproductive harm.

SECTION 4: FIRST AID MEASURES

EYES: Flush with water, contact a physician. Dust and/or fumes may cause irritation. If contact lenses can be removed easily, flush eyes without contact lenses.

SKIN: For hot metal burns, exposed area should be cooled with water and medical attention sought. After handling material wash hands thoroughly with soap and water. Dust, vapor, and/or fumes are not readily absorbed through the skin.

INGESTION: Call a physician or Poison Control Center immediately. Do not induce vomiting.

INHALATION:

Lead: Excessive overexposure may result in an acute or chronic illness. If symptoms are present, the individual should be immediately removed from exposure and a physician consulted.

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR:

N/A

FLASH POINT:

N/A (°F/°C)

AUTOIGNITION TEMPERATURE:

N/A (°F/°C)

EXTINGUISHING MEDIA:

Use extinguishers appropriate for conditions

SPECIAL FIRE FIGHTING PROCEDURES: Use NIOSH-approved self-contained Breathing Apparatus and full protective clothing if involved in a fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Moderate in the form of dust when exposed to heat or flame. When heated to high temperatures, lead emits highly toxic fumes.

HAZARDOUS DECOMPOSITION PRODUCTS: Lead oxide fumes and/or Lead particulate may be evolved.

SECTION 5 NOTES:

Molten solder alloys consisting of Antimony, Bismuth, Copper, Indium, Lead, Silver, and/or Tin do not produce significant quantities of fumes below 900° F.

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: Material is non-hazardous. Follow directions listed under HANDLING/STORAGE.

SECTION 6 NOTES:

See Sections 3, 4, and 7 for additional information.

SECTION 7: HANDLING AND STORAGE

HANDLING/STORAGE: Avoid inhalation of solder fumes or dust. Vacuuming is recommended. Do not use dry sweeping or compressed air cleaning systems. Wear protective gloves to pick up solid metal pieces. Dispose of following Federal/Provincial, State, and Local regulations. Metal may have reclaim value.

OTHER PRECAUTIONS: Empty containers may retain product residues in vapor, liquid, and/or solid form. All labeled hazard precautions must be observed.

SECTION 7 NOTES:

For industrial use only.

Keep out of reach of children.

Not for internal consumption.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION: Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLVs.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

RESPIRATORY PROTECTION: A NIOSH-approved dust/fume respirator should be worn when applicable limits may be exceeded.

EYE PROTECTION: Safety glasses and/or face protection is recommended for exposures where there is a risk of dust or hot metal splashing.

SKIN PROTECTION: Protective gloves should be worn to reduce burn exposure. Disposable gloves are recommended to minimize direct exposure to material.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Work clothes should be worn and laundered in accordance with current OSHA Lead (Pb) standards.

WORK HYGIENIC PRACTICES: Cosmetics/Food/Drink/Tobacco should not be consumed or used in areas where solder powder may be used. Always wash hands after handling solder powder and before applying or using cosmetics/food/drink/tobacco.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---------------------------------------|
| APPEARANCE: | Silver-gray metal, powder form |
| ODOR: | Odorless |
| PHYSICAL STATE: | Solid |
| pH as SUPPLIED: | N/A |
| BOILING POINT: | Varies |
| MELTING POINT: | Varies |
| FREEZING POINT: | Varies |
| VAPOR PRESSURE (mmHg): | N/A (°F/°C) |
| VAPOR DENSITY (AIR = 1): | N/A (°F/°C) |
| SPECIFIC GRAVITY (H₂O = 1): | Varies according to alloy composition |
| EVAPORATION RATE: | N/A |
| SOLUBILITY IN WATER: | Insoluble |
| PERCENT SOLIDS BY WEIGHT: | Varies according to alloy composition |
| PERCENT VOLATILE: | N/A (°F/°C) |
| VOLATILE ORGANIC COMPOUNDS (VOC): | N/A (°F/°C) |
| MOLECULAR WEIGHT: | N/A |
| VISCOSITY: | N/A (°F/°C) |

SECTION 9 NOTES: Some typical alloy compositions are:

| | |
|---------------------------------|--------------------------------|
| 63% Tin/37% Lead | 62%Tin/36%Lead/2%Silver |
| 96.5% Tin/3% Silver/0.5% Copper | 10%Tin/90%Lead |
| 95% Tin/5% Antimony | 95.5%Tin/4.0%Silver/0.5%Copper |
| 42%Tin/58% Bismuth | |

SECTION 10: STABILITY AND REACTIVITY

| | |
|--|--|
| STABILITY: | Stable |
| CONDITIONS TO AVOID (STABILITY): | Not established |
| INCOMPATIBILITY (MATERIAL TO AVOID): | Oxidizing materials, acids, hydrogen peroxide |
| HAZARDOUS DECOMPOSITION/BY-PRODUCTS: | Lead oxide fumes and/or Lead particulate may be evolved. |
| HAZARDOUS POLYMERIZATION: | Will not occur |
| CONDITIONS TO AVOID (POLYMERIZATION): | N/A |

SECTION 11: TOXICOLOGICAL INFORMATION

Carcinogenicity: None known. Lead is listed as a possible carcinogen.

Irritancy of Product: Not established

Sensitization to Product: Not established

SECTION 12: ECOLOGICAL INFORMATION

Environmental: Lead: If this is released or deposited on soil it generally will remain in the top 2-5cm of soil.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Scrap and waste solder should be recycled or stored in a dry, sealed container for later disposal. Disposal must be in accordance with standards, regulations, laws, and statutes set forth by Federal, State/Provincial, and Local Regulations.

SECTION 14: TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements.

| | |
|--|---|
| US DOT Hazardous Material Classification: | Solder Powder is not listed as a DOT hazardous material |
| Water Transportation: | Solder Powder is not listed as a hazardous material |
| IATA Hazardous Material Classification: | Solder Powder is not listed as IATA hazardous material |

SECTION 15: REGULATORY INFORMATION

All ingredients are listed on the EPA TSCA Inventory. Finished product is not listed on the EPA TSCA Inventory

| | |
|-----------------------------------|---|
| U.S. FEDERAL REGULATIONS: | N/A, finished material is non-hazardous |
| STATE REGULATIONS: | N/A, finished material is non-hazardous |
| INTERNATIONAL REGULATIONS: | N/A, finished material is non-hazardous |

SECTION 16: OTHER INFORMATION

HMIS Rating: Health=1 Flammability=1 Physical Hazard=0 Personal Protection=X

PREPARATION INFORMATION:

This update supersedes all previously released documents.

DISCLAIMER:

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