

SMT International, LLC
MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Manufactured for Chip Quik, Inc.

PRODUCT NAME: Amtech Solder Paste, Series: 200, 500, 4000, SynTECH, #31
SYNONYMS: **Paste, Solder Cream Lead-Free Water Washable Pt# SMD4300SNL10**

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CHEMICAL NAME: N/A
CHEMICAL FAMILY: Mixture
CHEMICAL FORMULA: Proprietary

REVISION DATE: December 17, 2010
DOCUMENT NAME: MSDS-Paste-011

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

| Hazardous Ingredients ⁽¹⁾ | C.A.S. Number | Weight Percent | OSHA PEL mg/m ³ | ACGIH TLV TWA mg/m ³ | LD 50 Ingested g/Kg | LD 50 Inhaled g/m ³ |
|---------------------------------------|---------------|--|----------------------------|---------------------------------|---------------------|--------------------------------|
| Modified Rosins ⁽²⁾ | NA | <45 | NE | NE | NE | NE |
| Mixed Carboxylic Acids ⁽²⁾ | NA | <4 | NE | NE | NE | NE |
| Lead | 7439-92-1 | Product contains one or more of these metallic elements in varying percentages | 0.05 | 0.15 | NE | NE |
| Tin | 7440-31-5 | | 2.00 | 2.00 | NE | NE |
| Silver | 7440-22-4 | | 0.01 | 0.10 | NE | NE |
| Bismuth | 7440-69-9 | | NE | NE | NE | NE |
| Antimony | 7440-36-0 | | 0.50 | 0.50 | 7.0 Rat | NE |
| Indium | 7440-74-6 | | NE | 0.10 | NE | NE |
| Copper | 7440-50-8 | | 1.00 | 1.00 | NE | NE |

| Non-Hazardous Ingredients | | | | | | |
|---------------------------|----|----|---|--|--|--|
| Surfactants | NA | <4 | OSHA: Occupational Safety and Health Administration PEL: Permissible Exposure Limit ACGIH: American Conference of Gov. Indus. Hygienists TLV: Threshold Limit Values STEL: Short-Term Exposure Limit TWA: Time Weighted Average C.A.S.: Chemical Abstract Service | | | |
| Rheological Modifier | NA | <5 | | | | |
| | | | | | | |
| | | | | | | |

SECTION 2 NOTES:

(1) Per 29 CFR 1910 the mixture has not been tested as a whole. All hazardous components, which comprise 1% of the mixture (0.1% carcinogenic), are listed. Percentages of individual components are not listed as this information is considered a trade secret.

(2) The identity of the specific chemical(s) is being withheld as a trade secret per 29 CFR 1910.1200. The hazardous properties of these ingredients are disclosed in this MSDS.

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

SECTION 3: HAZARDS IDENTIFICATION (continued)

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.

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 and 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).

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: Lead: 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.

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. Seek medical attention if irritation persists.

SKIN: After handling material wash hands thoroughly with soap and water. Dust, vapor, and/or fumes are not readily absorbed through the skin. If irritation persists, obtain medical attention.

INGESTION: Seek medical attention immediately. Do not induce vomiting.

INHALATION: Remove to fresh air. If breathing is difficult, seek immediate medical attention.

OTHER: 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: 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

PRECAUTIONS AND EQUIPMENT: Material is extremely thick and will not flow out.

SECTION 6: ACCIDENTAL RELEASE MEASURES (continued)

ACCIDENTAL RELEASE MEASURES: If material spills or leaks use a spatula to collect spilled paste and place it in a plastic or glass jar. Remove traces of paste residue using cloth rags or paper towels moistened with Isopropyl Alcohol. Exposure to spilled material may be irritating. Follow on-site personal protective equipment recommendations.

SECTION 6 NOTES:

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

SECTION 7: HANDLING AND STORAGE

HANDLING: Keep containers tightly closed when not in use. Use care to avoid spills. Wear appropriate personal protective equipment when working with or handling solder paste. Always wash hands thoroughly after handling this product. Dispose of following Federal, State/Provincial, and Local regulations.

STORAGE: Store product in tightly capped original containers in a cool, dry place. Keep away from food and drinking water. Keep away from heat and flames.

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

ENGINEERING CONTROLS: Use only with production equipment designed for use with solder paste.

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

RESPIRATORY PROTECTION: A NIOSH-approved air-purifying respirator with fume/organic chemical cartridge should be worn when airborne concentrations may be exceeded. General and local exhaust ventilation is the preferred means of protection.

EYE PROTECTION: Safety glasses are recommended to prevent contact with the eyes.

SKIN PROTECTION: Protective gloves should be worn when the possibility of skin contact exists.

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 products may be used. Always wash hands after handling soldering products and before applying or using cosmetics/food/drink/tobacco.

OTHER: Maintain eye wash stations in work areas. Avoid the use of contact lenses in high fume areas. Clean protective equipment regularly. Clean up spills immediately.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---------------------------------------|
| APPEARANCE: | Gray colored paste |
| ODOR: | Mild odor |
| 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): | N/A |
| 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: PHYSICAL AND CHEMICAL PROPERTIES (continued)

SECTION 9 NOTES:

Other physical and chemical properties depend on alloy composition.

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, bases |
| HAZARDOUS DECOMPOSITION/BY-PRODUCTS: | Lead oxide fumes and/or Lead particulate may be evolved. |
| HAZARDOUS POLYMERIZATION: | Will not occur |
| CONDITIONS TO AVOID (POLYMERIZATION): | Not established |

SECTION 11: TOXICOLOGICAL INFORMATION

IRRITANCY OF PRODUCT: Not established

SENSITIZATION TO PRODUCT: Not established

SECTION 11 NOTES:

This product has not been tested as a whole to determine its hazards. Synergistic or additive effects of the above chemicals are unknown, as are the effects of exposure to these chemicals in addition to others present in the work place. See Section 3 for additional health hazards.

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 products 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 Paste is not listed as a DOT hazardous material |
| WATER TRANSPORTATION: | Solder Paste is not listed as a hazardous material |
| IATA HAZARDOUS MATERIAL CLASSIFICATION: | Solder Paste is not listed as IATA hazardous material |

SECTION 15: REGULATORY INFORMATION

The information contained in this MSDS meets the requirements of OSHA regulation 29 CFR 1910.1200. All components of this product are on the EPA TSCA inventory list.

SECTION 16: OTHER INFORMATION

This MSDS is a compilation of information supplied by the manufacturers of the chemicals contained in this product.

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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