

# SMT International, LLC

## SAFETY DATA SHEET (SDS)

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Amtech Lead Free Solder Paste #31 Series **Chip Quik SMDLTFP series**  
**SYNONYMS:** Paste, Solder Cream

**MANUFACTURER:** SMT International, LLC **Manufactured for Chip Quik, Inc.**  
**ADDRESS:** PO Box 989 Deep River, CT 06417 USA  
**PHONE:** 860-526-8300  
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**EMERGENCY:** Infotrac-(800)535-5035

**REVISION DATE:** March 13, 2014  
**REVISION NUMBER:** 2  
**DOCUMENT NAME:** SDS-Paste-010

**PRODUCT USE:** Soldering components for bonding semiconductor chips and packages to circuit boards

### SECTION 2: HAZARDS IDENTIFICATION

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

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

**GHS:**



Signal Word: Warning

Hazard Statement(s)

H302 Harmful if swallowed  
H316 Causes mild skin irritation  
H333 May be harmful if inhaled  
H335 May cause respiratory irritation  
H336 May cause drowsiness or dizziness

Precautionary Statement(s)

P102 Keep out of reach of children  
P233 Keep container tightly closed  
P261 Avoid breathing dust/fume/gas/mist/vapors/spray  
P270 Do not eat, drink, or smoke when using this product  
P280 Wear protective gloves/protective eye protection/face protection  
P235 + P402 Keep cool. Store in a dry place.  
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water  
P304 + P340 IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing  
P305 + P351 IF IN EYES: Rinse continuously with water for several minutes

**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.

**SECTION 2 NOTES:**

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

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

| Hazardous Ingredients <sup>(1)</sup>  | C.A.S. Number | Weight Percent   | OSHA PEL mg/m <sup>3</sup> | ACGIH TLV TWA mg/m <sup>3</sup> |
|---------------------------------------|---------------|--|----------------------------|---------------------------------|
| Modified Rosins <sup>(2)</sup>        | NA            | <45  | NE                         | NE                              |
| Mixed Carboxylic Acids <sup>(2)</sup> | NA            | <4   | NE                         | NE                              |
| Tin                                   | 7440-31-5     | Product contains one or more of these metallic elements in varying percentages | 2.00                       | 2.00                            |
| Silver                                | 7440-22-4     |  | 0.01                       | 0.10                            |
| Bismuth                               | 7440-69-9     |  | NE                         | NE                              |
| Antimony                              | 7440-36-0     |  | 0.50                       | 0.50                            |
| Copper                                | 7440-50-8     |  | 1.00                       | 1.00                            |
| <b>Non-Hazardous Ingredients</b>      |               |  |                            |                                 |
| Surfactants                           | N/A           | <4   | NE                         | NE                              |
| Rheological Modifier                  | N/A           | <5   | NE                         | NE                              |
|                                       |               |  |                            |                                 |

**SECTION 3 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 SDS.

**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.

**SECTION 5: FIRE-FIGHTING MEASURES**

**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. Do not use water on fire where molten metal is present.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Moderate in the form of dust when exposed to heat or flame.

**SECTION 5 NOTES:**

Molten solder alloys consisting of Antimony, Bismuth, Copper, 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.

**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 2, 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.

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**SECTION 7: HANDLING AND STORAGE (continued)**

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**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.

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**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

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**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:** Remove contaminated clothes and laundry before reuse.

**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.

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**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

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|   |                 |
|---|-----------------|
| <b>APPEARANCE:</b>                              | Gray paste      |
| <b>ODOR:</b>                                    | Odorless        |
| <b>ODOR THRESHOLD:</b>                          | Not established |
| <b>pH as SUPPLIED:</b>                          | N/A             |
| <b>MELTING POINT:</b>                           | Varies          |
| <b>FREEZING POINT:</b>                          | Varies          |
| <b>INITIAL BOILING POINT:</b>                   | Varies          |
| <b>BOILING RANGE:</b>                           | N/A (°F/°C)     |
| <b>FLASH POINT:</b>                             | N/A (°F/°C)     |
| <b>EVAPORATION RATE:</b>                        | N/A             |
| <b>FLAMMABILITY (SOLID):</b>                    | Not established |
| <b>UPPER/LOWER FLAMMABILITY:</b>                | Not established |
| <b>UPPER/LOWER EXPLOSIVE LIMITS:</b>            | Not established |
| <b>VAPOR PRESSURE (mmHg):</b>                   | N/A (°F/°C)     |
| <b>VAPOR DENSITY (AIR = 1):</b>                 | N/A (°F/°C)     |
| <b>RELATIVE DENSITY:</b>                        | Not established |
| <b>SOLUBILITY IN WATER:</b>                     | Insoluble       |
| <b>PARTITION COEFFICIENT (n-octanol/water):</b> | Not established |
| <b>AUTOIGNITION TEMPERATURE:</b>                | Not established |
| <b>DECOMPOSITION TEMPERATURE:</b>               | Not established |
| <b>VISCOSITY:</b>                               |                 |

**SECTION 9 NOTES:**

Other physical and chemical properties depend on alloy composition. Some typical alloy compositions are:

|                              |                                |
|------------------------------|--------------------------------|
| 96.5%Tin/3%Silver/0.5%Copper | 99.3%Tin/0.7%Copper            |
| 95%Tin/5%Antimony            | 95.5%Tin/4.0%Silver/0.5%Copper |
| 42%Tin/58%Bismuth            |                                |

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**SECTION 10: STABILITY AND REACTIVITY**

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|   |  |
|---|--|
| <b>STABILITY:</b>                           | Stable   |
| <b>CONDITIONS TO AVOID (STABILITY):</b>     | Not established                                      |
| <b>INCOMPATIBILITY (MATERIAL TO AVOID):</b> | Oxidizing materials, acids, hydrogen peroxide, bases |
| <b>HAZARDOUS DECOMPOSITION/BY-PRODUCTS:</b> | N/A  |
| <b>POSSIBILITY OF HAZARDOUS REACTIONS:</b>  | Will not occur                                       |

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**SECTION 11: TOXICOLOGICAL INFORMATION**

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**ACUTE TOXICITY:**

|                             |            |
|-----------------------------|------------|
| <b>Antimony (7440-36-0)</b> |            |
| LD50 Ingested rat           | 7000 mg/kg |

|                           |           |
|---------------------------|-----------|
| <b>Silver (7440-22-4)</b> |           |
| LD50 Oral mouse           | 100/mg/kg |

**SKIN CORRISSION/IRRITATION:** Not established  
**SERIOUS EYE DAMAGE/IRRITATION:** Not available  
**RESPIRATORY OR SKIN SENSITIZATION:** Not established  
**GERM CELL MUTAGENICITY:** Not available  
**CARCINOGENICITY:**

|           |                            |                 |                                 |
|-----------|----------------------------|-----------------|---------------------------------|
| OSHA: N/A | <b>ACGIH:</b> Lead (Pb)-A3 | <b>NTP:</b> N/A | <b>IARC:</b> Lead (PB)-Group 2B |
|-----------|----------------------------|-----------------|---------------------------------|

**REPRODUCTIVE TOXICITY:** Not available  
**STOT-SINGLE EXPOSURE:** Not available  
**STOT-REPEATED EXPOSURE:** Not available  
**ASPIRATION HAZARD:** Not available

**SECTION 11 NOTES:**

This product is a solid that 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 2 for additional health hazards.

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**SECTION 12: ECOLOGICAL INFORMATION**

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**TOXICITY:** Not established  
**PERSISTENCE AND DEGRADABILITY:** Not established  
**BIOACCUMULATIVE POTENTIAL:** Not established  
**MOBILITY IN SOIL:** Not established  
**OTHER ADVERSE EFFECTS:** Not established

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**SECTION 13: DISPOSAL CONSIDERATIONS**

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**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.

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**SECTION 14: TRANSPORT INFORMATION**

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Transport in accordance with applicable regulations and requirements.

**UN Number:** Not available  
**UN Proper Shipping Name:** Not available  
**Packaging Group:** Not applicable  
**Environmental Hazards:** None

**TRANSPORT HAZARD CLASSES:**

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

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**SECTION 15: REGULATORY INFORMATION**

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

**U.S. FEDERAL REGULATIONS:** None  
**STATE REGULATIONS:** None  
**INTERNATIONAL REGULATIONS:** None

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**SECTION 16: OTHER INFORMATION**

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This SDS 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.

**KEY:**

**N/A:** Not applicable  
**GHS:** Global Harmonized System  
**OSHA:** Occupational Safety and Health Administration  
**ACGIH:** American Conference of Governmental Industrial Hygienists  
**NTP:** National Toxicology Program  
**IARC:** International Agency for Research on Cancer  
**CAS:** Chemical Abstract Service  
**PEL:** Permissible Exposure Limit  
**TLV:** Threshold limit value  
**TWA:** Time Weighted Average  
**NE:** Not Established  
**NIOSH:** National Institute for Occupational Safety and Health  
**LD50:** Lethal Dose, 50% or median lethal dose  
**STOT:** Specific target organ toxicity  
**US DOT:** United States Department of Transportation  
**DOT:** Department of Transportation  
**IATA:** International Air Transport Association  
**EPA:** Environmental Protection Agency  
**TSCA:** Toxic Substance Control Act  
**HMIS:** Hazardous Material Identification System

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**DISCLAIMER:**

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