

MATERIAL SAFETY DATA SHEET

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SECTION 1: IDENTIFICATION

PRODUCT NAME: AMTECH Solder Cream, 200, 300, 400, 500, 4000 & SynTECH Series

SYNONYMS: Solder Paste

CHEMICAL FAMILY: Mixture

FORMULA: Proprietary

CAS REGISTRY NUMBER: Not applicable since product is a mixture.

MANUFACTURED BY: AMTECH, Inc.

SECTION 2: COMPONENT HAZARD DATA ⁽¹⁾

HAZARDOUS COMPONENTS	CAS NUMBER	EXPOSURE LIMITS
Modified Rosins ⁽²⁾	NA	Not Established
Pine Oil Derivatives ⁽²⁾	8000-41-7	Not Established
Proprietary Ingredients ⁽²⁾	NA	Not Established
Mixed Carboxylic Acids ⁽²⁾	NA	Not Established

(1) Per 29 CFR 1910 the mixture has not been tested as a whole. All hazardous components which comprise $\geq 1\%$ of the mixture (0.1% if 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.

OTHER HAZARDOUS COMPONENTS

		CAS NUMBER
Lead	Product contains	7439-92-1
Tin	one or more of	7440-31-5
Silver	these metallic	7440-22-4
Bismuth	elements in	7440-69-9
Antimony	varying	7440-36-0
Copper	percentages	7440-50-8
Indium		7440-74-6

	OSHA PEL	ACGIH TLV
Lead	0.05 Mg./Cu. M	0.15 Mg./Cu. M.
Tin	2.0 Mg./Cu. M.	2.0 Mg./Cu.M.
Silver	0.01 Mg./Cu. M.	0.1 Mg./Cu. M
Bismuth	Not Established	Not Established
Antimony	0.5 Mg./Cu. M.	0.5 Mg./Cu. M.
Copper	1.0 Mg./Cu. M.	1.0 Mg./Cu. M.
Indium	Not Established	0.1 Mg./Cu. M.

SECTION 3: HAZARDS IDENTIFICATION

PRINCIPAL HEALTH EFFECTS:

Toxic effects described in animals from exposure to component(s) of this product by inhalation, ingestion, skin or eye contact include: Skin sensitization, skin irritation, moderate to severe eye irritation, liver effects, kidney effects.

Human health effects of over exposure to components of this product may include: Allergic skin rashes, skin irritation with discomfort or rash, shortness of breath.

OTHER EFFECTS AND ADDITIONAL HEALTH HAZARD INFORMATION:

Skin sensitization may be caused in susceptible humans. Molten solder alloys consisting of lead, tin, silver, bismuth, antimony and/or indium do not produce significant quantities of fume below 900 degrees F.

SECTION 4: FIRST AID MEASURES

SKIN CONTACT: In case of contact, immediately wash skin with soap and plenty of water.

EYE CONTACT: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INHALATION: If large amounts are inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth.

INGESTION: If swallowed, do not induce vomiting, immediately give two glasses of water or activated charcoal slurry. Never give anything by mouth to an unconscious person. Call a physician.

INSTRUCTIONS TO PHYSICIAN: To prepare activated charcoal slurry, suspend 50 g activated charcoal in 400-ml water in a plastic bottle and shake well. Administer 5 ml/kg of body weight, or 350 ml for an average adult.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: N/A

FIRE AND EXPLOSION HAZARDS: This product does not present any unusual fire and explosion hazards. When heated to high temperatures, lead emits toxic fumes.

EXTINGUISHING MEDIA: Carbon dioxide or dry chemical.

SPECIAL FIRE FIGHTING INSTRUCTIONS: Wear full protective clothing and a self contained, full face-piece, positive pressure breathing apparatus. Avoid contact with burning material. At elevated temperatures toxic fumes may be formed.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Material is extremely thick and will not flow out. **FOR SMALL SPILLS:** Wipe up or absorb with absorbent material. **FOR LARGER SPILLS:** If flammable vapors or liquids may be present, turn off electrical devices and other sources of possible spark or flame. Do not allow spill to spread to or intentionally flush spill to sewer or ground. Wash area thoroughly. Adequately ventilate area. Spill residue, cleaning rags and absorbent can be considered "hazardous".

SECTION 7: HANDLING AND STORAGE

Storage Temperature: Store at 42-47 F, higher temperature will shorten the usable life of the product but will not pose hazards.

Storage Pressure: Store containers at ambient pressure. See additional information in Section 8

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

PROTECTION INFORMATION: Use with adequate local ventilation sufficient to maintain exposures below application limits. Appropriate respiratory protection must also be used if exposures cannot be maintained below applicable limits.

RESPIRATORY PROTECTION: Respiratory protection must be used if exposures cannot be maintained below applicable exposure limits through the use of ventilation and other engineered controls. Full-face respiratory protection may be required for substances that are corrosive or irritating to the eyes. Cartridge, canister or any negative pressure respirator should never be used in areas where the contaminant concentration levels may exceed the IDLH (Immediately Dangerous to Life and Health) value or is unknown.

GLOVES: Gloves should be worn whenever the possibility of skin or hand contact exists.

OTHER PROTECTION PRACTICES: Appropriate eye protection, e.g. chemical splash goggles, should be used if the possibility of eye contact exists. Protective outer clothing should be used where the possibility of body contact exists. Contaminated work clothing should not be allowed out of the work place. Do not smoke, consume or store food or drinks in areas where the product is stored. After handling the product, wash hands and face thoroughly before leaving the work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

FORM: Gray Cream

ODOR: Solvent

APPEARANCE: Gray

SOLUBILITY IN WATER: Insoluble (even in ws formulation, metal is not soluble).

Initial Boiling Point of Organic Component(s): 214^o C (417^o F)

Specific Gravity > 4 Vapor Pressure (estimated for mixture): <1mmHg

Vapor Density (air = 1): >1

Evaporation Rate (estimated for mixture, n-butyl acetate = 1, 20^o C): <1

SECTION 10: STABILITY AND REACTIVITY

INSTABILITY: The product is normally stable.

INCOMPATIBILITY: Avoid contact with skin.

DECOMPOSITION: The product is normally stable and does not decompose at room temperature.

At elevated temperatures, vapors or condensed vapors of the following may be produced: Carbon or carbon oxides, water vapor, nitrogen oxides, rosin pyrolysis products (such as formaldehyde).

POLYMERIZATION: This product does not normally polymerize to any appreciable extent.

SECTION 11: TOXICOLOGICAL INFORMATION⁽³⁾

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OTHER EFFECTS AND ADDITIONAL HEALTH HAZARD INFORMATION:

Skin sensitization may be caused in susceptible humans.

Molten solder alloys consisting of lead, tin, silver, bismuth, antimony and/or indium do not produce significant quantities of fume below 900 degrees F.

CHRONIC TOXICOLOGY - This product is not listed as a carcinogen by NTP (National Toxicology Program); not regulated as a carcinogen by OSHA (Occupational Safety & Health Administration); not evaluated by IARC (International Agency for Research on Cancer).

PRIMARY ROUTES OF ENTRY: Eyes, Skin, and Inhalation.

(3) This product is a mixture 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.

SECTION 12: ECOLOGICAL INFORMATION

---Data not Available, this product is a mixture that has not been tested as a whole to determine its hazards ---

SECTION 13: DISPOSAL CONSIDERATION

Emptied product containers, contaminated clothing and cleaning equipment should be considered "hazardous" and disposed of in accordance with area procedures for materials which may contain lead.

SECTION 14: TRANSPORT INFORMATION

DOT Hazardous Material Classification: Solder Paste is not listed as a DOT Hazardous Material.

SECTION 15: REGULATORY INFORMATION

This product is not listed on the EPA TSCA list. All components of this product are on the TSCA inventory list.

California State Proposition 65: "WARNING: THIS PRODUCT CONTAINS LEAD AND/OR CHEMICALS KNOWN TO THE STATE OF CALIFORNIA AND OTHER STATES TO CAUSE CANCER, OR BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM"

REVIEWS, STANDARDS AND REGULATIONS

CARCINOGENIC REVIEW: Animal Indefinite Inemdt 23,325,80

ACGIH TLV-TWA 0.15 Mg (Pb)/M3 85INA8 5,343,86

MSHA Standard-AIR: TWA 0.15 Mg(Pb)/M3 DTLVS 3,143,71

OSHA Standard-AIR: TWA 0.05 Mg (Pb)/M3 FEREAC 43,53007,78

NIOSH Rel to Inorganic Lead AIR TWA 0.10 Mg/ (Pb) /M3

MMWWR 34 (1S),21S,85

EPA Genotox Program 1986, Inconclusive: Carcinogenicity - Mouse/Rat

EPA Genotox Program 1986, Inconclusive: In vivo Cytogenetics - Human Lymphocyte

EPA TSCE Section 8(E) Status Report 8EHQ-0680-0345

MIOSH Analytical Methods: See Lead, 7082; Elements, 7300; Lead in Blood and Urine, 8003

Meets criteria for proposed OSHA Medical Records Rule FEREAC 47,30420,82

Only Selected Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here.

See actual entry in RTECS for complete information.

SECTION 16 OTHER INFORMATION

This MSDS is a compilation of the information supplied in the MSDS's obtained from the manufacturers of the chemicals contained in this product. 29 CFR 1910.1200 was consulted for MSDS guidelines.

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