

Material Safety Data Sheets For Solder

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SECTION I. GENERAL INFORMATION

PRODUCT NAME (NUMBER)	Flux-Coated and Flux Filled Solder Preforms (Types R, RMA, RA) Wire Core Solder
CHEMICAL FAMILY	Solder
D.O.T. HAZARD CLASS	Not regulated

SECTION II. HAZARDOUS INGREDIENTS

INGREDIENTS		GAS NUMBER	WEIGHT PERCENT	OSHA PEL	ACGIH TLV
Lead	} Product contains	7439-92-1	*	0.05 mg / cum	0.05 mg / cum
Tin	} one or more of	7440-31-5	*	2.0 mg / cum	2.0 mg / cum
Silver	} these metallic	7440-22-4	*	0.01 mg / cum	0.1 mg / cum
Bismuth	} elements in varying	7440-69-9	*	NE	NE
Antimony	} percentages.	7440-36-0	*	0.5 mg / cum	0.5 mg / cum
Indium	}	7440-74-6	*	NE	0.1 mg / cum
Rosin		8050-09-7	0.5 - 4.0	NL	0.10 mg / cum

* WEIGHT PERCENT Composition of solder alloys vary widely therefore no weight percent or specific gravity is given. (See product label for alloy composition.) (96 – 99.5% alloy).

SECTION III. PHYSICAL DATA

(PUBLISHED OR ESTIMATED VALUES)

BOILING POINT Deg. F. (760 mm Hg)	N/A	SPECIFIC GRAVITY (H20=1)	See Sec. X
VAPOR PRESSURE (mm Hg at 20 Deg. C.)	N/A	%VOLATILE BY WEIGHT EVAPORATION RATE	N/A N/A
VAPOR DENSITY (AIR=1)	N/A		
SOLUBILITY IN WATER	Insoluble	pH	N/A
APPEARANCE AND ODOR	Silver-gray metal, odorless, various shapes and sizes		

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

ESTIMATED FLAMMABLE LIMITS (% By Volume in Air)	LEL: N/A	UEL: N/A
FLASH POINT Deg. F	None	
EXTINGUISHING MEDIA	N/A	
SPECIAL FIRE FIGHTING PROCEDURES	Use NIOSH approved self-contained breathing apparatus and full protective clothing if involved in a fire.	
UNUSUAL FIRE AND EXPLOSION HAZARD	When heated to high temperatures lead emits highly toxic fumes.	

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SECTION V. (A) HEALTH HAZARD DATA (Symptoms/Effects of Overexposure)

- INHALATION** When heated to molten state rosin fume can cause respiratory irritation, dizziness, headache. For overexposure to lead, tin, silver, bismuth, antimony and indium fume at soldering temperature see Sec. X.
- INGESTION** Essentially non-hazardous at room temperature. (NOT likely to occur).
- SKIN** Molten preform solder can cause burns. Repeated exposure to rosin fume may cause a skin rash.
- EYES** Molten flux can cause eye burn. Fume can cause eye irritation.
- LISTED CARCINOGENS** None of the metal elements of this product are confirmed as human carcinogens at this time by NTP, IARC, or OSHA. IARC classifies lead and some lead compounds as 2B carcinogens (possibly carcinogenic to humans).
- TOXICITY** See Section X.
- MEDICAL CONDITIONS POSSIBLY AGGRAVATED** See Section X.
- TARGET ORGAN EFFECTS** See Section X.

SECTION V. (B) HEALTH HAZARD DATA (Emergency and First Aid Procedures)

- INHALATION** If rosin fume is inhaled when heated to soldering temperatures, remove individual to fresh air. If breathing is difficult administer oxygen and consult a physician.
- INGESTION** Call a physician or Poison Control Center at once. Never give anything by mouth to an unconscious person.
- SKIN CONTACT** For burns cool with water and obtain medical aid. For rash remove from exposure and consult a physician.
- EYE CONTACT** For burns flush immediately with cool water and obtain medical air. For fume irritation remove from exposure.

SECTION VI. REACTIVITY DATA

- STABILITY** Stable: X Unstable:
- CONDITIONS TO AVOID** None.
- INCOMPATIBILITY (Materials to avoid)** Oxidizing materials, and acids
- HAZARDOUS DECOMPOSITION PRODUCTS** See Section X
- HAZARDOUS POLYMERIZATION** Will Occur: Will Not Occur: X
- CONDITIONS TO AVOID** N/A

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SECTION VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Solid at room temperature. If in molten state allow to cool and solidify and then scrap up.

WASTE DISPOSAL The alloy portion is reclaimable.

 Must be in accordance with Federal, State and Local Laws and Regulations.

SECTION VIII. SPECIAL PROTECTION

REPSIRATORY A NIOSH approved respirator for organic vapors if TLVs are exceeded.

EYEWEAR When soldering use face shield or eye goggles.

CLOTHING/GLOVES Not usually necessary.

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

SECTION IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

No special requirements for storage. Read all container labeling. Food and drink should not be consumed or tobacco products used, nor cosmetics applied in areas where solders may be used. Always wash hands after handling solder and before eating drinking or smoking.

OTHER PRECAUTIONS

Containers: Since empty containers may retain product residues (vapors, liquid, or solid) all labeled hazard precautions must be observed. **FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN. DO NOT TAKE INTERNALLY.**

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SECTION X. ADDITIONAL INFORMATION

HEALTH HAZARD DATA (continued)

LEAD TOXICITY Molten solder alloys do not produce significant lead fume below 900 deg. F. Exposure to high levels of airborne or ingested lead may produce symptoms of anemia, insomnia, weakness, constipation, nausea and abdominal pain. Prolonged exposure may result in kidney and nervous system involvement. Women of childbearing 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.

OVEREXPOSURE TO

TIN Dust or fume 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. May also cause respiratory tract irritation, metallic taste or damage to kidney, liver, or nervous system.
INDIUM May cause weight loss, pulmonary edema, blood damage and degenerative changes in liver and kidneys.

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

TARGET ORGAN EFFECTS (Lead) GI tract, CNS, Kidneys, blood and gingival tissue

REACTIVITY DATA (continued)

HAZARDOUS DECOMPOSITION PRODUCTS The smoke from a soldering operation using rosin flux may include such compounds as carbon monoxide, abietic acid, aliphatic aldehydes, and diterpene acids.

REGULATORY INFORMATION

CALIFORNIA STATE PROPOSITION 65 "WARNING! This product may contain LEAD known to the State of California to cause cancer, birth defects or other reproductive harm." (See product label.)

TOXIC SUBSTANCE CONTROL ACT (TSCA) Status All ingredients of this product are listed on the TSCA inventory.

SARA TITLE III (Section 313) Components present in this product at a level which could require reporting under this statute are: Lead – Antimony – Silver (See product label.)

EMERGENCY TELEPHONE NUMBER

INFOTRAC 1-800-535-5053

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