Material Safety Data Sheet

According to (EC) No 1907/2006

Lead-Free Water Soluble Solder Paste

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1. Identification of the Preparation and of the Company

Trade Names: Series 400, WS, SP Series, Lead Free Water Soluble Solder Paste
Synonyms: Water Soluble Solder Paste, Solder Cream, SolderPlus®, PrintPlus®
Manufacturer: **EFD Inc.**
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East Providence, RI 02914, USA
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Emergency: Chemtrec (Transportation) +1-800-424-9300
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2. Composition/Information on Ingredients

Component	CAS	EINECS	% by Weight	OSHA PEL mg/m^3	ACGHIV TLV mg/m^3
Tin	7440-31-5	231-141-8	**	2.0	2.0
Silver	7440-22-4	231-131-3	**	0.01	0.01
Antimony	7440-36-0	231-146-5	**	0.5	0.5
Bismuth	7440-69-9	231-177-4	**	NE	NE
Copper	7440-50-8	231-159-6	**	NE	NE
Polyglycol	Mixture	Mixture	3.0 – 5.0	NE	NE
Carboxylic acid	Mixture	Mixture	0.0 – 3.0	NE	NE
Ethylene glycol	107-21-1	203-473-3	0.0 – 8.0	50.0	50.0

** Compositions of alloy solder powders vary. Refer to product label for specific alloy composition.
NE = Not Established

3. Hazard Identification

GENERAL: Fumes generated during soldering are irritating to the eyes and may cause headache and respiratory system irritations or damage. Inhalation or ingestion may produce nausea, vomiting, headache or joint and muscle pain. May cause skin or eye irritation.

EYE CONTACT: May cause mild eye irritation.

SKIN CONTACT: May cause mild skin irritation. Prolonged contact may cause sensitization. Hot, molten solder may cause serious burns.

INHALATION: Inhalation hazard is low. May cause nausea, vomiting, headache or joint pain.

INGESTION: Ingestion of metal alloys is harmful. Danger of cumulative effects. May cause damage to blood, kidneys and nervous system.

4. First Aid Measures

EYES: Remove contact lenses. Immediately flush with copious amounts of water for at least 15 minutes. Seek medical attention.

SKIN: Wash affected area with plenty of warm, soapy water. If irritation develops, seek medical attention. Do not try to remove cooled rosin from skin. Seek medical attention.

INHALATION: Remove person to fresh air. If breathing has stopped, perform artificial respiration and seek medical attention.

INGESTION: If person is conscious, give large quantity of water to drink. Seek immediate medical attention. Harmful if swallowed.

5. Fire Fighting Measures

EXTINGUISHING MEDIA: Dry chemical, foam, CO_2.

UNSUITABLE EXTINGUISING MEDIA: Water.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Flux in solder may burn if soldering is done with a flame.

FIRE FIGHTING EQUIPMENT: If large quantities of solder are on fire, breathing apparatus should be used, as toxic fumes may be emitted.

PRECAUTIONS: Keep away from ignition sources. Use with adequate ventilation.

HAZARDOUS DECOMPOSITON PRODUCTS: May form carbon monoxide, carbon dioxide or other toxic fumes. At high temperatures, metallic vapors may be liberated.

6. Accidental Release Measures

PERSONAL PRECAUTIONS: Wear appropriate personal protection equipment (refer to Section 8.)

ENVIRONMENTAL PRECAUTIONS: Keep out of sewers and waterways.

METHODS FOR CLEANING: Collect and place into properly labeled waste container. Dispose of according to applicable government regulations.

7. Handling and Storage

HANDLING: Avoid inhalation of fumes and vapor. Avoid contact with eyes, skin and clothing. Keep away from children. For industrial use only. Wash hands thoroughly after handling before eating, drinking or smoking.

STORAGE: Store in a cool, dry place and away from heat or open flame. Keep container closed. Do not store with foodstuffs.

8. Exposure Controls/Personal Protection

ENGINEERING MEASURES:
Maintain adequate local ventilation. Operators should be protected from soldering fumes.

PERSONAL PROTECTIVE EQUIPMENT:

EYES: Wear appropriate safety glasses.

SKIN: Wear appropriate protective clothing and impervious rubber gloves. Avoid skin contact. Workers should wash hands thoroughly before eating, drinking or smoking.

INHALATION: Use with adequate ventilation.

HYGIENE: Eating, drinking and smoking should not be permitted in areas where soldering is done. Do not store foodstuffs with solder.

9. Chemical and Physical Properties

APPEARANCE AND ODOR:	Grey cream with a mild odor
FLASH POINT:	>111ºC (COC)
FLAMMABILITY:	Not established
AUTO IGNITION TEMPERATURE:	Not established
pH:	Not applicable
VAPOR PRESSURE:	Not established
VAPOR DENSITY:	Not established
MELTING POINT:	138º – 290ºC (varies with alloy)

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BOILING POINT:	124º – 205ºC (for flux)
SOLUBILITY IN WATER:	9.0% to 15.0% (flux is water soluble)
RELATIVE DENSITY:	>4 (H_2O = 1)
EVAPORATION RATE:	Not applicable

10. Stability and Reactivity

STABILITY: Stable under normal conditions.

MATERIALS TO AVOID: May react with concentrated acids. Silver is incompatible with hydrogen peroxide and reacts with diluted nitric acid and concentrated sulfuric acid.

CONDITIONS TO AVOID: High temperatures, high humidity.

HAZARDOUS DECOMPOSITION PRODUCTS: None identified.

HAZARDOUS POLYMERIZATION: Will not occur.

11. Toxicological Information

ACCUTE TOXICITY: Metallic tin and silver are generally considered not toxic.

LOCAL EFFECTS: Ingestion of high quantities of silver may cause Argyria, a discoloration of the skin or eyes.

EXCESSIVE EXPOSURE:

SKIN: Rosin may be a sensitizer. May cause skin irritation or dermatitis.

EYES: May be irritating to the eyes.

INHALATION: Prolonged inhalation of soldering vapors may produce asthma-like reactions.

12. Ecological Information

Possible ecological hazard. In high concentrations, this product may be dangerous to plants and animals. Keep out of waterways. Flux is biodegradable.

13. Disposal Considerations

Dispose of according to applicable government regulations. Recycle when possible. Do not dump into sewers, on the ground, or into any body of water.

14. Transportation Information

UN Number:	Not regulated
ADR/RID	Not regulated
IMO/IMDG	Not regulated
CAO/IATA	Not regulated

15. Regulatory Information

TSCA STATUS: All chemical constituents used in the manufacture of this product are listed on the TSCA inventory maintained by the U.S. Environmental Protection Agency.

REGULATED CHEMICALS:

Chemical Name	CAS#	Regulation
Silver	7440-22-4	SARA 313
Antimony	7440-36-0	SARA 313
Copper	7440-50-8	SARA 313

SARA Title III: This product may contain components at a level which could require reporting, including: silver or antimony (see label for alloy composition).

EUROPEAN REGULATIONS:

HAZARD SYMBOL AND HAZARD INFORMATION

Xi – Irritant

R-Phrases

R36/38	Irritation of eyes and skin
R42/43	May cause sensitization by inhalation and skin contact

S-Phrases

S2	Keep out of reach of children
S24/25	Avoid contact with skin and eyes
S36/37	Wear safety gloves and glasses

16. Other Information

NFPA Rating:	Health	2	Flammability	1
	Reactivity	0	Special	n/a
HMIS Rating:	Health	2	Flammability	1
	Reactivity	0	Personal Protection	n/a

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Additionally, EFD Inc. assumes no responsibility for injury to the end user proximately caused by the material even if reasonable safety procedures are followed. The end user assumes the risk in his use of this material.

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