

# Material Safety Data Sheet

According to (EC) No 1907/2006

## Leaded Resin Based Solder Paste

A

### 1. Identification of the Preparation and of the Company

**Trade Names:** Series 100, 200, 300, 500, 1200, SP6000, R, RMA, RA, NC, NCLR, Leaded Resin Based Solder Paste

**Synonyms:** Solder Paste, Solder Cream, SolderPlus<sup>®</sup>, PrintPlus<sup>®</sup>

**Manufacturer:** EFD Inc.

40 Catamore Boulevard  
East Providence, RI 02914, USA  
Phone: +1-401-431-7000

**Emergency:** Chemtrec (Transportation) +1-800-424-9300  
Outside USA +1-703-527-3887

### 2. Composition/Information on Ingredients

Component	CAS	EINECS	% by Weight	OSHA PEL mg/m <sup>3</sup>	ACGHIV TLV mg/m <sup>3</sup>
Lead	7439-92-1	231-100-4	**	0.05	0.15
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
Resin	65997-06-0	266-041-3	3.0-9.0	NE	NE
Tridecyl alcohol	68526-86-3	271-235-6	0.0-7.0	NE	NE
Alpha terpineol	98-55-5	202-680-6	1.0-7.0	NE	NE
Petrolatum	8009-03-8	232-373-2	0.0-5.0	NE	NE
Organic thixotrope	Mixture	Mixture	0.5-4.0	NE	NE

\*\* 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<sub>2</sub>.

**UNSUITABLE EXTINGUISHING 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 DECOMPOSITION 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:** >76°C (COC)

**FLAMMABILITY:** Not established

**AUTO IGNITION TEMPERATURE:** Not established

**pH:** Not applicable

**VAPOR PRESSURE:** Not established

**VAPOR DENSITY:** Not established

**MELTING POINT:** 138° – 290°C (varies with alloy)

EFD, Inc. 40 Catamore Boulevard, East Providence, RI 02914, USA [www.efd-inc.com](http://www.efd-inc.com)

**North and South America:** +1-800-556-3484 +1-401-431-7000  
Fax: +1-401-431-7079  
[solder@efd-inc.com](mailto:solder@efd-inc.com)

**Europe** +44 (0) 1582 666334  
Fax: +44 (0) 1582 664227  
[europa@efd-inc.com](mailto:europa@efd-inc.com)

**Asia** +86 (21) 3866 9006  
Fax: +86 (21) 3866 9095  
[china@efd-inc.com](mailto:china@efd-inc.com)

## Material Safety Data Sheet

According to (EC) No 1907/2006

### Leaded Resin Based Solder Paste

A

**BOILING POINT:** 124° – 198°C (for flux)  
**SOLUBILITY IN WATER:** Insoluble  
**RELATIVE DENSITY:** >4 (H<sub>2</sub>O = 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

**ACUTE TOXICITY:** Metallic tin and silver are generally considered not toxic. Lead and inorganic lead compounds are classified by IARC as possibly carcinogenic to humans. Exposure to lead may result in kidney damage, kidney tumors, and lung tumors. Lead poisoning in humans can result in damage to the central nervous system, the blood forming organs, and can lead to anemia. Lead may also impair the reproductive system of men and women. There is rising evidence that lead exposure in adults results in high blood pressure.

**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
Lead	7439-92-1	SARA 313 CA Proposition 65**
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: lead, silver or antimony (see label for alloy composition).

\*\* This product contains lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm.

**EUROPEAN REGULATIONS:**

**HAZARD SYMBOL AND HAZARD INFORMATION**

Xn – Harmful



**R-Phrases**

R22 Harmful by ingestion  
R33 Danger of cumulative effects  
R36/38 Irritation of eyes and skin  
R42/43 May cause sensitization by inhalation and skin contact  
R63 Possible risk of harm to the unborn child

**S-Phrases**

S2 Keep out of reach of children  
S20/21 When using, do not eat, drink or smoke  
S24/25 Avoid contact with skin and eyes  
S36/37 Wear safety gloves and glasses

#### 16. Other Information

<b>NFPA Rating:</b>	Health	2	Flammability	1
	Reactivity	0	Special	n/a
<b>HMIS Rating:</b>	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.

EFD, Inc. 40 Catamore Boulevard, East Providence, RI 02914, USA [www.efd-inc.com](http://www.efd-inc.com)

**North and South America:** +1-800-556-3484 +1-401-431-7000  
 Fax: +1-401-431-7079  
[solder@efd-inc.com](mailto:solder@efd-inc.com)

**Europe** +44 (0) 1582 666334  
 Fax: +44 (0) 1582 664227  
[europe@efd-inc.com](mailto:europe@efd-inc.com)

**Asia** +86 (21) 3866 9006  
 Fax: +86 (21) 3866 9095  
[china@efd-inc.com](mailto:china@efd-inc.com)