



# SUPERIOR SOLDER PASTE ASP-LT



## DIRECT ALUMINUM SOLDERPASTE USING Sn/Bi/Zn

- Solders directly to aluminum for aluminum to copper and aluminum to aluminum connections
- Eliminating the need for plating aluminum before soldering
- Offers the low melting point temperature needed for heat pipe soldering
- Good thermal stability for heat sink reflow soldering
- Best results when soldering to 1XXX series aluminum

### DESCRIPTION

**Superior Solder Paste ASP-LT** is a water-soluble formulation designed for the low temperature direct soldering of aluminum to copper for heat sinks and other aluminum connections. It also has excellent soldering characteristics for copper and nickel-plated aluminum surfaces. The presence of zinc in the solder alloy of the paste permits the creation of a true intermetallic bond between the solder and the aluminum.

### APPLICATION

**Superior Solder Paste ASP-LT** is made from Type 3 Powder (-325/+500 Mesh Powder) with a unique flux binding system for very active aluminum flux. The product is sold as a two-part paste to keep the flux from degrading the solder powder until the product is mixed. These two parts can be stored at room temperature. Once mixed the paste has a very limited shelf life of one week before the flux degrades the paste mixture beyond the point of usefulness. The ideal temperature for printing and dispensing the paste is 20<sup>o</sup>– 23 °C with a relative humidity of 35-55%.

*Printing Parameters:*

Squeegee Blade:	80 to 90 durometer polyurethane or stainless steel
Stencil Material:	Stainless Steel, Molybdenum, Nickel Plated, Brass
Temp/Humidity:	Optimal ranges are 20-25°C and 35-55% Rel. Humidity

### DIRECTIONS

- ❶ Premix 85% solder paste (**ASP-LT-MP**) and 15% flux paste (**AL261-FP**) portions (by weight) to make the **Superior Solder Paste ASP-LT** using an electrical single blade rotary mixer for 5 minutes until uniform paste consistency is achieved.
- ❷ For heat sink applications **Superior Solder Paste ASP-LT** is normally applied via flat printing pattern to the heat sink base. Heat pipe in fins have solder paste applied via syringe.
- ❸ Parts are passed through the reflow oven matching the necessary reflow pattern for the mass of the heat sink being soldered. Part temperature must reach 180-195 °C to activate the flux.
- ❹ Cleaning of the soldered part should be done in-line with hot water rinse followed by counterflowing cold water rinses then drying.

*Superior manufactures quality fluxes. Our business is solving problems.*



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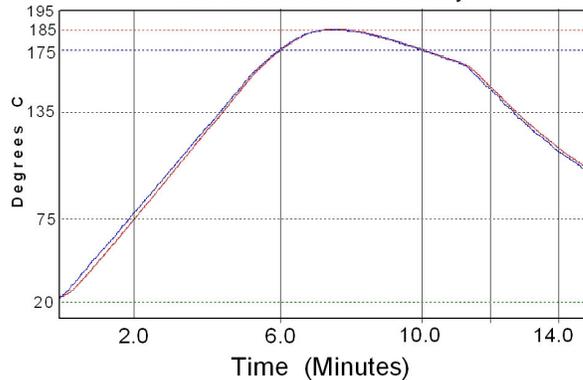
## PHYSICAL PROPERTIES

Density @ 20 °C (68 °F)	2.97 grams/liter
Viscosity @ 20 °C (68 °F)	280,000 – 480,000 kcps
Recommended Soldering Range	180 – 195 °C
Alloy Melting Point	132 – 138 °C
Odor	Mild
Flash Point	None

## TEMPERATURE PROFILE

The profile (depending on thermal mass) should reach max temp within 8 minutes.

**Superior Flux Heat Sink Reflow Profile**  
For Sn42/Bi54/Zn4 Alloy



## CLEANING and STORAGE

**Superior Solder Paste ASP-LT** is a water soluble paste formulation. All equipment in contact with the solder paste can be cleaned with water (followed by alcohol rinsing if rapid drying is needed).

**Superior Solder Paste ASP-LT** should be stored with consideration of the effect that storage will have on the long term stability of the paste

- To achieve a shelf life of 6 months, store in a freezer below 0°C. To reuse the paste it must be heated to room temperature (the shelf life is limited at room temperature)
- For non-refrigerated storage, maintain in a cool and dry location. Maximum temperature should not exceed 23°C. A storage time of 7 days can be expected.
- Avoid direct sunlight.

## SAFETY PRECAUTIONS

**Superior Solder Paste ASP-LT** attacks many metals to some extent. It is recommended that polyethylene, PVC or fiberglass reinforced polyester containers be used. Avoid skin contact and/or breathing vapors. Wear gloves and eye protection. This product, during handling or use, may be hazardous to health or the environment. Read the Material Safety Data Sheet and warning label before using this product.

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