



SUPERIOR SOLDER PASTE 592-13-8975

- ◆ Formula 592: No-Clean
- ◆ Class 3 Alloy: 63Sn/37Pb
- ◆ Type 3 Powder: -325 Mesh Powder
- ◆ Metal Content: 89.75%

- ◆ Residues and characteristics pass Bellcore.
- ◆ Meets IPC requirements for ROL0, No-Clean.
- ◆ Superior wetting characteristics, lot-to-lot consistency, and stable viscosity
- ◆ Halide-free, halogen-free
- ◆ Capable of printing 12 mil pitch
- ◆ Post-solder joints are pin-testable
- ◆ For Nitrogen or air atmosphere reflow ovens
- ◆ Translucent residue
- ◆ No slump
- ◆ Long tack time
- ◆ Air reflow
- ◆ Viscosity is 600,000 – 750,000 kcps*

* Viscosity can be adjusted to meet process requirements.

RECOMMENDED PROCESSING GUIDELINES

I. PRINTING

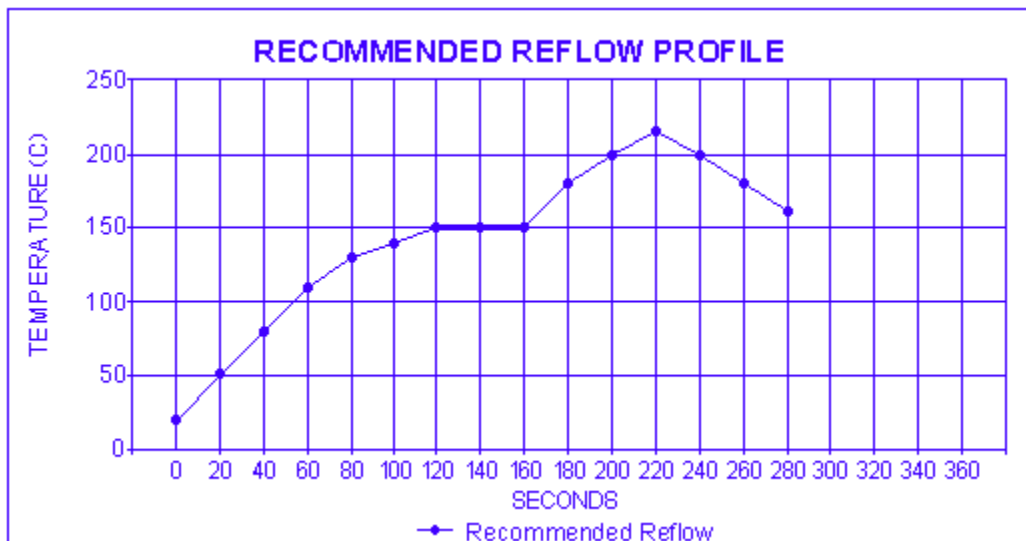
Tack Time for **Superior Solder Paste 592-13-8975** is sixteen (16) hours between printing, placement and reflow under ambient conditions below 23°C/74°F and a relative humidity below 60%. The exact time will depend on the environmental condition of the solder paste and plant. The ideal temperature range for operation of the solder paste is 20°C/68°F – 23°C/74°F, with a relative humidity of 35-55%. The viscosity of this solder paste is 200,000 to 400,000 kcps on the Brookfield viscometer.

Should printed circuit boards need to be stored for more than 6 hours after populating, prior to reflow, it is recommended that PCBs are maintained in a tightly controlled area. Humidity should be controlled between 35% - 55% and temperature should not exceed 23°C/74°F.

II. RECOMMENDED REFLOW PARAMETERS

63Sn/37Ag and 62Sn/36Pb/2Ag in No-Clean Formulation

- ❶ **PREHEAT ZONE:** Ramp from room temperature to 120°C in 45-120 seconds to dry the volatiles from the solder paste.
- ❷ **SOAK ZONE:** Ramp from 120-150°C in 30-60 seconds to get uniform temperature equilibrium of PCB.
- ❸ **REFLOW ZONE:**
 - 1) Ramp from a temperature of 150°C to 183°C for a period of 10 - 60 seconds*.
 - * Time above 183°C should not exceed 60 seconds.
 - 2) Ramp from 183°C to 210C-220°C ± 5°C for 16 – 45 seconds**.
 - ** Time above 210°C should be no less than 10 seconds, and no more than 30 seconds
- ❹ **COOLING ZONE:** A cool down rate of 1-2°C per second is recommended for optimum results.
- ❺ **CLEANING LAG TIME:** Cleaning efficiency is not affected by lag time between the reflow and cleaning process.



Superior manufactures quality fluxes, our business is solving problems.

III. POST-SOLDER CLEANING

Superior Solder Paste 592-13-8975 is a No-Clean paste formulated to remain on PCBs after reflow. While no post-solder cleaning is required for the residue, all residues may be removed using **Superior SyberKleen 2000** Saponifier in an aqueous cleaning process.

Wet solder paste is easiest to remove using isopropanol or other similar solvents. If printing interval exceeds two (2) hours, remove solder paste from screen stencil and store in a separate container.

IV. STENCIL CLEANING

Stencils should be cleaned using a semi-automated stencil cleaning system, hand wipes, or by hand-wiping the stencils with isopropanol and/or other alcohol solvents.

V. STORAGE

The following conditions are recommended to achieve long-term stability and the assurance of fresh solder paste:

- To achieve **3-9 month** storage life, store in a refrigerator, **1°C/33°F-12°C/55°F**.
- For non-refrigerated/frozen storage, maintain in a cool and dry location. Maximum temperature should not exceed **23°C/75°F**. A storage time of up to **3 months** can be expected.
- Avoid direct sunlight.

VI. SAFETY

Superior Solder Paste 592-13-8975 is a product formulated for use in assembly processes that require safety precautions be taken. Avoid contact with skin and eyes. When using, do not eat, drink, or smoke. Wear gloves and eye protection. Most alloys contain lead; wash hands if hands come in contact with the product.

Observe industrial hygiene and safety practices to assure conformance with local, state, and federal safety health and environmental regulations.

Adequate ventilation should be provided when soldering. Refer to the Material Safety Data Sheet (MSDS) for additional information.

VII. PACKAGING

- Jars of 50 or 250 grams available.
- Syringes available in 6cc (15 grams) and 10cc (35 grams) sizes.

VIII. TECHNICAL TEST DATA

QQS-571E

Resistivity of Water Extract:	Pass
Silver Chromate Paper Test:	Pass
Copper Mirror Test:	Pass

ANSI/IPC SF-818

Copper Mirror Test:	Pass
Silver Chromate Test:	Pass
Solids Content, Alloy:	89.75%
Flux residual solid after reflow:	3.3%
Halide Content:	-0-

Bellcore (TR-NWT-000078)

Halogen Content:	-0-
Copper Mirror Test	Pass
Surface Insulation Resistance Test	$>1 \times 10^{10}$ Class 3

ANSI/IPC SP-819

Solder Ball Test:	Pass
Wetting Test:	Pass
Slump:	-0-
Alloy conforms to Mil-STD-45662 and Mil-I-45208	

DISCLAIMER

The information contained herein is based on data considered to be accurate and is intended for use by persons having technical skills, at their own discretion and risk. Since conditions of use are outside of Superior Flux Company's control, we cannot assume liability for results obtained or damage incurred due to misuse, nor can we assume customer liability.



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