

4900P



SAC305 No-Clean Solder Paste

4900P is a no-clean solder paste made from a blend of high-purity, non-recycled tin, silver and copper metal powder mixed with a no-clean flux. This halogen-free and lead-free solder paste is designed for extreme flux activity and the enhanced printing requirements of ultra-fine pitch applications. It provides excellent wetting on copper OSP-coatings. Wide reflow process windows combined with high thermal stability yield solder joints with smooth surfaces. 4900P is the best lead-free solder paste for facilitating high speed printing. It can yield brick-like prints even when using ultra-fine pitch stencils as small as 0.3 mm.



Features & Benefits

Alloy exceeds J-STD-006C and meets ASTM B 32 purity requirements

Flux meets J-STD-004B

Repeatable and consistent printing characteristics

Long stencil and tack life facilitate high speed printing

Excellent wettability

Suitable for air or nitrogen atmospheres

Medium-soft, non-cracking residues

Available Packaging

| Part # | Packaging | Net Vol. | Net Wt. |
|------------|-----------|----------|---------|
| 4900P-25G | Syringe | 3.38 mL | 25 g |
| 4900P-250G | Jar | 33.8 mL | 250 g |

Storage and Handling

Store between 2 and 10 °C in an upright position with tip down to prevent flux separation and air entrapment.

Unopened container:

Shelf Life @ 2–10 °C 3.5 y

Shelf Life @ 20–25 °C 1 y

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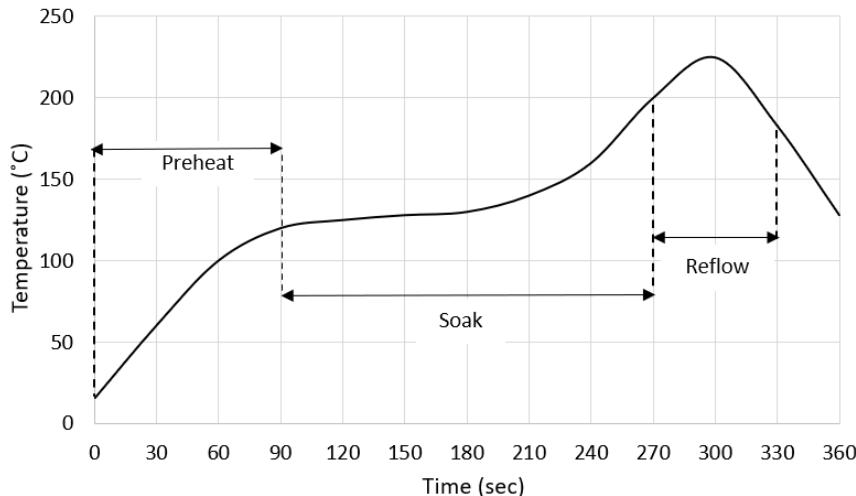
Properties

| | | |
|---|--|------------------------------|
| Flux Classification | ROL0 | J-STD-004B, MIL-F-14256F |
| Flux Type | Rosin | J-STD-004B |
| Flux Activity | Low | J-STD-004B |
| Copper Mirror | No removal | IPC-TM-650 2.3.32 |
| Corrosion Test | Pass | IPC-TM-650 2.6.15 |
| Electromigration | Pass | Bellcore GR-78-CORE 13.1.4 |
| Solder Ball Test | Pass | IPC-TM-650 2.4.43 |
| Slump Test @ 25 °C, 0.63 vert./horiz. @ 150 °C, 0.63 vert./horiz. @ 25 °C, 0.33 vert./horiz. @ 150 °C, 0.33 vert./horiz. | No bridges No bridges No bridges Pass | IPC-TM-650 2.4.35 |
| Viscosity | 1 600–1900 P | IPC-TM-650 2.4.34.3 modified |
| Acid Number (mg KOH/g) | 117 | IPC-TM-650 2.3.13 |
| Halides (by weight) | <0.05 % | J-STD-004B |
| Post Reflow Flux Residue | 5.5 % | TGA Analysis |
| Metal Loading | 88 % | PC-TM-650 2.2.20 |
| Surface Insulation Resistance (SIR) | $2.0 \times 10^{10} \Omega$ | IPC-TM-650 2.6.3.3 |
| Bellcore (Telecordia) | $5.3 \times 10^{10} \Omega$ | Bellcore GR-78-CORE 13.1.3 |
| Tack | | JIS Z 3284 |
| Initial | 124 g | |
| Retention @ 24 h | 111 g | |
| Retention @ 72 h | 98 g | |
| Shelf Life | 3.5 y | — |

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Reflow Profile



Reflow

Best results are achieved when the paste is reflowed in a forced air convection oven with a minimum of 8 zones. The following is a recommended profile for a forced air convection reflow process.

Preheat Zone—It is the ramp zone, which elevates the temperature of the PCB to the desired soak temperature. The rate of temperature rise should not exceed 2.5 °C/s to avoid thermal shock stress.

Soak Zone—It exposes the PCB to a stable temperature that allows the components to reach a uniform temperature. It allows the flux to concentrate and the volatiles to escape from the paste.

Reflow Zone—It is the spike zone, which elevates the temperature of the PCB assembly from the activation temperature to the recommended peak temperature.

Application Instructions

Read the product SDS for more detailed instructions before using this product.

1. Take solder paste out of refrigerator and allow it to reach room temperature prior use.
2. Remove the cap from the syringe. Do not discard cap.
3. Insert plunger to the back of the syringe. For better control, insert needle to the tip.
4. Dispense paste onto the desired area and place component on top.
5. Apply heat using a heat gun.
6. Clean tip to prevent contamination and material buildup.
7. Replace the cap on the syringe.
8. (Optional) Clean residue with MG #8241-T or #8241-W Isopropyl Alcohol Wipes.

Disclaimer: This information is believed to be accurate. It is intended for professional end-users who have the skills required to evaluate and use the data properly. M.G. Chemicals Ltd. does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred while using it.