

R500 Solder Paste

Dispensable Water Soluble Solder Paste

Product Description

Kester R500 Solder Paste is a water soluble solder paste formula specifically designed as a consistent dot dispensing paste for automated dispense equipment. This solder paste exhibits excellent wetting characteristics in a wide range of profiles. The activator package in this formula is extremely aggressive. It is active enough to remove tenacious oxide layers or to solder to OSP coated boards. R500 maintains its activity and tackiness characteristics for up to 8 hours.

Performance Characteristics:

- Excellent dispensing characteristics using 21 gauge needles and Type 3 powder
- Capable of dispensing rate of 4 dots per second
- Leaves bright/shiny solder joints after reflow
- Scrap is reduced due to minimal paste clogging and separation
- Residues easily removed with DI water
- Classified as ORM0 per J-STD-004

Standard Applications:

- 86% Metal – Syringe Dispensing

Physical Properties

(Data given for Sn63Pb37 86% metal, -325 +500 mesh)

Viscosity (typical): 1000 poise

Malcom Viscometer @ 10 rpm and 25 °C

Initial Tackiness (typical): 45 grams

Tested to J-STD-005, IPC-TM-650, Method 2.4.44

Slump Test: Pass

Tested to J-STD-005, IPC-TM-650, Method 2.4.35

Solder Ball Test: Preferred

Tested to J-STD-005, IPC-TM-650, Method 2.4.43

Wetting Test: Pass

Tested to J-STD-005, IPC-TM-650, Method 2.4.45

Reliability Properties**Copper Mirror Corrosion:** Low

Tested to J-STD-004, IPC-TM-650, Method 2.3.32

Corrosion Test: Low

Tested to J-STD-004, IPC-TM-650, Method 2.6.15

Silver Chromate: Pass

Tested to J-STD-004, IPC-TM-650, Method 2.3.33

Chloride and Bromides: None Detected

Tested to J-STD-004, IPC-TM-650, Method 2.3.35

Fluorides by Spot Test: Pass

Tested to J-STD-004, IPC-TM-650, Method 2.3.35.1

Surface Insulation Resistance (SIR) IPC (typical): Pass

Tested to J-STD-004, IPC-TM-650, Method 2.6.3.3

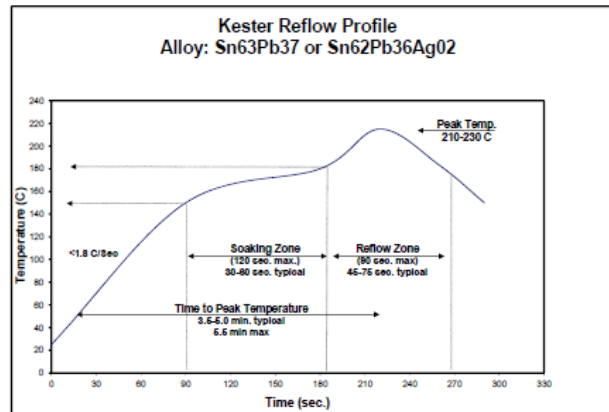
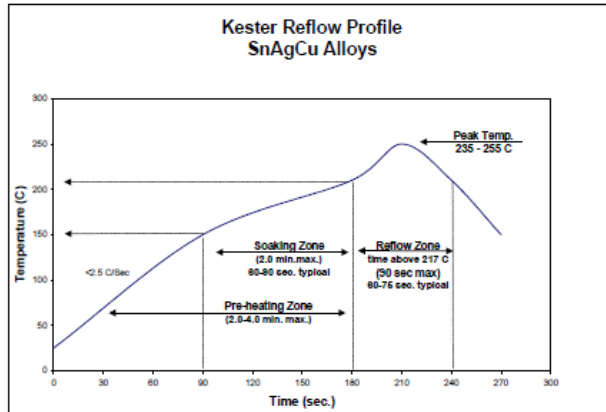
	Blank	R500
Day 1	$1.9 \times 10^{10} \Omega$	$1.4 \times 10^8 \Omega$
Day 4	$1.1 \times 10^{10} \Omega$	$2.0 \times 10^8 \Omega$
Day 7	$8.3 \times 10^9 \Omega$	$8.3 \times 10^9 \Omega$

Availability

Kester R500 is available in SAC305 and Sn63Pb37 alloys with Type 3 powder. Please visit <https://www.kester.com> for additional information.

Recommended Reflow Profile

The recommended reflow profiles for R500 made with the SAC305 and Sn63Pb37 alloys are shown here. This profile is simply a guideline. Since R500 is a highly active, water soluble solder paste, it can solder effectively over a wide range of profiles. Your optimal profile may be different from the one shown based on your oven, board and mix of defects. Please contact Kester Technical Support if you need additional profiling advice.



Cleaning

R500 residues are best removed using automated cleaning equipment (in-line or batch). Deionized water is recommended for the final rinse. Water temperatures should be 49 to 60 °C (120 to 140 °F). Kester's 5768 Bio-Kleen[®] saponifier can also be used in a 1 to 2% ratio for aqueous cleaning systems.

Storage, Handling and Shelf Life

Refrigeration is the recommended optimum storage condition for solder paste to maintain consistent viscosity, reflow characteristics, and overall performance. R500 should be stabilized at room temperature prior to dispensing. R500 should be kept at standard refrigeration temperatures, 0 to 10 °C (32 to 50 °F). Please contact Kester if you require additional advice with regard to storage and handling of this material. Shelf life for both SAC305 and Sn63Pb37 alloys is 6 months from date of manufacture and held at 0 to 10 °C (32 to 50 °F).

Health and Safety

This product, during handling or use, may be hazardous to your health or the environment. Read the Safety Data Sheet and warning label before using this product. Safety Data Sheets are available at <https://www.kester.com/downloads/sds>.

Contact Information

To confirm this document is the most recent version, please contact Assembly@MacDermidAlpha.com

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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE. Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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