R560 Solder Paste

Water Soluble

Product Description

Kester R560 is an organic acid, water soluble solder paste formula specifically designed to reduce voiding in Ball Grid Array (BGA) solder connections. The voiding in BGAs is shown to be reduced from 25% to less than 5%. R560 is also resistant to extremes in temperature and relative humidity. R560 is designed to be slump resistant in high humidity conditions. The solder paste exhibits long stencil life and tack time, while still delivering exceptional solderability to a wide variety of metallic substrates. The activator package in this formula is very aggressive, providing superior wetting to OSP coated boards and Ag/Pd leaded components. R560 is an extremely stable water soluble formula.

Performance Characteristics:

- Reduces BGA voiding to under 5%
- 8 hour stencil life
- Consistent printing over a range of temperatures and humidity levels
- Wets excellently to Ag/Pd leaded components
- Reduces scrap due to less paste dry out
- Residues easily removed with hot DI water
- Classified as ORHO per J-STD-004
- Compatible with enclosed printing systems

Standard Applications:

90% Metal - Stencil Printing

90% Metal - Enclosed Head Printing

Physical Properties

(Data given for Sn63Pb3, 790% metal, -325+500 mesh)

Viscosity (typical): 1900 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: Pass
Tested to J-STD-005, IPC-TM-650, Method 2.4.45

Reliability Properties

Copper Mirror Corrosion: High
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 Resistivity (SIR): Pass
Tested to J-STD-004, IPC-TM-650, Method 2.6.3.3

	Blank	R560
Day 1	2.76×10^9 Ω	4.60×10^8 Ω
Day 4	1.32×10^9 Ω	1.97×10^9 Ω
Day 7	1.22×10^9 Ω	3.04×10^9 Ω

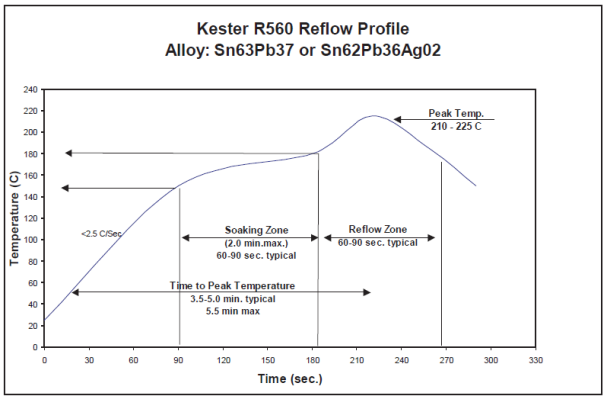
Availability

R560 is commonly available in the Sn63Pb37 and Sn62Pb36ag02 alloys. Type 3 powder mesh is recommended, but different powder particle size distributions are available for standard and fine pitch applications. R560 is compatible with enclosed print head systems. For specific packaging information on available sizes visit the R560 Product Offerings page at Kester.com. The appropriate combination depends on process variables and the specific application.

Printing Parameters

Printing Process Parameters	Recommendations
Squeegee Blade	80 to 90 durometer polyurethane or stainless steel
Squeegee Speed	Capable to a maximum speed of 50 mm/sec (2 in/sec)
Stencil Material	Stainless Steel, Molybdenum, Nickel Plated, Brass
Temperature/Humidity	Optimal ranges are 21 to 25 °C (70 to 77 °F) and 35 to 65% RH

Recommended Reflow Profile



The recommended reflow profile for R560 made with either the Sn63Pb37 or Sn62Pb36Ag02 is shown here. This profile is simply a guideline.

Since R560 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

R560 residues are best removed using automated cleaning equipment (in-line or batch) within 24 hours of soldering. 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.

Recycling Services

We provide safe and efficient recycling services to help companies meet their environmental and legislative requirements and at the same time, maximize the value of their waste streams.

Our service collects solder dross, solder scrap, and various forms of solder paste waste. Please contact your local sales representative for recycling capabilities in your area or link here.

Storage, Handling and Shelf Life

Refrigeration is the recommended optimum storage condition for solder paste to maintain consistent viscosity, reflow characteristics and overall performance. R560 should be stabilized at room temperature prior to printing. R560 should be kept at standard refrigeration conditions, 0 to 10°C (32 to 50 °F). Please contact Kester if you require additional advice with regard storage and handling of this material. Shelf life is 6 months from date of manufacture when handled properly 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 this link.

Contact Information

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

North America	Europe	Asia Pacific
109 Corporate Blvd. South Plainfield, NJ 07080, USA 1.800.253.7837	Unit 2, Genesis Business Park Albert Drive Woking, Surrey, GU21 5RW, UK 44.01483.758400	8/F., Paul Y. Centre 51 Hung To Road Kwun Tong, Kowloon, Hong Kong 852.3190.3100

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