

EP256 Solder Paste

No-Clean

Product Description

EP256 is a no-clean, air or nitrogen reflowable, solder paste specifically designed for maximum robustness in reflow profiling and stencil printing. EP256 has the widest possible reflow processing window. EP256 is capable of stencil printing downtimes of up to 90 minutes with an effective first print down to 20 mils. EP256 is a solder paste formula that maintains its activity and printing characteristics for up to 8 hours without any shear thinning.

Performance Characteristics:

- Stable wetting behavior over a wide range of profiles
- Capable of 90 minute break times in printing
- High print speeds to 200+ mm/sec (8+ in/sec)
- Compatible with enclosed print head systems
- Excellent printing characteristics to 0.4 mm (16 mil) pitch with Type 3 powder
- High activity on all substrates, including OSPs
- Capable of off-pad printing with no solder balls after reflow
- Stencil life: 8+ hours (process dependent)
- Scrap is reduced due to less paste dry out
- Stable tack over 8+ hours
- Classified as ROL1 per J-STD-004B

Standard Applications:

Stencil Printing: 90% Metal

Enclosed Head Printing: 90% Metal

RoHS Compliance

Kester does not determine any applicable Restriction of Hazardous Substances (RoHS) exemptions for our lead containing products at the user level.

Physical Properties

(Data given for Sn63Pb37, 90% metal, -325+500 mesh)

Viscosity (typical): 1400 poise

Malcom Viscometer @ 10 rpm and 25 °C

Initial Tackiness (typical): 40 grams

Tested to Kester Method 1W-QC-3-04

Slump Test: Pass

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

Solder Ball Test: Pass

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-004B, IPC-TM-650, Method 2.3.32

Corrosion Test: Low

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

Electrochemical Migration (ECM): Pass

Tested to J-STD-004B, IPC-TM-650, Method 2.6.14.1

Test Conditions: 65 °C, 85% RH, 25 days, 100V

Fluorides by Spot Test: Pass

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

Surface Insulation Resistance (SIR): Pass

Tested to J-STD-004B, IPC-TM-650, Method 2.6.3.7

Surface Insulation Resistance (SIR): Pass

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

	Blank	EP256
Day 1	$1.0 \cdot 10^{10} \Omega$	$9.8 \cdot 10^8 \Omega$
Day 4	$1.3 \cdot 10^{10} \Omega$	$1.6 \cdot 10^9 \Omega$
Day 7	$1.3 \cdot 10^{10} \Omega$	$1.1 \cdot 10^9 \Omega$

Availability

EP256 is commonly available in the Sn63Pb37, Sn62Pb36Ag2 and Sn43Pb43Bi14 alloys. Type 3 powder mesh is recommended, but different powder particle size distributions are available for standard and fine pitch applications. For specific packaging information, see Kester's website for available sizes. The appropriate combination depends on process variables and the specific application.

Printing Parameters

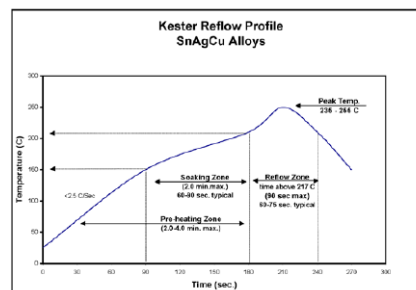
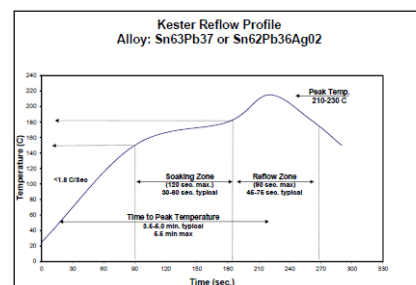
Squeegee Blade	Stainless Steel or 80 to 90 Durometer Polyurethane
Squeegee Speed	Capable to a maximum speed of 200 mm/sec (8 in/sec)
Stencil Material	Stainless Steel, Molybdenum, Nickel Plated, Brass
Temperature/Humidity	Optimal ranges are 21 to 25 °C (70 to 77 °F) and 35 to 65% RH

Recommended Reflow Profile

The recommended reflow profile for EP256 made with either the Sn63Pb37 or Sn62Pb36Ag02 is shown here. This profile is simply a guideline. Since EP256 is a highly active solder paste, it can solder effectively over a wide range of profiles, including lead-free profiles in some cases.

EP256 is capable of reflowing at the 235 °C peak temperatures required for fully collapsing lead-free SAC BGAs for maximum reliability and remains easy to clean after these high temperature profiles. Your optimal profile may be different from the one shown based on your oven, board and mix of components.

Contact Kester Technical Support if you need additional profiling advice.



Cleaning

EP256 is a no-clean formula. The residues don't need to be removed for typical applications. Although EP256 is designed for no-clean applications, its residues can be easily removed using automated cleaning equipment (in-line or batch) with a variety of readily available cleaning agents.

Storage, Handling and Shelf Life

Refrigeration is the recommended optimum storage condition for solder paste to maintain consistent viscosity, reflow characteristics and overall performance. EP256 should be stabilized at room temperature prior to printing. EP256 should be kept at standard refrigeration conditions, 0 to 10 °C (32 to 50 °F). Contact Kester Technical Support if you require additional advice with regard storage and handling of this material. Shelf life is 6 months from the date of manufacture when handled properly when 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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