MacDermid Alpha ELECTRONICS SOLUTIONS

TECHNICAL DATA SHEET

KESTER® FL250D SOLDER PASTE

No-Clean

DESCRIPTION

Kester FL250D Solder Paste is a no-clean, air or nitrogen reflowable, solder paste specifically designed for automotive requirements. FL250D is compatible with post-soldering process chemicals, including conformal coatings and potting compounds. FL250D is capable of stencil printing downtimes of up to 90 minutes with an effective first print at 20 mils. FL250D also has the capability of printing up to 200 mm/sec (8 in/sec) with squeegees or within an enclosed head.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

- Excellent residue characteristics that are completely compatible with conformal coating and potting processes
- High print speeds to 200 mm/sec (8 in/sec)
- Compatible with 0201 technology
- Excellent printing characteristics to 0.4 mm (16 mil) pitch with Type 3 powder
- Excellent wetting on a variety of substrates, including OSPs
- Capable of 90 minute break times in printing
- Stencil life: 8+ hours (process dependent)
- Scrap is reduced due to less paste dry out
- Stable tack over 8+ hours
- Classified as ROL0 per J-STD-004
- Compatible with DEK ProFlow™ and MPM RheoPump™ enclosed print head systems

STANDARD APPLICATIONS

Stencil Printing: 90% Metal
Enclosed Head Printing: 90% Metal

TECHNICAL DATA

Category	Results	Procedure/Remarks
Physical Properties (Data given for Sn63Pb37, 90% metal, -325+500 mesh)		
Viscosity (typical)	1600 poise	Malcom Viscometer @ 10 rpm and 25 °C
Initial Tackiness (typical)	42 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	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), IPS (Typical)	Pass	Tested to J-STD-004, IPC-TM-650, Method 2.6.3.3

	Blank	FL250D
Day 1	1.5×10^{10} Ω	5.3×10^{9} Ω
Day 4	6.0×10^{9} Ω	2.6×10^{9} Ω
Day 7	5.5×10^{9} Ω	2.9×10^{9} Ω

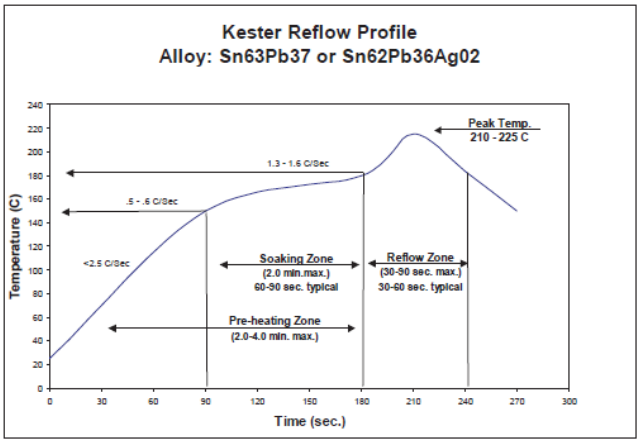
PROCESSING GUIDELINES

Printing Parameters

Squeegee Blade	80 to 90 durometer polyurethane or stainless steel
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 FL250D made with Sn63Pb37 and Sn62Pb36Ag02 alloys are shown here. This profile is simply a guideline. Since FL250D is a highly active 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 MacDermid Alpha Technical Support if you need additional profiling advice.



Cleaning

FL250D is a no-clean formula. The residues do not need to be removed for typical applications. Although FL250D 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. Call MacDermid Alpha Technical Support for details.

Storage, Handling and Shelf Life

Refrigeration is the recommended optimum storage condition for solder paste to maintain consistent viscosity, reflow characteristics and overall performance. FL250D should be stabilized at room temperature prior to printing. FL250D should be kept at standard refrigeration conditions, 0 to 10 °C (32 to 50 °F). Please contact MacDermid Alpha if you require additional advice with regard storage and handling of this material. Shelf life is 4 months from the date of manufacture when handled properly and held at 0 to 10 °C (32 to 50 °F).

AVAILABILITY

Kester FL250D is available in the Sn63Pb37 and Sn62Pb36Ag02 alloys with Type 3 powder. 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 Solder Paste Packaging Chart for available sizes. The appropriate combination depends on process variables and the specific application.

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.

SAFETY & WARNING

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available.**

CONTACT INFORMATION

www.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