

FL250D Solder Paste

No-Clean

Product 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.

Performance Characteristics:

- 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

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:** Low

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

Copper 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	$1.5 \times 10^{10} \Omega$	$5.3 \times 10^9 \Omega$
Day 4	$6.0 \times 10^9 \Omega$	$2.6 \times 10^9 \Omega$
Day 7	$5.5 \times 10^9 \Omega$	$2.9 \times 10^9 \Omega$

Availability

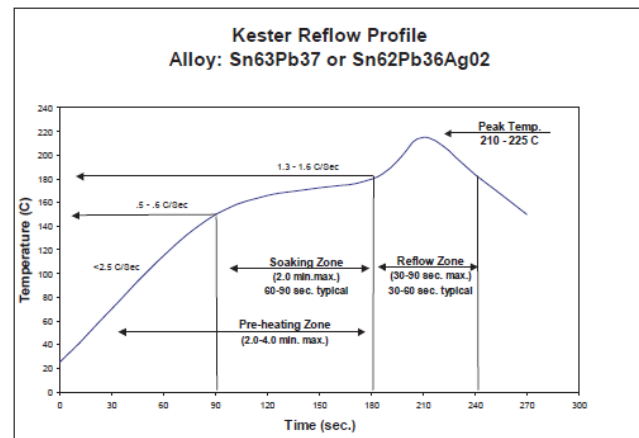
Kester FL250D is available in the Sn63Pb37 and Sn62Pb36Ag02 alloys with Type 3 powder. Type 3 powder mesh is recommended, but different powder particle size distributions are available for standard and fine pitch applications. For specific packaging information see Kester's Solder Paste Packaging Chart for available sizes. The appropriate combination depends on process variables and the specific application.

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 Kester 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 Kester 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 Kester 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).

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

North America 800 West Thorndale Avenue Itasca, IL USA 60143 Phone: +1 800.2.KESTER	Asia Pacific 8/F., Paul Y. Centre 51 Hung To Road Kwun Tong, Kowloon, Hong Kong Phone: +852.3190.3100	Europe Ganghofer Strasse 45 82216 Gernlinden, Germany Phone: +49 (0) 8142 4785 0
---	--	--

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

DISCLAIMER: All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed. No statement or recommendation shall constitute a representation unless set forth in an agreement signed by officers of seller and manufacturer. NO WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY IS MADE. The following warranty is made in lieu of such warranties and all other warranties, express, implied, or statutory. Products are warranted to be free from defects in material and workmanship at the time sold. The sole obligation of seller and manufacturer under this warranty shall be to replace any noncompliant product at the time sold. Under no circumstances shall manufacturer or seller be liable for any loss, damage or expense, direct, indirect, incidental or consequential, arising out of the inability to use the product. Notwithstanding the foregoing, if products are supplied in response to a customer request that specifies operating parameters beyond those stated above, or if products are used under conditions exceeding said parameters, the customer by acceptance or use thereof assumes all risk of product failure and of all direct, indirect, incidental and consequential damages that may result from use of the products under such conditions, and agrees to exonerate, indemnify, defend and hold harmless MacDermid, Incorporated and its affiliates therefrom. No suggestion for product use nor anything contained herein shall be construed as a recommendation to use any product in a manner that infringes any patent or other intellectual property rights, and seller and manufacturer assume no responsibility or liability for any such infringement.

© 2019 MacDermid, Inc. and its group of companies. All rights reserved. "®" and "™" are registered trademarks of MacDermid, Inc. and its group of companies in the United States and/or other countries.