

ALPHA[®] OL107E

Solder Paste for Fine Pitch Stencil Printing

DESCRIPTION

ALPHA OL107E is a solder paste designed for stencil printing application in a surface mount process.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

- Delivers consistent print performance even after 8 hours of continuous use
- Excellent fine-feature cosmetics demonstrated by bright, shiny joints
- Clear, colorless flux residues engineered not to spread onto either the board or components providing satisfactory pint testing
- Provides fine feature print volume consistency to 0.4 mm pitch QFPs even after one hour of downtime
- Excellent solder spread
- Exceeds both JIS and IPC requirements for random solder balling

PRODUCT INFORMATION

<u>Alloys:</u>	Sn63Pb37, NT4S, Sn62Pb36Ag2
<u>Powder Size:</u>	Type 3 (25 to 45 µm), Type 4 (20 to 38 µm)
<u>Packaging Sizes:</u>	500 gram & 6 inch cartridges
<u>Flux Gels:</u>	Flux gel is available in 30 cc syringes for rework applications

Note 1: For other alloys, powder size and packaging sizes, contact your local Alpha Sales Office.

APPLICATION GUIDELINES

Formulated for standard and fine pitch printing through stencil apertures as small as 0.125 mm (5 mil). ALPHA OL107E is designed to provide high post-reflow yield while maintaining excellent solder joint cosmetics.

TECHNICAL DATA

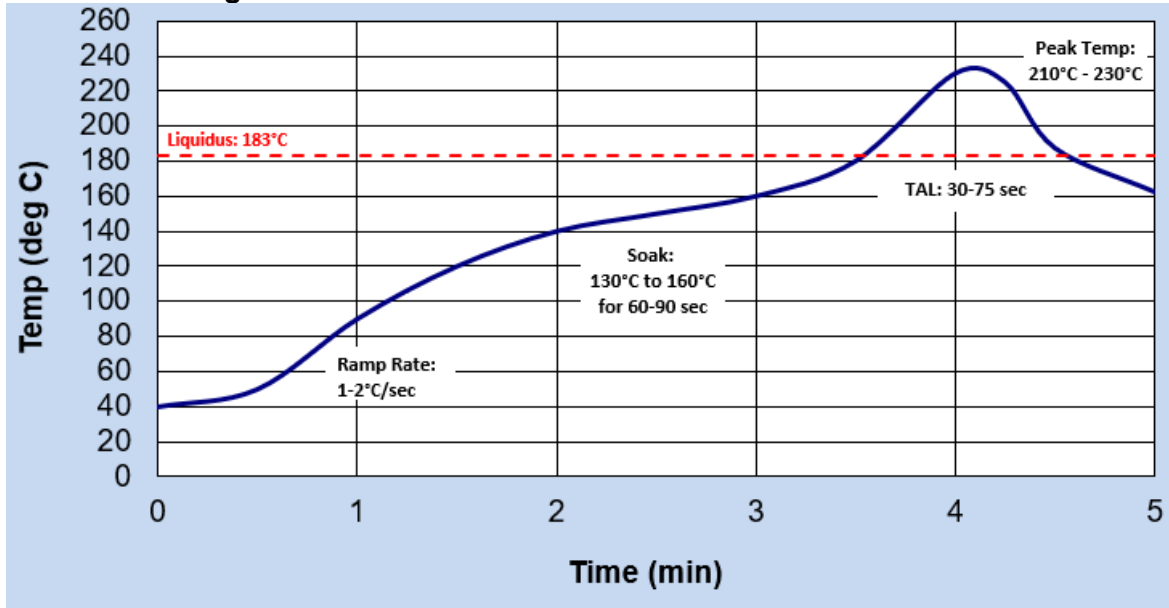
Category	Results	Procedures/Remarks
Chemical Properties		
Activity Level	ROLO	IPC J-STD-004
Halide Content	Halide free (by titration), Passes Ag Chromate Test	MIL-F-14256
Fluoride Spot Test	Pass	MIL-F-14256
Copper Mirror & Copper Corrosion Test	Pass	JIS Z 3197
Electrical Properties		
SIR (7 days, 85 °C/85%RH)	Pass; 4.2×10^9 ohms	IPC J-STD-004 (Pass > 1×10^8 ohm)
SIR (96hrs @35°C/85%RH)	Pass; 1.7×10^{13} ohms	Bellcore GR-78-CORE (Pass $\geq 1 \times 10^{11}$ ohm)
Physical Properties		
Color	Clear, Colorless Flux Residue	
Tackiness Test	≥ 95 gf for 24 hours	JIS Z 3284
Solder Ball	Pass	IPC J-STD-005; JIS Z 3284
Spreading Test	94% for Sn63Pb37	JIS Z 3197
Stencil Life	8 hours	@ 50% RH 23 °C (74 °C)
Hot Slump	Pass; No bridge for 0.2 mm space	JIS Z 3284

PROCESSING GUIDELINES

Storage & Handling	Printing	Reflow (see Fig. 1)	Cleaning
<ol style="list-style-type: none"> 1. Refrigerate to guarantee stability @ 0 to 10 °C (32 to 50 °F). When stored under these conditions, the shelf life of ALPHA OL107E is 4 months. 2. When refrigerated, warm up paste container to room temperature for up to 4 hours. Paste must be 20 °C (68 °F) before processing. Verify paste temperature with a thermometer to ensure paste is at 20 °C (68 °F) to 23 °C (73.4 °F) before setting up of printer. Recommended operating conditions for ALPHA OL107E is 23 to 25 °C (73.4 to 77 °F) and 40 to 60% RH. 3. Do not remove worked paste from stencil and mix with unused paste in jar. This will alter the rheology of unused paste. 4. These are starting recommendations and all process settings should be reviewed independently. 	<p>Stencil: Recommend ALPHA CUT or ALPHA FORM stencils @ 0.125 mm (5 mil) thick. Stencil design is subject to many process variables. Contact your local Alpha stencil site for advice.</p> <p>Squeegee: Metal (recommended)</p> <p>Pressure: 0.29 to 0.47 kg/cm of squeegee length</p> <p>Speed: 25 to 200 mm per second (1 to 8 inches per second).</p> <p>Paste Roll: 1.5 to 2.0 cm diameter and make additions when roll reaches 1-cm (0.4 in) diameter (min). Max roll size will depend upon blade.</p>	<p>Atmosphere: Clean-dry air or nitrogen atmosphere.</p> <p>Profile: Please see profile chart below for ALPHA OL107E Sn63Pb37 Typical Reflow Profile.</p>	<p>ALPHA OL107E residue is designed to remain on the board after reflow.</p> <p>Misprints and soft flux residues remaining after rework may be removed using semi-aqueous cleaners.</p>

REFLOW PROFILES

Figure 1 –General Soak Reflow Profile Recommendation



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](#).



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 at MacdermidAlpha.com/assembly-solutions/knowledge-base.**

STORAGE

ALPHA OL107E is shipped in thermally controlled boxes and should be stored refrigerated upon receipt at 0 to 10 °C (32 to 50 °F), which will be sufficient to maintain a nominal shelf life of four months. ALPHA OL107E should be permitted to reach room temperature before unsealing its package prior to use (see handling procedures on page 3). This will prevent moisture condensation build up in the solder paste.

CONTACT INFORMATION

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

<p>North America 109 Corporate Blvd. South Plainfield, NJ 07080, USA 1.800.367.5460</p>	<p>Europe Unit 2, Genesis Business Park Albert Drive Woking, Surrey, GU21 5RW, UK 44.01483.758400</p>	<p>Asia 8/F., Paul Y. Centre 51 Hung To Road Kwun Tong, Kowloon, Hong Kong 852.3190.3100</p>
---	--	---

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. "R" and "TM" are registered trademarks or trademarks of MacDermid, Inc. and its group of companies in the United States and/or other countries.