

# ALPHA<sup>®</sup> HF-1 FLUX GEL

Rosin-Based Paste Flux

Americas Only

## DESCRIPTION

**ALPHA HF-1 Flux Gel** is a rosin-based paste flux designed for rework of surface mount and other demanding electronic assembly applications. Because of its unique activator package and other special additives, **ALPHA HF-1 Flux Gel** is suitable to remain on the circuit board without cleaning. **ALPHA HF-1 Flux Gel**'s activator system also enables the flux to penetrate even moderately tarnished surfaces.

\* Process settings may need to be adjusted in special instances.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

## FEATURES AND BENEFITS

- **Wide Reflow Profile Window:** allows best quality solderability of complicated, high-density PWB assemblies in both air and nitrogen reflow, using straight ramp or soak profiles up to 300 °C.
- **Excellent Solder Joint and Flux Residue Cosmetics:** after reflow soldering even using long/high thermal soaking without charring or burning.
- **Broad Range of Rework Capabilities:** Can be used for all touch up & hand soldering operations as well as BGA repair/re-balling and QFN/LGA repair.

## PRODUCT INFORMATION

Packaging Sizes: 10cc syringe, 30cc syringe, 100 gram jar  
Environmental Compliance: Complies with RoHS Directive 2011/65/E

**APPLICATION GUIDELINES**

ALPHA HF-1 Flux Gel Paste Flux may be applied by screen printing or pin transfer (substrate) or doctor blade / dip coating (package). It can also be dispensed.

ALPHA HF-1 Flux Gel can be safely left on the circuit board after reflow without cleaning. If cleaning is desired, most commercially available electronic assembly cleaning solvents are effective, including ALPHA 565. Flux residues are also removable by saponification with ALPHA 2110 in water.

**TECHNICAL DATA**

Category	Results	Procedure/Remarks
<b>Chemical Properties</b>		
Activity Level	ROLO	IPC J-STD-004
Cu Mirror Corrosion Test	<b>Pass</b>	IPC J-STD-004
Halide Content	<b>Halide - Free</b>	Based on Formulation
<b>Electrical Properties</b>		
SIR (Bellcore 96 hours @ 35 °C /85%RH)	<b>Pass</b> , 2.5 x 10 <sup>11</sup> ohms	Bellcore GR78-CORE (Pass ≥ 1 x 10 <sup>11</sup> ohm)
Electromigration (Bellcore 500 hrs @ 65 °C /85%RH 10V)	<b>Pass</b> , 2.2 x 10 <sup>10</sup> ohms	Bellcore GR78-CORE (Pass=final > initial/10)
IPC SIR (7 days @ 85 °C/85% RH)	<b>Pass</b> , 1.1 x 10 <sup>9</sup> ohms	IPC J-STD-004A (Pass > 10 <sup>8</sup> )
HP Electrochemical Migration (28 days @ 50 °C/90%RH 10V)	<b>Pass</b>	HP ECM
<b>Physical Properties</b>		
Color	Smooth, Amber Paste	
Viscosity 5rpm at 25 °C by Malcom Viscometer	400 to 1000 Poise	
Fineness of Grind (um)	<10 μm	

REFLOW PROFILES

Figure 1: Typical Lead-Free Reflow Profile

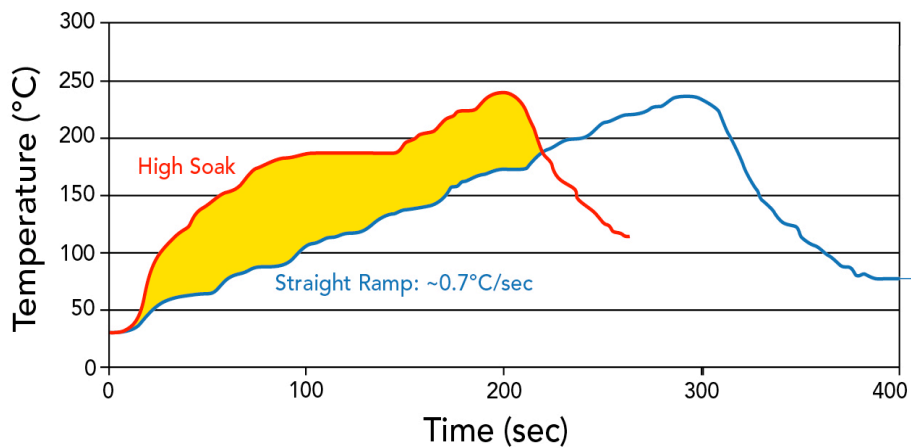
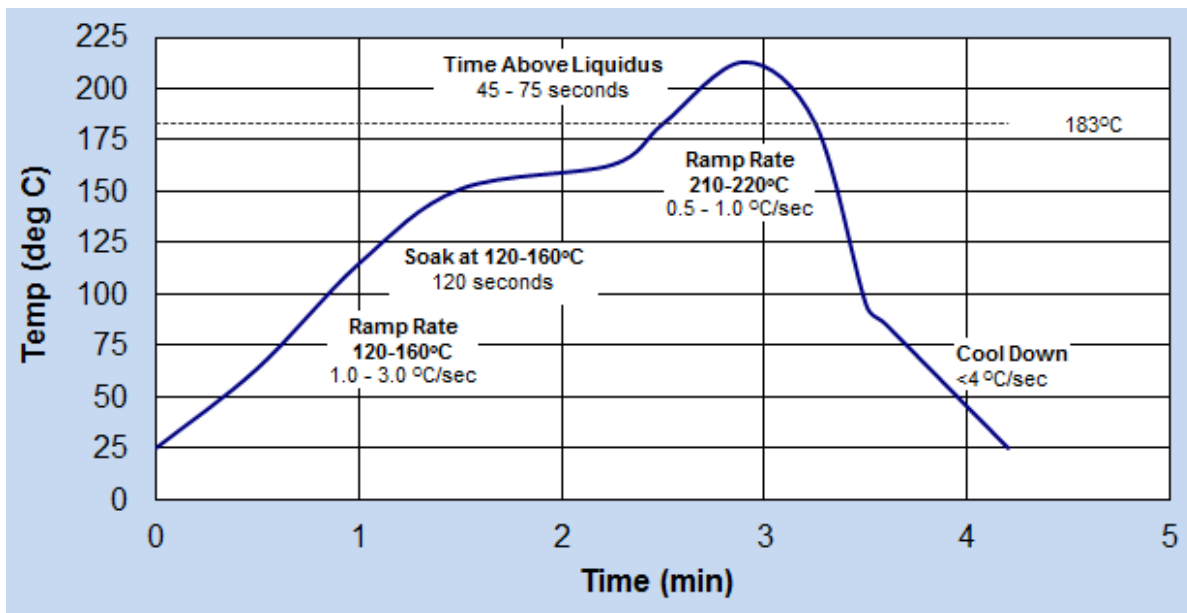


Figure 2: Typical 63Sn37Pb Reflow Profile



Note: This profile was tested in the lab with acceptable reflow and coalescence performance, optimization to each board application should still be carried out by users to ensure best results.

**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](http://MacdermidAlpha.com/assembly-solutions/knowledge-base).**

**STORAGE**

The paste flux should be stored in sealed containers and need not be refrigerated. The shelf life of unopened containers at room temperature (19 to 25 °C / 66 to 77 °F) is up to 12 months from the manufacturing date. If the material has been exposed to lower temperatures, the containers should be allowed to reach room temperature before opening to prevent moisture condensation from ambient air onto the flux.

**CONTACT INFORMATION**

**To confirm this document is the most recent version, please contact  
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[www.macdermidalpha.com](http://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

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