

# ALPHA<sup>®</sup> RMA-376 EH

Type L3NC Per IPC-SP-819 (ROM1 per J-STD-004)

## DESCRIPTION

**ALPHA RMA-376 EH** is a rosin based solder paste designed for surface mount processes and other demanding electronics assembly applications where post reflow cleaning is used. Because of its unique activator package and other special additives, **ALPHA RMA-376 EH** is suitable to be left on the circuit board without cleaning.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

## APPLICATION GUIDELINES

ALPHA RMA-376 EH is best applied by stencil or by screen printing. Working time on the stencil is four hours and tack life is four hours. The number 3 particle size configuration is suitable for printing through stencil apertures as small as 9 mils in the smallest dimension or through screens of 180 mesh. The type 2 particle size configuration is capable of printing through apertures down to 15 mils in the smallest dimension or through screens of 105 mesh.

ALPHA RMA-376 EH's activator system enables the flux to penetrate even moderately tarnished surfaces among the following metal:

Silver	Solder (Creams)	Solder (Hot Dip)
Cadmium (Plate)	Copper	Gold
Tin (Hot Dip)	Tin (Plate)	

### Placement

Nominal squeegee speeds from 20mm/second to 25mm/second are suitable as beginning settings. Roll diameter cross-section should be 1.25 to 1.50cm. Stencil aspect ratio (width of smallest aperture divided by stencil thickness;  $W_a/T_s$ ) should be 2.0 or greater as an initial setting.

### Residue

ALPHA RMA-376 EH can be safely left on the circuit board after reflow without cleaning. If cleaning is desired, most commercial electronic assembly cleaning solvents are effective including ALPHA 565, Bioact EC-7, or EC-7R. Bioact is a semi-aqueous cleaner designed to meet the most demanding cleaning requirements with complete environmental compatibility. Flux residues can also be removed by saponification with ALPHA 2110 in water.

**TECHNICAL DATA**

Category	Results
<b>Physical Properties</b>	
Water Extract Resistivity	>100,000 ohm-cm; RMA
Corrosiveness	Passes Copper Mirror
Halide Content	Passes Silver Chromate Paper Test
SIR (ohms) 11 days	>10 <sup>8</sup> comb up or down, cleaned or uncleaned
Residues	Approximately 7% by weight; suitable to leave on board

**PROCESSING GUIDELINES**
**Storage & Handling**

High ambient temperatures should be avoided in the handling of ALPHA RMA-376 EH. It is shipped in thermally controlled cartons and should be stored refrigerated upon receipt. Storage temperatures of 0 to 10 °C (32 to 50 °F) are sufficient to maintain ALPHA RMA-376 EH's nominal shelf life of six months. ALPHA RMA376 EH should be allowed to achieve room temperature before unsealing the package.

**Cleaning**

The production environment should be 18 to 27 °C (65 to 80 °F) and 30 to 60% relative humidity. Production stencils can be cleaned using Bioact EC-8 at 60 to 66 °C (140 to 150 °F) followed by hot air drying.

**VISCOMETRY**

ALPHA RMA-376 EH is designed as a primary printing formulation. For printing through screens, viscosities between 1500 and 2200 poise, as measured by spiral viscometry, are suitable. For stencil printing, these viscosities can vary between 2300 and 4500 poise.

**REFLOW PROFILES**

ALPHA RMA-376 EH can be successfully reflowed in infrared, convection, hot stage, hot bar, belt or vapor phase systems. Since circuit boards and components come to thermal equilibrium based on surface area and mass, the following board level temperatures are provided as an initial guide to reflow of ALPHA RMA-390DH4:

Ramp Rate:	1 to 3 °C/second to 120 to 160 °C
Soak:	120 to 160 °C for 1 to 2 minutes
Ramp Rate:	0.5 to 1 °C/second to 210 to 220 °C
Time Above Liquidous:	45 to 75 seconds

For other alloy systems, refer to Regional Technical Support for profiling recommendations.

**AVAILABILITY**

ALPHA RMA-376 EH is available in a variety of alloys; in particle size number two (2) and particle size number three (3); and in a variety of viscosities suitable for both screen and stencil printing.

**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).**

**CONTACT INFORMATION**

To confirm this document is the most recent version, please contact  
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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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