

# ALPHA® RMA-384-H SOLDER PASTE

Type L3NC Per IPC-SF-819

## DESCRIPTION

**ALPHA RMA-384-H** is a rosin solder paste specifically designed for dispensing applications where post reflow cleaning is used. Its thickener system is designed to produce smooth, uninterrupted flow through a needle or other dispensing apertures. **ALPHA RMA-384-H** is QPL listed, number 571-1018-86.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

## APPLICATION GUIDELINES

ALPHA RMA-384-H working time is approximately six hours in continuous dispensing operations. Optimum air pressure for pneumatic dispensing is 10 to 40 psi. Ideally, dispensing equipment should be capable of exerting a negative pressure to accomplish pull back and to give a clean break to the flow of solder at the end of the dispense cycle.

ALPHA RMA-384-H can be dispensed with needles ranging from 13 to 63 mils, inner diameter. The final deposit typically is 1.5 times the needle inner diameter. Standard particle size 2 is suitable for needle diameters down to 23 mils. For smaller needle diameters, particle size 3 should be used.

ALPHA RMA-384-H's activator system enables the flux to penetrate even moderately tarnished surfaces among the following surfaces:

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

**Residue Removal:** ALPHA RMA-384-H can be safely cleaned using most commercially electronic assembly cleaning solvents 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	
<b>Physical Properties</b>	<b>Typical Values</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

**VISCOMETRY**

Viscosities of ALPHA RMA-384-H suitable for pneumatic dispensing range between 1000 to 1600 poise using spiral viscometry or 300 to 400K cps using T-spindle devices. Maximum recommended dispensing viscosity is 1700 poise using a spiral viscometer at 5RPM.

**PLACEMENT**

The volume of the solder paste deposit is determined by the diameter of the orifice which is adjusted by fitting a suitable needle or tip to the dispensing cartridge. Needle length should be as short as ¼” and fittings with a re-entrant lip around the needle should be avoided. Sudden, dramatic changes in needle cross-section such as crimping or bending should be avoided as well.

Pneumatic dispensers using cartridges of solder paste fitted with sliding pistons are ideal for dot or strip placing solder paste. Multi-point placement is also possible using ALPHA RMA-384-H and certain specialized air dispensers can simultaneously place this formulation on multiple pads at 50 mil pitch.

## REFLOW PROFILES

ALPHA RMA-384-H 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-384-H:

Ramp Rate: 1 to 3 °C/second  
Ramp Rate: 1.2 °C/second  
Cure: 120 °C for 1 minute  
Preheat: 160 °C for 2 minutes  
Ramp Rate: 0.5 to 1 °C/second  
Reflow: 210 °C for 45 seconds

Total heating dwell time may be 5 to 7 minutes depending on thermal inertia and component sensitivity.

## AVAILABILITY

ALPHA RMA-384-H is available in a variety of alloys and viscosities; in particle size number two (2) and particle size number three (3); and in a variety of cartridges and syringes.

## 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**

High ambient temperatures should be avoided in the handling of ALPHA RMA-384-H. 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-384-H's nominal shelf life of six months. ALPHA RMA-384-H should be allowed to achieve room temperature before unsealing the cartridge or syringe.

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.

**CONTACT INFORMATION**

**To confirm this document is the most recent version, please contact [Assembly@MacDermidAlpha.com](mailto:Assembly@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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