

# ALPHA<sup>®</sup> POP-707 PASTE FLUX

## Package on Package BGA Flux

### DESCRIPTION

No Clean, Lead-Free, Paste Flux for Sub-Assembly Dip Applications

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

### APPLICATION GUIDELINES

The flux has been successfully evaluated on both Fuji and Siemens dip application equipment. An example of the application is shown on the second page.

### TECHNICAL DATA

#### Flux Properties

Attribute	Result
Appearance	Smooth, white to off-white paste
Viscosity (Spiral/Malcom)	Typically, 100 - 300 Poise @5 rpm @ 25 °C
<u>Tack strength (per IPC J-STD-004) Initial</u> 6 hr. @ 50% RH 24 hr. @ 50% RH	10.6 grams / sq. mm, typical 8.3 grams / sq. mm, typical 8.8 grams / sq. mm, typical
Fineness of Grind	<10 µm
Acid Number (mg KOH/g)	170 - 200
Corrosivity	Passes IPC Cu mirror, Cu corrosion
Halide Content	Halide free (ROLO per IPC J-STD-004)
Moisture Content	0.5 % (w/w) max
Specific Gravity	1.02 grams / cc
IPC J-STD-004 SIR (pass > 10 <sup>8</sup> ) IPC J-STD-004 SIR (pass > 10 <sup>8</sup> ) IPC J-STD-004 SIR (pass > 10 <sup>8</sup> ) BELLCORE SIR (pass > 10 <sup>11</sup> ) BELLCORE SIR (pass > 10 <sup>11</sup> )	4.2 x 10 <sup>9</sup> Ohms, 1 Day, un-cleaned 6.8 x 10 <sup>9</sup> Ohms, 4 Days, un-cleaned 8.9 x 10 <sup>9</sup> Ohms, 7 Days, un-cleaned 7.3 x 10 <sup>11</sup> Ohms, 1 Day, un-cleaned 3.5 x 10 <sup>11</sup> Ohms, 4 days, un-cleaned

Attribute	Result
Electromigration (500 hours) (BELLCORE)	1.6 x 10 <sup>11</sup> Ohms, 96 hours 4.0 x 10 <sup>11</sup> Ohms, 500 hours (pass: final > init /10)

## PROCESSING GUIDELINES

### Cleaning

Although designed as a no-clean flux system, the reflowed residue may be cleaned with ALPHA SM-110E. Production stencils or pin transfer equipment can be cleaned with ALPHA SM-110.

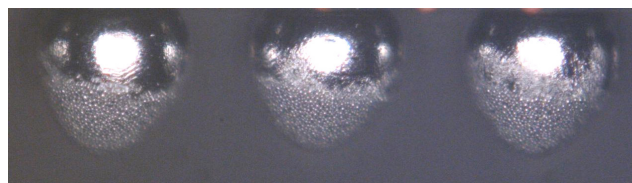
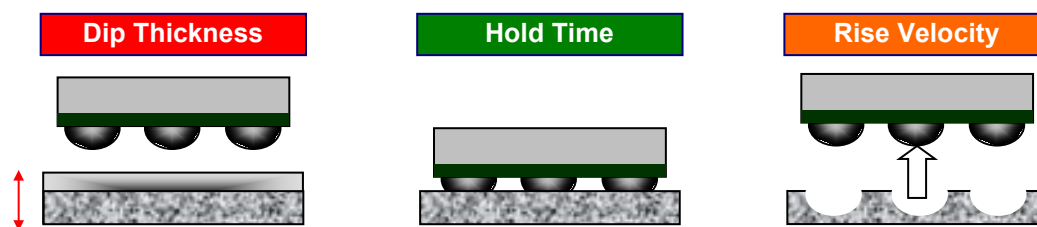
## REFLOW PROFILES

Reflow can be accomplished in dry air or nitrogen controlled atmosphere. The initial ramp rate should be 1 to 2 °C per second. If necessary, a dwell of 1 to 2 minutes at 130 to 160 °C is acceptable. Following this equilibrating period is a ramp of 60 to 120 °C to a peak temperature of 235 to 260 °C depending upon the alloy. The time over alloy liquidus should be 45 to 90 seconds. The cooling rate should be 3 to 7 °C per second at room temperature.

## TRANSFER PROPERTY

Transfer weight depends on bump transfer parameters such as dip thickness, hold time, and rise velocity. The optimal parameter should be determined according to your bump size and pitch.

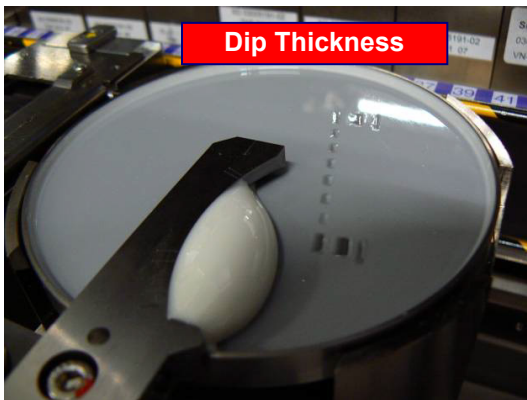
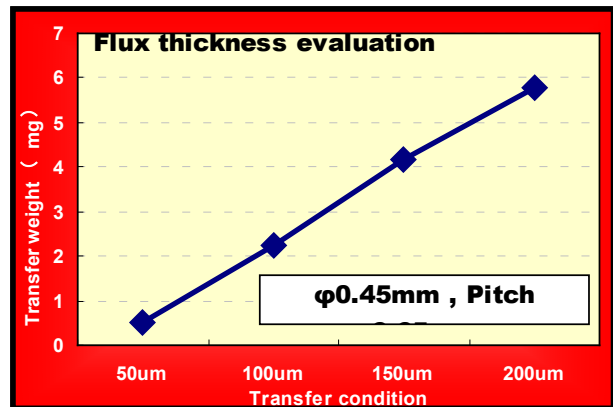
Generally, transfer amounts depend on flux thickness. Please adjust the flux thickness according to your bump diameter.



**Flux Application**



Flux Dispensed in Rotating Application Tray



Doctor Blade Regulates Flux Height

**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 6 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 [Assembly@MacDermidAlpha.com](mailto:Assembly@MacDermidAlpha.com)**

[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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