

# KESTER® EM808 SOLDER PASTE

**Lead-Free, Water Soluble**

## DESCRIPTION

Kester EM808 Solder Paste is a lead-free, organic acid, water soluble solder paste that provides users with the highest level of consistency and performance. Batch after batch, EM808 provides hours of stable stencil life, tack time and repeatable brick definition. EM808 robust printing characteristics result in consistent solder paste volume regardless of idle time, stencil life and print speed. The activator package in the EM808 is very aggressive and provides superior wetting to OSP coated and Immersion Silver boards.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

## FEATURES & BENEFITS

- Outstanding batch-to-batch consistency
- Lead-free
- Water soluble
- Excellent anti-slumping characteristics minimizing bridging defects
- Capable of 60 minute idle times in printing
- Print speed up to 150 mm/sec (6 in/sec)
- Excellent solderability to a wide variety of metalizations including Palladium, leaving bright, shiny joints
- Residues easily removed with hot DI water, even up to 48 hours after soldering
- Minimal foam in wash systems
- 8+ hour stencil life
- Compatible with enclosed print head systems
- Classified as ORH1 per J-STD-004, J-STD-004A & J-STD-004B

## STANDARD APPLICATIONS

Stencil Printing: 88% Metal

Enclosed Head Printing: 88% Metal

## ROHS COMPLIANCE

This product meets the requirements of the Restriction of Hazardous Substances (RoHS) Directive, 2015/863 for the stated banned substances.

## TECHNICAL DATA

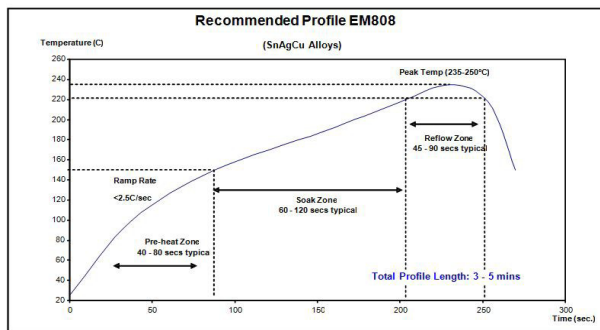
Category	Results	Procedure/Remarks	
Physical Properties (Data given for Sn96.5Ag3.0Cu0.5, 88% metal, -325+500 mesh)			
Viscosity (Typical)	1800 poise	Malcom Viscometer @ 10 rpm and 25 °C	
Initial Tackiness (Typical)	37 grams	Tested to J-STD-005, IPC-TM-650, Method 2.4.44	
Slump Test	Pass	Tested to J-STD-005, IPC-TM-650, Method 2.4.35	
Solder Ball Test	Preferred	Tested to J-STD-005, IPC-TM-650, Method 2.4.43	
Wetting Test	Pass	Tested to J-STD-005, IPC-TM-650, Method 2.4.45	
Reliability Properties			
Copper Mirror Corrosion	High	Tested to J-STD-004, IPC-TM-650, Method 2.3.32	
Corrosion Test	Low	Tested to J-STD-004, IPC-TM-650, Method 2.6.15	
Fluorides by Spot Test	Pass	Tested to J-STD-004, IPC-TM-650, Method 2.3.35.1	
Surface Insulation Resistivity (SIR), Typical	Pass	Tested to J-STD-004, IPC-TM-650, Method 2.6.3.3	
		Blank	EM808
	Day 1	1.9*10 <sup>10</sup> Ω	1.4*10 <sup>8</sup> Ω
	Day 4	1.1*10 <sup>10</sup> Ω	2.0*10 <sup>8</sup> Ω
	Day 7	8.3*10 <sup>10</sup> Ω	8.3*10 <sup>9</sup> Ω

## PROCESSING GUIDELINES

### Printing Parameters

<b>Squeegee Blade</b>	80 to 90 durometer polyurethane or stainless steel
<b>Squeegee Speed</b>	Capable to a maximum speed of 150 mm/sec (6 in/sec)
<b>Stencil Material</b>	Stainless Steel, Molybdenum, Nickel Plated, Brass
<b>Temperature/Humidity</b>	Optimal ranges are 21 to 25 °C (70 to 77 °F) and 35 to 65% RH

### Recommended Reflow Profile



The recommended reflow profile for EM808 made with SAC alloys is shown here. This profile is simply a guideline. Since EM808 is a highly active solder paste, it can solder effectively over a wide range of profiles. Your optimal profile may be different from the one shown based on your oven, board and mix of defects. Please contact MacDermid Alpha Technical Support if you need additional profiling advice.

### Cleaning

EM808 residues are best removed using automated cleaning equipment (in-line or batch) within 48 hours of soldering. De-ionized water is recommended for the final rinse. Water temperatures should be 49 to 60 °C (120 to 140 °F). Kester's 5768 Cleaner can also be used in a 1 to 2% ratio for aqueous cleaning systems.

### Storage, Handling and Shelf Life

Refrigeration is the recommended optimum storage condition for solder paste to maintain consistent viscosity, reflow characteristics, and overall performance. EM808 should be stabilized at room temperature prior to printing. EM808 should be kept at standard refrigeration temperatures, 0 to 10 °C (32 to 50 °F). Please contact MacDermid Alpha Technical Support if you require additional advice with regards to storage and handling of this material. Shelf life is 6 months from date of manufacture and held at 0 to 10 °C (32 to 50 °F).

## AVAILABILITY

EM808 is available in the Sn96.5Ag3.0Cu0.5 and Sn96Ag4 alloys with Type 3 powder. Type 3 powder mesh is recommended, but different powder particle size distributions are available for standard and fine pitch applications. For specific packaging information see Kester's Solder Paste Packaging Chart for available sizes. The appropriate combination depends on process variables and the specific application.

## 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.



## 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.**

## CONTACT INFORMATION

[www.macdermidalpha.com](http://www.macdermidalpha.com)

<b>North America</b> 140 Centennial Avenue Piscataway, NJ 08854 1.800.367.5460	<b>Europe</b> Unit 2, Genesis Business Park Albert Drive Woking, Surrey, GU21 5RW, UK 44.01483.758400	<b>Asia</b> 8/F., Two Sky Parc 51 Hung To Road Kwun Tong, Kowloon, Hong Kong, SAR China 852.2500.5365
-----------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------

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.