EnviroMark™ 808
Lead-Free Water-Soluble Solder Paste

Product Description

Kester EnviroMark™ 808 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.

- Provides outstanding batch-to-batch consistency
- Lead free and water soluble
- Excellent anti-slump 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 metallizations 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 ORM0 per J-STD-004

Standard Applications

88% Metal – Stencil Printing
88% Metal – Enclosed Head Printing

RoHS Compliance

This product meets the requirements of the RoHS (Restriction of Hazardous Substances) Directive, 2002/95/EC Article 4 for the stated banned substances.

Physical Properties

(Data given for Sn96.5 Ag3.0 Cu0.5, 88% metal, -325+500 mesh)

Viscosity (typical): 1800 poise
Malcom viscometer @ 10rpm 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: Low
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

Silver Chromate: Pass
Tested to J-STD-004, IPC-TM-650, Method 2.3.33

Chloride and Bromides: None Detected
Tested to J-STD-004, IPC-TM-650, Method 2.3.35

Fluorides by Spot Test: Pass
Tested to J-STD-004, IPC-TM-650, Method 2.3.35.1

SIR, IPC (typical): Pass
Tested to J-STD-004, IPC-TM-650, Method 2.6.3.3

	Blank	EM808
Day 1	$1.9 \times 10^{10}\ \Omega$	$1.4 \times 10^{8}\ \Omega$
Day 4	$1.1 \times 10^{10}\ \Omega$	$2.0 \times 10^{8}\ \Omega$
Day 7	$8.3 \times 10^{9}\ \Omega$	$8.3 \times 10^{9}\ \Omega$

Application Notes

Availability:

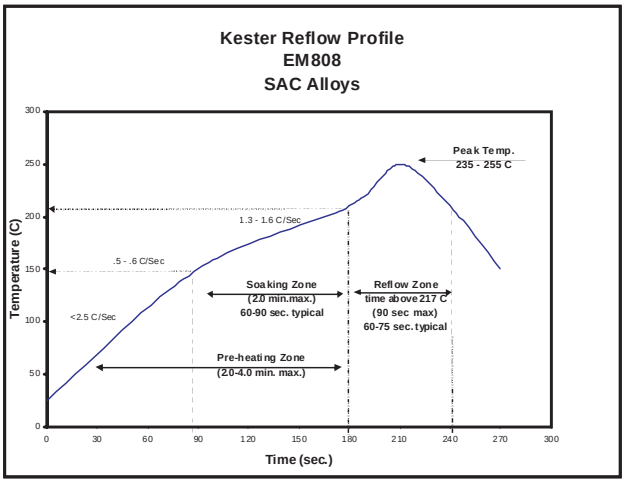
Kester EM808 is available in the Sn96.5Ag3.0Cu0.5 alloy with Type 3 powder. Type 3 powder mesh is recommended, but different powder particle size distributions are available for standard and fine pitch applications. For specific packaging information see Kester's Solder Paste Packaging Chart for available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

Printing Parameters:

Squeegee Blade	80 to 90 durometer polyurethane or stainless steel
Squeegee Speed	Capable to a maximum speed of 150 mm/sec (6 in/sec)
Stencil Material	Stainless Steel, Molybdenum, Nickel Plated, Brass
Temperature/Humidity	Optimal ranges are 21-25°C (70-77°F) and 35-65% 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 solderpaste, it can solder effectively over a wide range of profiles. Your optimal profile may be different from the one shown based on you oven, board and mix of defects. Please contact Kester 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 49-60°C (120-140°F). Kester's 5768 Bio-Kleen® saponifier can also be used in a 1-2% 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, 0-10°C (32-50°F). Please contact Kester if you require additional advice with regard to storage and handling of this material. Shelf life is 4 months from date of manufacture and held at 0-10°C (32-50°F).

Health & Safety:

This product, during handling or use, may be hazardous to health or the environment. Read the Material Safety Data Sheet and warning label before using this product.

World Headquarters: 515 E. Touhy Avenue, Des Plaines, Illinois, 60018 USA
Phone: (+1) 847-297-1600 • **Email**: customerservice@kester.com • **Website**: www.kester.com

Asia Pacific Headquarters
500 Chai Chee Lane
Singapore 469024
(+65) 6449-1133
customerservice@kester.com.sg

European Headquarters
Ganghoferstrasse 45
D-82216 Gernlinden
Germany
(+49) 8142-47850
customerservice@kester-eu.com

Japanese Headquarters
20-11 Yokokawa 2-Chome
Sumida-Ku
Tokyo 130-0003 Japan
(+81) 3-3624-5351
jpsales@kester.com.sg

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