

R811

Water-Soluble Solder Paste

Product Description

Kester R811 is an organic acid, water soluble solder paste formula specifically designed to exhibit long stencil/print life. R811 is a formula that maintains its activity and printing characteristics for up to 8 hours. R811 exhibits excellent printing characteristics over a wide range of relative humidity conditions encountered in different working environments.

- Stencil Life: 8 hours (process dependent)
- Excellent printing characteristics to 0.4mm (16 mil) pitch
- Higher tack values and longer tack life
- Leaves bright/shiny solder joints after reflow
- Scrap is reduced due to less paste dry out
- Residues easily removed with DI water
- Can reflow in air or nitrogen
- Elimination of CFC solvent cleaners
- Classified as ORH0 per J-STD-004

Standard Applications

89.5 - 90% Metal -- Stencil Printing

Physical Properties

(Data given for Sn63/Pb37 and Sn62/Pb36/Ag02, 89.5% metal, -325+500 mesh)

Viscosity (typical) : 2800 poise

Malcom Viscometer PCU-203 @ 10 rpm, 25 °C, measurement after 9 mins

Initial Tackiness (typical) : 26 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

Silver Chromate: Pass

Tested to J-STD-004, IPC-TM-650, Method 2.3.33

Fluorides by Spot Test: Pass

Tested to J-STD-004, IPC-TM-650, Method 2.3.35.1

S.I.R., IPC (typical): Pass

Tested to J-STD-004, IPC-TM-650, Method 2.6.3.3

	Blank	R811
Day 1 (24 h)	$2.5 \times 10^{10} \Omega$	$2.1 \times 10^9 \Omega$
Day 4 (96 h)	$2.6 \times 10^{10} \Omega$	$2.0 \times 10^9 \Omega$
Day 7 (168 h)	$2.2 \times 10^{10} \Omega$	$2.2 \times 10^9 \Omega$

Application Notes

Availability:

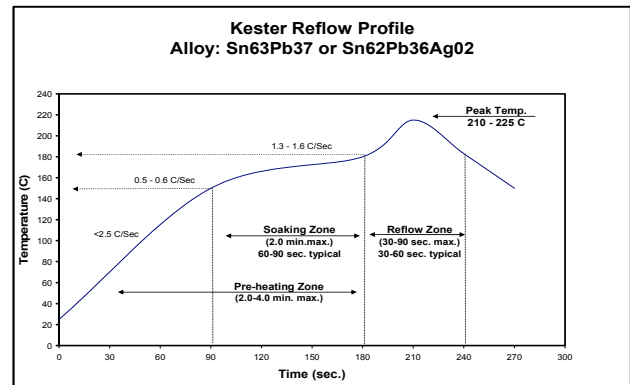
Kester R811 is commonly available in the Sn63Pb37 alloy and Sn62Pb36Ag02 alloys. Type 3 powder mesh is recommended, but different powder particle size distributions are available for standard and fine pitch applications. For specific packaging information, see Kester's Solder Paste Chart for available 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	25 to 60 mm/sec (1-2.4 in/sec) recommended
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 convection reflow profile for R811 formula made with either the Sn63Pb37 or Sn62Pb36Ag02 is shown here. This profile is simply a guideline. Since R811 is a highly active, water-soluble 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 Kester if you need additional profiling advice.



Cleaning:

R811 residues are best removed using automated cleaning equipment (in-line or batch). De-ionized water is recommended for the final rinse. Water temperatures should be 25-60°C (77-140°F).

Storage, Handling and Shelf Life:

Refrigeration is the recommended optimum storage condition for solderpaste to maintain consistent viscosity, reflow characteristics and overall performance. R811 should be stabilized at room temperature prior to printing. R811 should be kept at standard refrigeration conditions, 0-10°C (32-50°F). Please contact Kester if you require additional advice with regard storage and handling of this material. Shelf life is 4 months from date of manufacture when handled properly and held at 0-10°C (32-50°F).

Health & Safety:

This product, during handling and use, may be hazardous to health or the environment. Read the Material Safety Data Sheet and the 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 Japan
 (+81) 3-3624-5351
 jpsales@kester.com.sg

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