R906
Lead-Free No-Clean Solder Paste

Product Description

Kester R906 solderpaste is a lead-free, no-clean, nitrogen processable product specifically designed to be a Lead-Free replacement for electronic assemblies. R906 is supplied with Sn95.8Ag3.5Cu0.7 alloy. R906 enables a robust printing process and an extended shelf life. R906 has excellent solder deposit definition that allows printing of fine pitch devices at increased print speeds. It also leaves a light coloured residue and thus provides excellent cosmetic aesthetics. R906 maintains highest possible activity for a no-clean formula and is classified as Type ROL0 flux under IPC ANSI/J-STD-004 Joint Industry Standard.

- Lead free and no clean
- Capable of print speeds up to 150 mm/sec (6 in/sec)
- Extended Stencil Life (process dependent)
- Excellent release from stencil
- Excellent printing characteristics on 0.5mm (20 mil) pitch
- Clean cosmetic aesthetics after reflow
- Resistant to slump
- Stable tack life
- Classified as ROL0 per J-STD-004
- Compliant to Bellcore GR-78-CORE

Standard Applications

88% Metal -- Stencil Printing

Physical Properties

(Data given for Sn95.8Ag3.5Cu0.7, 88% metal, -325+500 mesh)

Viscosity (typical) : 2130 poise
Malcom Viscometer PCU-203 @ 10 rpm, 25 °C, measurement after 9 mins

Initial Tackiness (typical) : 55 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

S.I.R., IPC (typical): Pass
Tested to J-STD-004, IPC-TM-650, Method 2.6.3.3

	Blank	R906
Day 1(24 h)	$9.6 \times 10^9\ \Omega$	$3.5 \times 10^8\ \Omega$
Day 4(96 h)	$7.6 \times 10^9\ \Omega$	$3.2 \times 10^8\ \Omega$
Day 7(168 h)	$6.5 \times 10^9\ \Omega$	$9.3 \times 10^8\ \Omega$

Electromigration, Bellcore (typical): : Pass
Tested to Bellcore GR-78-CORE

	Blank	R906
Day 4 (96h)	$1.3 \times 10^{13}\ \Omega$	$1.2 \times 10^{12}\ \Omega$
Day 21(500h)	$1.2 \times 10^{13}\ \Omega$	$2.2 \times 10^{12}\ \Omega$

Application Notes

Availability:

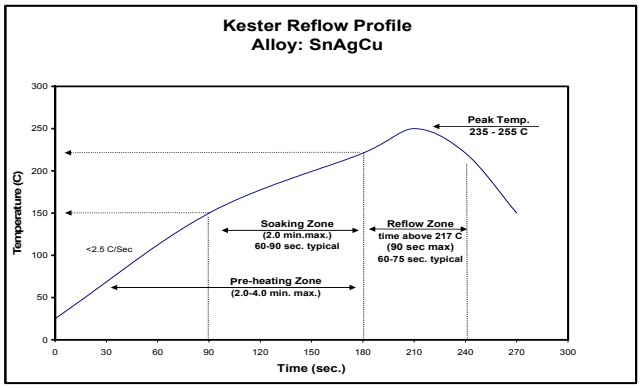
Kester R906 is available in Sn95.8Ag3.5Cu0.7 alloy. Type 3 powder mesh is recommended, but different powder particle size distributions are available for standard and fine pitch applications. R906 is also compatible with other SnAgCu alloys in a similar melting range to the listed alloys. For specific packaging information, see Kester's 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	30 to 150 mm/sec (1.2-6 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 reflow profile for R906 made with the Sn95.8Ag3.5Cu0.7 alloy is shown here. This profile is simply a guideline. Since R906 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 Kester if you need additional profiling advice.



Cleaning:

R906 is a no-clean formula. The residues do not need to be removed for typical applications. Although R906 is designed for no-clean applications, its residues can be easily removed using automated cleaning equipment (in-line or batch) with a variety of readily available cleaning agents. Call Kester Technical Support for details.

Storage, Handling and Shelf Life:

Refrigeration is the recommended optimum storage condition for solderpaste to maintain consistent viscosity, reflow characteristics and overall performance. R906 should be stabilized at room temperature prior to printing. R906 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 6 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