



R562

Water-Soluble Solder Paste

Product Description

Kester R562 is an organic acid, water-soluble solder paste specifically designed for resistance to environmental extremes. Water-soluble pastes tend to dry out in low relative humidity and slump at high relative humidity. R562 will maintain its print characteristics, tack and activity even after exposure to environmental extremes.

- Reduces BGA voiding to <3%
- Bright, shiny joints
- 12 hour stencil life
- Print speeds up to 6 in/sec
- Compatible with enclosed print head systems
- Capable of multiple reflow profiles before a cleaning operation is required
- Consistent printing over a range of temperatures and humidity
- Excellent solderability to a wide variety of metallizations, including Palladium
- Residues easily removed with hot DI water, even up to 96 hours after processing
- Classified as ORH0 per J-STD-004

Standard Applications

- 90% Metal - Stencil Printing
- 90% Metal - Enclosed Head Printing

Physical Properties

(Data given for Sn63Pb37, 90% metal, -325+500 mesh)

Viscosity (typical): 1750 poise

Malcom viscometer @ 10rpm and 25°C

Initial Tackiness (typical): 48 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

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

	<u>Blank</u>	<u>R562</u>
Day 1	$3.2 \times 10^{10} \Omega$	$3.4 \times 10^8 \Omega$
Day 4	$1.2 \times 10^{10} \Omega$	$1.9 \times 10^9 \Omega$
Day 7	$1.3 \times 10^{10} \Omega$	$4.1 \times 10^9 \Omega$

Application Notes

Availability:

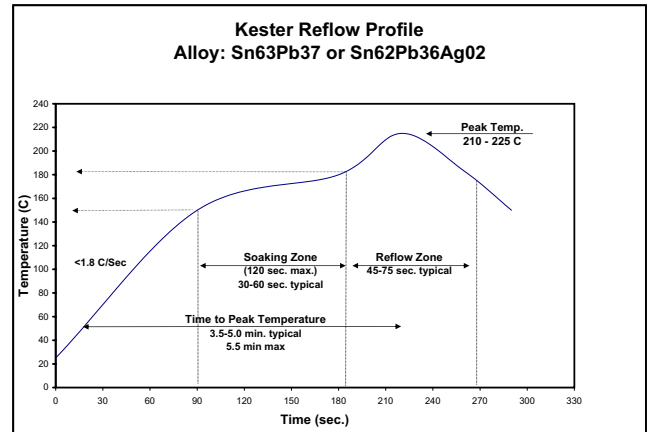
R562 is commonly available in the Sn63Pb37 and Sn62Pb36Ag02 alloys. Type 3 powder mesh is recommended, but different powder particle size distributions are available for standard and fine pitch applications. For specific packaging information see Kester's Solder Paste Packaging Chart for available sizes. 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% R.H.

Recommended Reflow Profile:

The recommended reflow profile for R562 made with either the Sn63Pb37 or Sn62Pb36Ag02 is shown here. This profile is simply a guideline. Since R562 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:

R562 residues are best removed using automated cleaning equipment (in-line or batch) within 96 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 solderpaste to maintain consistent viscosity, reflow characteristics and overall performance. R562 should be stabilized at room temperature prior to printing. R562 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 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: 800 West Thorndale Avenue, Itasca, Illinois, 60143-1341 USA
Phone: (+1) 630-616-4000 • **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

The data recommendations presented are based on tests, which we consider reliable. Because Kester has no control over the conditions of use, we disclaim any responsibility connected with the use of any of our products or the information presented. We advise that all chemical products be used only by or under the direction of technically qualified personnel who are aware of the potential hazards involved and the necessity for reasonable care in their handling. The technical information contained herein is consistent with the properties of this material but should not be used in the preparation of specifications as it is intended for reference only. For assistance in preparing specifications, please contact your local Kester office for details.