



# R231

## Mildly Activated Rosin Solder Paste

### Product Description

Kester R231 is a Mildly Activated Rosin (RMA) solder paste formula specifically designed to exhibit long stencil/print life. R231 maintains its activity and printing characteristics for up to 8 hours (temperature and humidity dependent).

- High print speeds to 200 mm/sec (8 in/sec)
- Compatible with 0201 technology
- Excellent printing characteristics to 0.4mm (16-mil) pitch with Type 3 powder
- Excellent wetting on a variety of substrates, including OSPs
- Capable of 90 minute break times in printing
- Stencil life: 8+ hours (process dependent)
- Scrap is reduced due to less paste dry out
- Stable tack over 8+ hours
- Classified as ROL0 per J-STD-004
- Compliant to Bellcore GR-78 (uncleaned)
- Compatible with DEK ProFlow™ and MPM RheoPump™ enclosed print head systems

### Standard Applications

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

### Physical Properties

(Data given for Sn63Pb37 and Sn62Pb36Ag02, 90% metal, -325+500 mesh)

**Viscosity (typical):** 1600 poise  
Malcom viscometer @ 10rpm and 25°C

**Initial Tackiness (typical):** 42 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

**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

	<b>Blank</b>	<b>R231</b>
Day 1	$1.5 \times 10^{10} \Omega$	$5.3 \times 10^9 \Omega$
Day 4	$6.0 \times 10^9 \Omega$	$2.6 \times 10^9 \Omega$
Day 7	$5.5 \times 10^9 \Omega$	$2.9 \times 10^9 \Omega$

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

	<b>Blank</b>	<b>R231</b>
Day 1	$2.6 \times 10^{12} \Omega$	$1.5 \times 10^{12} \Omega$
Day 4	$1.8 \times 10^{12} \Omega$	$1.5 \times 10^{12} \Omega$

## Application Notes

### Availability:

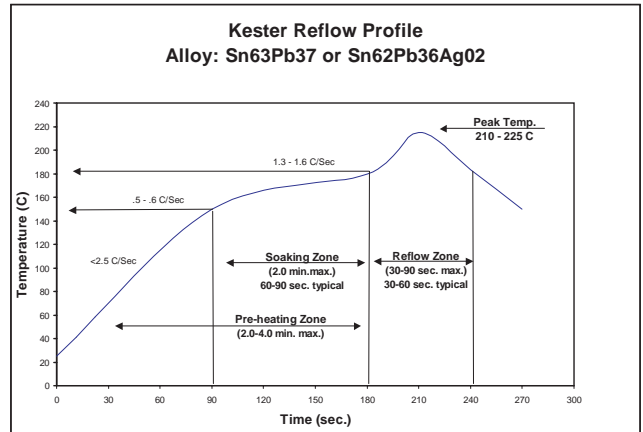
Kester R231 is available in the Sn63Pb37 and Sn62Pb36Ag02 alloys with Type 3 powder. Type 3 powder mesh is recommended, but different powder particle size distributions are available for standard and fine pitch applications. For specific packaging information see Kester's Solder Paste Packaging Chart for available sizes. The appropriate combination depends on process variables and the specific application.

### Printing Parameters:

Squeegee Blade	80 to 90 durometer polyurethane or stainless steel
Squeegee Speed	Capable to a maximum speed of 200 mm/sec (8 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 R231 made with Sn63Pb37 and Sn62Pb36Ag02 alloys is shown here. This profile is simply a guideline. Since R231 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:

R231 is an RMA formula. The residues do not need to be removed for typical applications. Although R231 is designed for RMA 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. R231 should be stabilized at room temperature prior to printing. R231 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 or use, may be hazardous to health or the environment. Read the Material Safety Data Sheet and warning label before using this product.

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