

R253-5 Solder Paste

No-Clean, Lead-Free

Product Description

R253-5 Solder Paste is an air or nitrogen processable no-clean, lead-free solder paste formula specifically designed to minimize residues. Residues which remain on the surfaces after soldering are easily probed. R253-5 maintains highest possible activity for a no-clean formula and provides robust printing characteristics for up to 12 hours. Formula R253-5 is classified as Type ROL1 flux under IPC ANSI/J-STD-005 Joint Industry Standard.

Performance Characteristics:

- Stencil Life: 12 hours (process dependent)
- Excellent printing characteristics to 16 mil pitch
- Leaves bright/shiny solder joints after reflow
- Scrap is reduced due to less paste dry out

Standard Applications:

Stencil Printing – 90% Metal

RoHS Compliance

This product meets the requirements of the Restriction of Hazardous Substances (RoHS) Directive, 2015/863 for the stated banned substances.

Physical Properties

Viscosity: 1350 to 1850

Sn95Sb05 T5 88% T5

Viscosity: 1150-1650

Sn96Ag4 T3 88% T3

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

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

	Blank	R253-5
24 hours	$3.33 \times 10^9 \Omega$	$2.17 \times 10^8 \Omega$
96 hours	$4.40 \times 10^9 \Omega$	$8.60 \times 10^8 \Omega$
168 hours	$3.91 \times 10^9 \Omega$	$1.4 \times 10^8 \Omega$

Availability

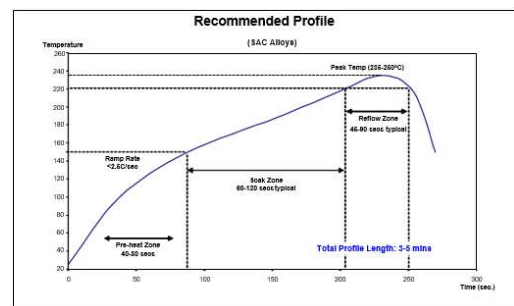
R253-5 is commonly available in SnAg and SnSb alloys. Type 3 powder mesh is recommended, but different powder particle size distributions are available for standard and fine pitch applications. For specific packaging information see Kester's Solder Paste Packaging Chart for available sizes. The appropriate 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 25 to 150 mm/sec (1 to 6 in/sec)
Stencil Material	Stainless Steel, Molybdenum, Nickel Plated, Brass
Temperature/Humidity	Optimal ranges are 21 to 25 °C (70 to 77 °F) and 35 to 65% RH

Recommended Reflow Profile

Convection and Infra-Red reflow methods are most commonly used to reflow the R253-5 formula. Full Convection, Vapor Phase, and Soft Beam Laser methods can also be used. The recommended IR or Convection reflow profile for the R253-5 formula made with SAC alloys is shown here.



Cleaning

R253-5 is a no-clean formula. The residues do not need to be removed for typical applications. Although R253-5 is designed for no-clean applications, its residues can be easily removed using automated cleaning equipment (in-line or batch) with the aid of Kester 5768 Cleaner in a 10 to 12% concentration in de-ionized water at approximately 140 °F (60 °C).

Recycling Services

We provide safe and efficient recycling services to help companies meet their environmental and legislative requirements and at the same time, maximize the value of their waste streams.

Our service collects solder dross, solder scrap, and various forms of solder paste waste. Please contact your local sales representative for recycling capabilities in your area or [link here](#).



Storage, Handling and Shelf Life

R253-5 should be kept at standard refrigeration temperatures and humidity conditions, 0 to 10 °C (32 to 50 °F) and 35 to 55%RH respectively. Shelf life is 4 months from date of manufacture when held at 0-10°C (32 to 50 °F).

Health and Safety

This product, during handling or use, may be hazardous to your health or the environment. Read the Safety Data Sheet and warning label before using this product. Safety Data Sheets are available at this [link](#).

Contact Information

To confirm this document is the most recent version, please contact Assembly@MacDermidAlpha.com

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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE. Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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