

# R253-5 Solder Paste

## No-Clean

### Product Description

R253-5 is an air or nitrogen processable no-clean 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:

90% Metal – Stencil Printing

### RoHS Compliance

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

### Physical Properties

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

**Viscosity (typical):** 1550-2150 poise  
Malcom Viscometer @ 10rpm and 25°C

#### Slump Test: Pass

Tested to J-STD-005, IPC-TM-650, Method 2.4.35

#### Solder Ball Test: Pass

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

#### 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*10 <sup>9</sup> Ω	2.17*10 <sup>8</sup> Ω
96 hours	4.40*10 <sup>9</sup> Ω	8.60*10 <sup>8</sup> Ω
168 hours	3.91*10 <sup>9</sup> Ω	1.4*10 <sup>8</sup> Ω

## Availability

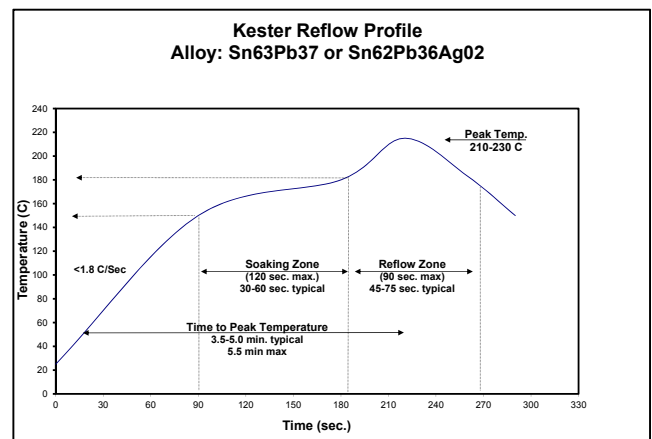
R253-5 is commonly available in the Sn63Pb37 and Sn62Pb36Ag02 alloys. Type 3 powder mesh is recommended, but different powder particle size distributions are available for standard and fine pitch applications. For specific packaging information see Kester's Solder Paste Packaging Chart for available sizes. The appropriate combination depends on process variables and the specific application.

## Printing Parameters

Squeegee Blade	80-90 durometer stainless steel or polyurethane
Squeegee Speed	Capable to a maximum speed of 25-150 mm/sec (1-6 in/sec)
Stencil Material	Stainless Steel, Molybdenum, Nickel Plated or Brass
Temperature/Humidity	Optimal ranges are 21-25°C (70-77°F) and 35-65% 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 either the Sn63Pb37 or Sn62Pb36Ag02 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 10-12% concentration in de-ionized water at approximately 140°F (60°C).

## Storage and Shelf Life

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

## Health and Safety

This product, during handling or use, may be hazardous to your health or the environment. Read the Safety Data Sheet (SDS) and warning label before using this product.