MacDermid Alpha ELECTRONICS SOLUTIONS

TECHNICAL DATA SHEET

KESTER® R229D SOLDER PASTE

Mildly Activated Rosin Solder Paste

DESCRIPTION

Kester R229D Solder Paste is a Mildly Activated Rosin (RMA) solder paste formula specifically designed to exhibit long stencil/print life. R229D maintains its activity and printing characteristics for up to 8 hours (temperature and humidity dependent).

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

- Consistent viscosity
- Extended stencil life (process dependent)
- Excellent printing characteristics to 0.5 mm (20 mil) pitch
- Long tack life
- Leaves bright/shiny solder joints after reflow
- Scrap is reduced due to less paste dry out
- Can reflow in air or nitrogen
- Classified as ROL1 per J-STD-004
- Compliant to Bellcore GR-78-CORE

STANDARD APPLICATIONS

Stencil Printing – 90% Metal
Syringe Dispensing – 88% Metal

TECHNICAL DATA

Category	Results	Procedure/Remarks
Physical Properties (Data given for Sn63/Pb37 and Sn62/Pb36/Ag02, 90% metal, -325+500 mesh)		
Viscosity (typical)	900 kcps	Brookfield Viscometer RVDV - II+, TF Spindle @ 5 ppm, 25 °C, 1.0 inch spindle depth
Initial Tackiness (typical)	48 grams	Tested to MacDermid Alpha Method 1W-QC-3-04
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
Surface Insulation Resistivity (SIR), IPC (Typical)	Pass	Tested to J-STD-004, IPC-TM-650, Method 2.6.3.3
Surface Insulation Resistivity (SIR), Bellcore (Typical)	Pass	Tested to Bellcore GR-78-CORE

Surface Insulation Resistivity (SIR), IPC (Typical)

	Blank	R229D
Day 1 (24h)	5.2×10^{10} Ω	4.4×10^{8} Ω
Day 4 (96h)	3.0×10^{10} Ω	2.9×10^{8} Ω
Day 7 (168h)	3.2×10^{10} Ω	4.0×10^{8} Ω

Surface Insulation Resistivity (SIR), Bellcore (Typical)

	Blank	R229D
Day 1 (24h)	1.3×10^{11} Ω	3.6×10^{9} Ω
Day 4 (96h)	1.2×10^{11} Ω	9.9×10^{10} Ω

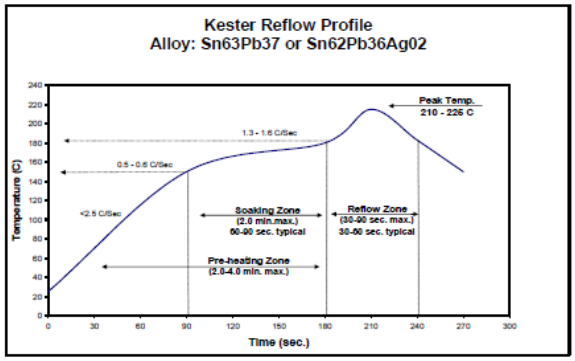
PROCESSING GUIDELINES

Printing Parameters

Squeegee Blade	80 to 90 durometer polyurethane or stainless steel
Squeegee Speed	15 to 40 mm/sec (0.6 to 1.6 in/sec) recommended; other speeds possible
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

The recommended reflow profile for R229D made with Sn63Pb37 and Sn62Pb36Ag02 is shown here. This profile is simply a guideline. Since R229D is a highly active, no-clean 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 MacDermid Alpha Technical Support if you need additional profiling advice.



Cleaning

R229D is an RMA formula. The residues do not need to be removed for typical applications. Although R229D 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 MacDermid Alpha Technical Support for details.

Storage, Handling and Shelf Life

Refrigeration is the recommended optimum storage condition for solder paste to maintain consistent viscosity, reflow characteristics and overall performance. R229D should be stabilized at room temperature prior to printing. R229D should be kept at standard refrigeration conditions, 0 to 10 °C (32 to 50 °F). Please contact MacDermid Alpha if you require additional advice with regard storage and handling of this material. Shelf life is 6 months (in jar packaging) from date of manufacture when handled properly and held at 0 to 10 °C (32 to 50 °F).

AVAILABILITY

Kester R229D 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 Chart for available sizes. The appropriate combination depends on process variables and the specific application.

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.

SAFETY & WARNING

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available.**

CONTACT INFORMATION

www.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