MacDermid Alpha ELECTRONICS SOLUTIONS

TECHNICAL DATA SHEET

KESTER® NXG1 SOLDER PASTE

Lead-Free, No-Clean

DESCRIPTION

Kester NXG1 Solder Paste is a lead-free, no-clean solder paste designed to be used in air and nitrogen atmospheres and handle the thermal requirements of lead-free alloys. The paste flux system allows joint appearances that closely resemble that achieved with SnPb alloys. NXG1 is capable of stencil printing downtimes up to 120 minutes with an effective first print down to 0.4 mm (16 mil) pitch QFPs. NXG1 also offers excellent cosmetic appearance in the reflowed solder joints with smooth, shiny solder and light colored residues. This paste also features the longest shelf life of any product in its class at 8 months. NXG1 is ANSI/J-SDTD-005 compliant. The flux as per IPC ANSI/J-STD-004B is classified ROL1.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

- Excellent wetting to a variety of metals
- Capable of print speeds up to 25 to 200 mm/sec (1 to 8 in/sec)
- Resistant to slump
- Shelf life is 8 months
- Excellent printing characteristics on 0.4 mm (16 mil) pitch QFPs
- Long stencil and tack life (process dependent)
- Excellent release from stencil
- Capable of 120 minute break times in printing
- Clean cosmetic aesthetics after reflow
- Reflowable in air or nitrogen

STANDARD APPLICATIONS

For stencil printing: 88.5% metal for -3.05+500 mesh

ROHS COMPLIANCE

This product meets the requirements of the Restriction of Hazardous Substances (RoHS) Directive, 2011/65/EU for the stated banned substances.

TECHNICAL DATA

Category	Results	Procedure/Remarks
Physical Properties (Data given for SnAgCu, 88.5% metal, -325 +500 mesh Data representative for most SnAgCu compositions)		
Viscosity (typical)	1850 poise	Malcom Viscometer @ 10 rpm and 25 °C
Initial Tackiness (typical)	46 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-004A, IPC-TM-650, Method 2.3.32
Corrosion Test	Low	Tested to J-STD-004B, IPC-TM-650, Method 2.6.15
Chloride and Bromides	None Detected	Tested to J-STD-004B, IPC-TM-650, Method 2.3.28.1
Fluorides by Spot Test	Pass	Tested to J-STD-004B, IPC-TM-650, Method 2.3.35.1
Surface Insulation Resistivity (SIR)	Pass	Tested to J-STD-004B, IPC-TM-650, Method 2.6.3.3

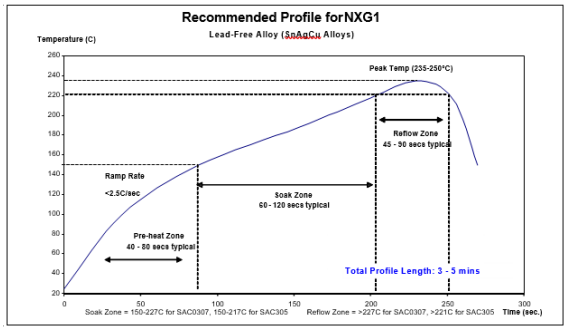
	Blank	NXG1
Day 1	$6.3*10^{11}$ Ω	$2.0*10^{9}$ Ω
Day 4	$3.1*10^{11}$ Ω	$3.5*10^{9}$ Ω
Day 7	$3.3*10^{11}$ Ω	$3.5*10^{9}$ Ω

PROCESSING GUIDELINES

Printing Parameters

Squeegee Blade	80 to 90 durometer polyurethane or stainless steel
Squeegee Speed	Capable to a maximum speed of 25 to 200 mm/sec (1 to 8 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



The recommended reflow profile for NXG1 made with SnAgCu alloy is shown here. This profile is simply a guideline. Since NXG1 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 MacDermid Alpha Technical Support if you need additional profiling advice.

Cleaning

NXG1 is a no-clean formula. The residues do not need to be removed for typical applications. Although NXG1 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. If residue removal is required, call MacDermid Alpha Technical Support.

Storage, Handling and Shelf Life

Refrigeration is the recommended optimum storage condition for solder paste to maintain consistent viscosity, reflow characteristics and overall performance. NXG1 should be stabilized at room temperature prior to printing. NXG1 should be kept at standard refrigeration conditions, 0 to 10 °C (32 to 50 °F). Please contact MacDermid Alpha if you require additional advice regarding storage and handling of this material. Shelf life is 8 months from the date of manufacture when handled properly when held at 0 to 10 °C (32 to 50 °F).

AVAILABILITY

NXG1 is available in SAC305 alloys with Type 3 powder mesh size for standard and fine pitch applications. For specific packaging information, see Kester's Paste Packaging 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