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kester® Technical Data Sheet

NXG1 Solder Paste
Lead-Free, No-Clean

Product Description

Kester NXG1 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 0.4mm (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.

Performance Characteristics:

- Excellent wetting to a variety of metals
- Capable of print speeds up to 25-200 mm/sec (1-8 in/sec)
- Low voiding behavior
- Resistant to slump
- Shelf life is 8 months
- Excellent printing characteristics on 0.4mm (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.

Physical Properties

Data given for SnAgCu, 88.5% metal, -325+500 mesh) Data representative for most SnAgCu compositions

Viscosity (typical): 1850 poise
Malcom Viscometer @ 10rpm 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

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

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

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▪ Website: www.kester.com ▪

Availability

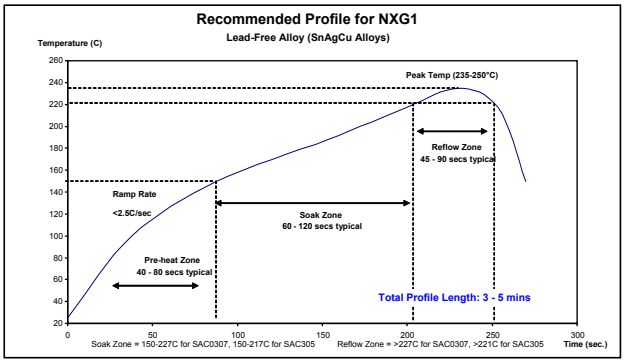
NXG1 is available in SAC305 alloys with type 3 powder mesh size for standard and fine pitch applications. For specific packaging information, see Kester's Paste Packaging Chart for available sizes. The appropriate combination depends on process variables and the specific application.

Printing Parameters

Squeegee Blade	Stainless Steel or 80-90 Durometer Polyurethane
Squeegee Speed	Capable to a maximum speed of 25-200 mm/sec (1-8 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

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 Kester 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 Kester 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, 0-10°C (32-50°F). Please contact Kester 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 0-10°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 and warning label before using this product.

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