

# NXG1

## Lead-Free No-Clean Solder Paste

### Product Description

Kester NXG1 is a lead-free, air and nitrogen reflowable no-clean solder paste specifically designed for the thermal requirements of lead free alloys, including the Sn96.5Ag3.0Cu0.5 alloy. 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 20 mils without any kneading. 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 is classified as Type ROL1 flux under IPC ANSI/J-STD-004B.

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

### Standard Applications

For stencil printing:  
 88.5% metal for -325+500 mesh  
 88.5% metals for -400+500 mesh

### RoHS Compliance

This product meets the requirements of the RoHS (Restriction of Hazardous Substances) Directive, 2002/95/EC Article 4 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-004B, 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 2.3.35

**Fluorides by Spot Test:** Pass  
 Tested to J-STD-004B, IPC-TM-650, Method 2.3.35.1

**SIR, IPC (typical):** Pass  
 Tested to J-STD-004B, IPC-TM-650, Method 2.6.3.3

	<b>Blank</b>	<b>NXG1</b>
Day 1	$6.3 \times 10^{11} \Omega$	$2.0 \times 10^9 \Omega$
Day 4	$3.1 \times 10^{11} \Omega$	$3.5 \times 10^9 \Omega$
Day 7	$3.3 \times 10^{11} \Omega$	$3.5 \times 10^9 \Omega$

## Application Notes

### Availability:

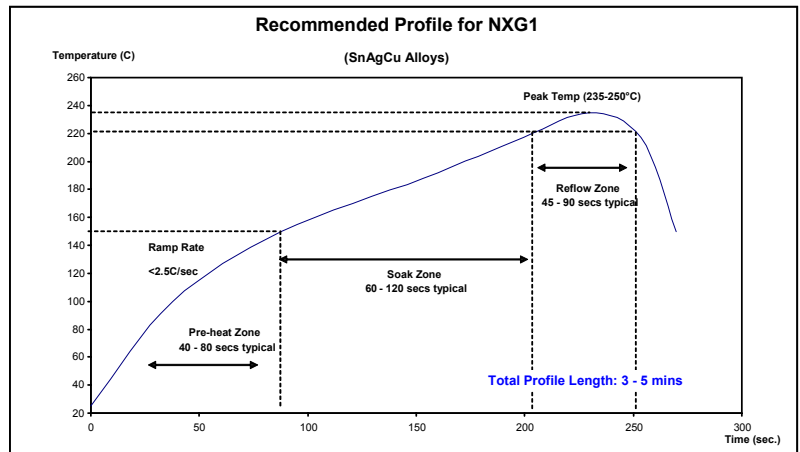
Kester NXG1 is available in Sn96.5Ag3Cu0.5 alloys with Type 3 or 4 powder mesh size for standard and fine pitch applications. Please contact Kester for other alloy options. For specific packaging information, see Kester's Paste Packaging Chart for available sizes. The appropriate combination depends on process variables and the specific application.

### Printing Parameters:

Squeegee Blade	80 to 90 durometer polyurethane or stainless steel
Squeegee Speed	Capable to a maximum speed of 200 mm/sec (8 in/sec)
Stencil Material	Stainless Steel, Molybdenum, Nickel Plated, 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 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.

### 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 temperatures, 0-10°C (32-50°F). Please contact Kester if you require additional advice with regard to storage and handling of this material. Shelf life is 8 months from date of manufacture and held at 0-10°C (32-50°F).

### Health & Safety:

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

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