



## NP545 Solder Paste

### Zero-Halogen, Lead-Free, No-Clean

#### Product Description

Kester NP545 is a zero-halogen, lead-free no-clean solder paste formula designed for consistency and repeatability. NP545 is extremely stable and has an unrefrigerated shelf life of 6 months with no print or solderability degradation. NP545 consistently delivers paste transfer efficiencies of 0.55 to 0.5AR. The paste is also fully capable of printing and reflowing 01005 components, even in air reflow, with minimal graping behavior. NP545 is classified as ROL0 per IPC J-STD-004B.

#### Performance Characteristics:

- Zero-halogen
- Consistent print performance to 0.5AR
- Excellent shelf life  
6 month unrefrigerated shelf life,  
continuing to test  
1 year refrigerated shelf life
- Exceptional printing relax & recovery, and printer friendly
- Low QFN/BGA voiding
- Reflowable in air and nitrogen
- Wide reflow profile window with good solderability on various PCB surface finishes
- Excellent cosmetics and a clear residue

#### Standard Applications:

Stencil Printing:

T3 = 88.5% Metal

T4 = 88.3% Metal

#### RoHS Compliance

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

#### Physical Properties

**Viscosity (typical):** 1350 poise  
Malcom Viscometer @ 10 rpm 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

**Initial Tackiness (typical):** 30 grams  
Tested to J-STD-005, IPC-TM-650, Method 2.4.44

#### Reliability Properties

**Copper Mirror Corrosion:** Low  
Tested to J-STD-004B, IPC-TM-650, Method 2.3.32

**Surface Insulation Resistance (SIR):** Pass  
Tested to J-STD-004B, IPC-TM-650, Method 2.6.3.7

**Halogen Content:** None Detected  
Tested to J-STD-004B, IPC-TM-650, Method 2.3.41 (ref. EN 14582)

**Copper Corrosion:** Low  
Tested to J-STD-004B, IPC-TM-650, Method 2.6.15

**Surface Insulation Resistance (SIR):** Pass  
Tested to J-STD-004A, IPC-TM-650, Method 2.6.3.3

**Electro Chemical Migration (ECM):** Pass  
Tested to J-STD-004B, IPC-TM-650, Method 2.6.14.1

## ✓ Availability

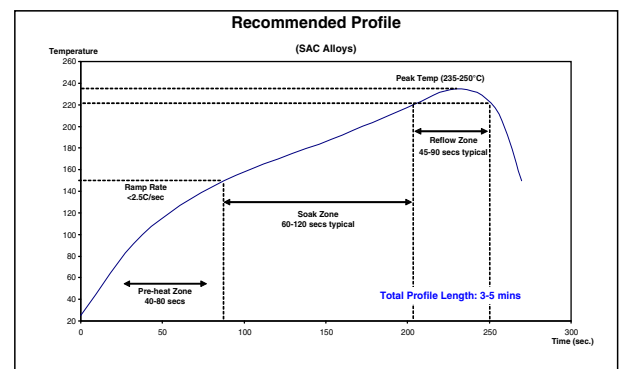
NP545 is available in the Sn96.5Ag3Cu0.5 alloy with a type 3 and 4 powder mesh. Type 4 mesh size is recommended for standard and fine pitch applications. NP545 is also compatible with other SnAgCu alloys in similar melting range to the listed alloys. For specific packaging information refer to Kester's 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 200 mm/sec (8 in/sec)
Stencil Material	Stainless Steel, Molybdenum, Nickel Plated or Brass
Temperature/Humidity	Optimal ranges are 20-25°C (70-77°F) and 35-65% RH

## 🔄 Recommended Reflow Profile

The recommended convection reflow profile for NP545 formula made with SAC alloys is shown here. This profile is simply a guideline. NP545 has excellent solderability and wetting across a wide range of profiles, with similar performance in air and nitrogen. Your optimal profile may be different from the one shown based on your oven, board and mix of defects. Contact Kester Technical Support if you need additional profiling advice.



## 🧼 Cleaning

NP545 is a no-clean formula. The residues do not need to be removed for typical applications. Although NP545 is designed for no-clean applications; its residues can be removed using automated cleaning equipment (in-line or batch) with a variety of readily available cleaning agents.

## 📦 Storage, Handling and Shelf Life

NP545 has a unrefrigerated shelf life, at a max temperature of 26°C (79°F), of 6 months; however if refrigerated, NP545 should be stabilized at room temperature prior to printing. Shelf life is 1 year from the date of manufacture when handled properly and held at 0-10°C (32-50°F). Please contact Kester Technical Support if you require additional advice regarding storage and handling of this material.

## ⚠️ 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.