NP575-KAP Solder Paste

Zero-Halogen, Lead-Free, No-Clean

Product Description

Kester® NP575-KAP Solder Paste is a zero-halogen, lead-free, no-clean solder paste designed for maximum flexibility in production and excellent electrochemical reliability.

NP575-KAP delivers consistent print and reflow performance for a wide range of components. CpK values >2.0 are achievable with transfer efficiencies between 60 to 120% at area ratios >0.60. NP575-KAP maintains repeatable transfer efficiencies on fine feature 01005 components and excellent coalescence down to 170 µm circle and square apertures.

Performance Characteristics:

- Zero-halogen (none intentionally added)
- Wide process window and consistent print performance to 0.6AR
- Excellent reflow and coalescence using both ramp and soak profiles
- Excellent pin testability
- Excellent electrochemical reliability

RoHS Compliance

This product meets the requirements of the Restriction of Hazardous Substances (RoHS) Directive. Additional RoHS information is located at https://www.kester.com/downloads/environmental.

Physical Properties

(Data based on testing SAC305 T4 solder paste)

Residue Color: Clear, light amber flux residue

Viscosity (typical): 1700 poise
Malcom Viscometer @ 10 rpm and 25 °C/77 °F

Tack Life: Pass
Tested to J-STD-005, IPC-TM-650 2.4.44

Spread Rate: Average spread between 88 to 90%

Cold Slump Test: Pass
No bridging above 0.2 mm, IPC-TM-650 2.4.35

Hot Slump: Pass
No bridging above 0.25 mm, IPC-TM-650 2.4.35

Solder Ball Test: Pass
Tested to J-STD-005, IPC-TM-650 2.4.43

Reliability Properties

Copper Mirror Corrosion: No Breakthrough "L"
Tested to J-STD-004B, IPC-TM-650 2.3.32

Corrosion Test: Low activity, no corrosion,
Tested to J-STD-004B, IPC-TM-650 2.6.15C

Halogen Content: None detected,
Tested to J-STD-004B, IPC-TM-650 2.3.41 (Ref. EN 14582)

Electrochemical Migration (ECM): Pass
Tested to J-STD-004B, IPC-TM-650 2.6.14.1
Test Conditions: 65 °C/149 °F, 85% RH, 25 days, 100V

Surface Insulation Resistance (SIR): Pass B24 on 100 µm coupon
Tested to J-STD-004B, IPC-TM-650 2.6.3.7
Test Conditions: 40 °C/104 °F, 90% RH, 7 days, 12.5V

Surface Insulation Resistance (SIR): Pass B24
Tested to J-STD-004C, IPC-TM-650 2.6.3.7
Test Conditions: 85 °C/185 °F, 85% RH, 7 days, 12V

Availability

NP575-KAP is available in both SAC305 and Innolot alloys with a Type 4 powder. For specific packaging information refer to this product's Product Offerings tab at kester.com for available sizes.

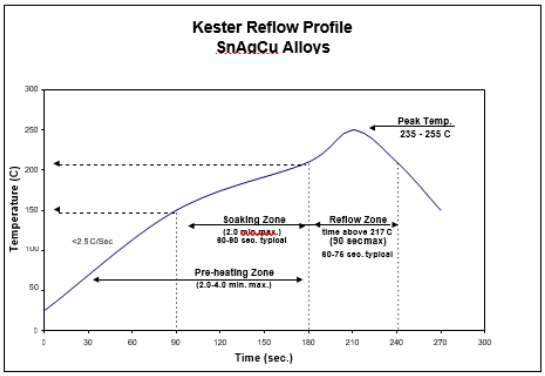
The appropriate combination depends on process variables and the specific application. Visit https://www.kester.com/products/product/np545-solder-paste for more information.

Printing Parameters

Performance Attribute	NP575-KAP Capability
Print Definition	Consistent fine feature print volumes, reaching AR of 0.60
Print Durability (Stencil Life)	>8hrs consistent transfer efficiency @ 25 °C/30% RH
Squeegee Blade	Stainless steel preferred; angle 60°
Print Speed Range	Formulated for stencil printing at speeds of 25 to 150 mm/s (1 to 6 in/s)
Print Pressure	0.21 kg/cm (1.25 lbs/in) to 0.36 kg/cm (2.0 lbs/in) depending on print speed and quality of stencil/substrate gasket. Higher blade pressure is required to achieve a clean stencil surface for applications requiring higher print speed.
Stencil Release Speed	5 to 10mm/s preferred

Recommended Reflow Profile

The recommended convection reflow profile for NP575-KAP formula made with SAC alloys are shown here. This profile is simply a guideline. NP575-KAP 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 Customer Technical Support if you need additional profiling advice.



Cleaning

NP575-KAP is a no-clean formula. The residues do not need to be removed for typical applications. Although NP575-KAP 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.

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 or link here.

Storage, Handling and Shelf Life

NP575-KAP has a shelf life of 6 months from the date of manufacture when handled properly at 0 to 10 °C (32 to 50 °F.) NP575-KAP should be stabilized at room temperature (27 °C/80 °F) prior to printing. Please contact Customer Technical Support if you require additional information on the 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. Safety Data Sheets are available at this link.

Contact Information

To confirm this document is the most recent version, please contact Assembly@MacDermidAlpha.com

North America	Europe	Asia Pacific
109 Corporate Blvd South Plainfield, NJ 07080, USA 1.800.253.7837	Unit 2, Genesis Business Park Albert Drive Woking, Surrey, GU21 5RW, UK 44.01483.758400	8/F., Paul Y. Centre 51 Hung To Road Kwun Tong, Kowloon, Hong Kong 852.3190.3100

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

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