

WP601-ZH Solder Paste

Zero-Halogen Lead-Free Water-Soluble



Product Description

Kester WP601-ZH is a zero-halogen, lead-free, water-soluble solder paste formula for both nitrogen and air reflow applications. WP601-ZH is a breakthrough in water-soluble solder paste technology, providing a combination of consistent print performance at wide humidity levels, excellent solderability and ease of cleaning, while maintaining a zero-halogen flux formulation. WP601-ZH is a stable water-soluble formula, providing consistent stencil life, tack time and print definition. WP601-ZH is classified as ORM0 flux under IPC J-STD-004B.

Performance Characteristics:

- Zero-halogen (none intentionally added)
- Cleaning can be accomplished with heated de-ionized water
- Consistent printing performance at wide humidity levels (30-60% RH)
- Good solderability in air under straight profiles



RoHS Compliance

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



Physical Properties

Initial Tackiness (typical): 35 grams
Tested to J-STD-005A, IPC-TM-650, Method 2.4.44

Slump Test: Pass
Tested to J-STD-005A, IPC-TM-650, Method 2.4.35

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

Viscosity: 2200 poise
Malcom Viscometer PCU-203 @ 10 rpm, 25°C, measurement after 9 minutes



Reliability Properties

Copper Mirror Corrosion: Moderate
Tested to J-STD-004B, IPC-TM-650, Method 3.1.1.1

Surface Insulation Resistivity (SIR):
Pass, All Readings $>1.0 \times 10^8 \Omega$
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 2.3.28.1

Corrosion Test: Moderate
Tested to J-STD-004B, IPC-TM-650, Method 3.4.1.2

Surface Insulation Resistivity (SIR):
Pass All Readings $>1.0 \times 10^8 \Omega$
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

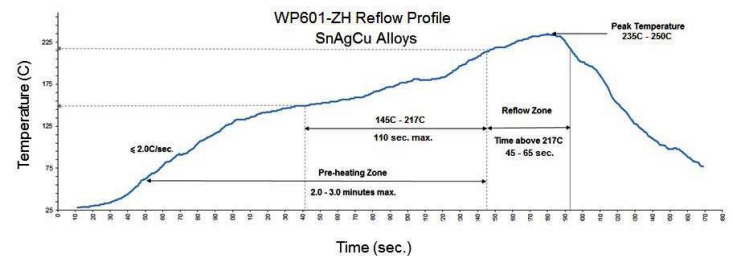
WP601-ZH is available in the SAC305 alloy with Type 4 powder. This is recommended for standard and fine pitch applications. For specific packaging information refer to Kester's Solder Paste Packaging Chart for available sizes. The appropriate combination depends on process variables and the specific application.

🔄 Printing Parameters

Squeegee Blade	80 mm/sec (3 in/sec), process window is under evaluation
Squeegee Speed	25mm/sec–150mm/sec
Stencil Material	Stainless Steel
Temperature/Humidity	Optimal ranges are 20-25°C (68-77°F) and 30-60% RH

🔄 Recommended Reflow Profile

The general recommended reflow profile for WP601-ZH formula made with SAC alloys is shown here as a starting point. Your final profile will depend on your board mass and component combination. WP601-ZH has excellent solderability and wetting capabilities in air or nitrogen reflow atmospheres. Please contact Kester Technical Support if you need profiling advice.



🧼 Cleaning

WP601-ZH residues are best removed using automated cleaning equipment (in-line) within 48 hours of soldering. De-ionized water is recommended for the final rinse. Water temperatures should be 49-60°C (120-140°F). Kester's 5768 Cleaner can also be used in a 1-2% ratio for aqueous cleaning systems.

📦 Storage, Handling and Shelf Life

Refrigeration is the recommended optimum storage condition for solder paste to maintain consistent viscosity, reflow characteristics and overall performance. WP601-ZH should be stabilized at room temperature prior to printing. WP601-ZH should be kept at standard refrigeration conditions, 0-10°C (32-50°F). Shelf life is 6 months from the date of manufacture when handled properly when held at 0-10°C (32-50°F). Storage of cartridges should be with the small tip down or on their sides, never with the large end down. Jars can be stored with the bottom down and stacked. Never freeze solder paste, this will shorten its shelf life. 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.