

Solder Pastes

F620

Lead Free No Clean

Description:

The F620 Series Solder Paste is a state-of-the-art no clean solder paste that promotes wetting and minimizes soldering defects. The F620 flux system is specifically optimized for Sn/Ag/Cu alloy soldering. Extensive testing at customer locations has proven this paste to be capable of defect-free performance in the production environment. The F620 Series exhibits minimal slump and has excellent print-after-wait performance. This formula provides superior performance on a variety of surfaces finishes and leaves behind a clear residue. Reflow can be accomplished in air or nitrogen.

● Key Benefits:

- Exceptional print-to-print consistency
- Excellent wetting
- 8 hour tack and work life
- Passes IPC requirements (flux)

● Physical Properties:**Metal Powder:**

Type 3 = -325/+500 mesh
Type 4 = -400/+500 mesh

Shape:

Spherical

Melting Range:

217° C - 219° C

Composition:

Sn96.5/Ag3/Cu0.5
Sn95.5/Ag4/Cu0.5

% Metal:

Standard 88.5 % ± 1

Viscosity Range:

200+/-30 Pa.s
Malcom 10 rpm.

Density:

7.4g/cc

Ring & Plug:

Shear stress 42 N/mm²

Cu Dissolution:

<96.5/3.5 at 288°C

● Performance Properties:**Typical Print Thickness:**

20 - 25 mil pitch: 0.006" - 0.008"
(150 - 200 microns)
<20 mil pitch: 0.004" (100 microns)

Minimum Pitch:

16 mil (400 microns) with type 3 powder

Minimum Pad Width:

8 mil (200 microns)

Slump

Per J-STD-005
10 min @ 25° C
10 min @ 150° C
No bridging at 0.075mm spacing

The descriptions and engineering data shown here have been compiled by Heraeus using commonly-accepted procedures, in conjunction with modern testing equipment, and have been compiled as according to the latest factual knowledge in our possession. The information was up-to date on the date this document was printed (latest versions can always be supplied upon request). Although the data is considered accurate, we cannot guarantee accuracy, the results obtained from its use, or any patent infringement resulting from its use (unless this is contractually and explicitly agreed in writing, in advance). The data is supplied on the condition that the user shall conduct tests to determine materials suitability for a particular application.

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Solder Balling:

Per J-STD-005
Preferred (No solder balls)

- **Residue Properties:**

Flux Activity:

According to J-STD-004
L1

SIR:

Per IPC SF - 818, J-STD-004
> 1 x 10⁸, Class 3

Copper Mirror:

Per IPC-SF-818, J-STD-004
Pass

Silver Chromate Test Paper:

Per - IPC-SF-818, J-STD-004
Pass

- **Recommended Processing Guidelines:**

Cleaning:

The flux residues may remain on the circuit. They do not need to be cleaned.

Clean wet paste with isopropanol or similar solvents.

If the printing interval exceeds 1 hour, remove the paste from the stencil.

The printed solder paste remains tacky for up to 8 hours to allow device insertion. The exact time depends on environmental conditions.

If the printed circuit boards will be stored for more than 6 hours after populating and prior to reflow, it is advisable to store the boards in a tightly closed area. This is especially important if the humidity exceeds 65%. Humidity should ideally be controlled between 45-65%.

Reflow Parameters:

For optimum results, the paste should be reflowed at a peak temperature of 15-30°C above the liquidous temperature of the alloy.

Time above liquidous should be maintained for 30-60 seconds.

Heating should be uniform across the substrate and components.

Reflow can be accomplished with any industry accepted process in air or N₂.

Packaging:

Available in 250, 500 and 1000 gram jars
6 ounce, 12 ounce and ProFlow™ cartridges

Storage:

Store at Refrigerator 5-12°C. Avoid direct sunlight and temperatures exceeding 35°C.

Allow paste to come to room temperature for a minimum of 2 hours prior to opening.

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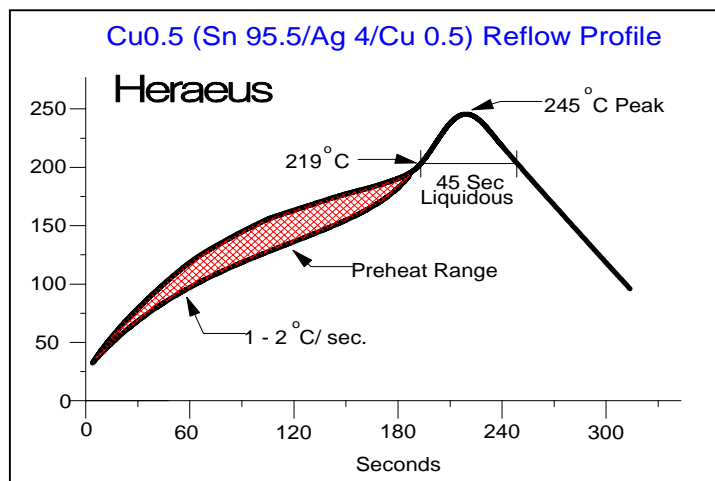
Safety:

When using do not eat, drink or smoke.
Avoid contact with skin and eyes.
Wear suitable gloves and eye protection.

Warranty:

Material guaranteed to meet
specifications for 3 months from date
of shipment.

Typical Sn95.5/Ag4/Cu0.5 Reflow Profile



CBK0303.2

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