

## V347 3-4LFF1

*Water Soluble Solder Paste*



### Product Description

Singapore Asahi has developed the Viromet\* Series Lead Free alloys. Asahi's Water Soluble Viromet Lead Free Solder Paste V347 3-4LFF1, with a composition Sn/Ag/Cu/In is formulated for ease of drop-in replacement for conventional SnPb solders in reflow soldering. It can be used even in a four zone hot air forced convection reflow oven and N<sub>2</sub> environment is not needed. With a short reflow cycle time, use of this solder paste minimizes damage to components and board materials.

The flux residue is easily removed with plain water (ultrasonic) or semi-aqueous cleaning methods, providing the board with high ionic cleanliness.

### Application

V347 3-4LFF1 is designed for standard stencil printing. The printing speed can be set at 25 - 40 mm/sec. Its optimum printing condition is 23 to 25 °C and humidity of 50 to 65 %RH, with at least 6 hours stencil life of continuous printing (process dependant). This paste could be used on the 0.5mm pitch pattern. Adjustment may be necessary based on specific process requirement.

\* World Patent No. 03/006200 A1

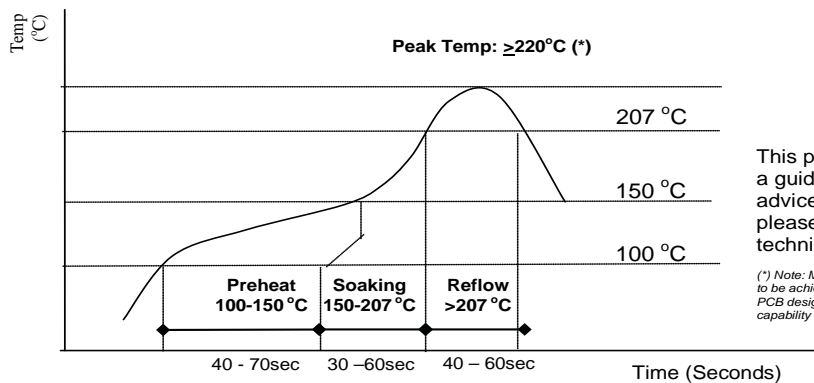
\* US Patent No. 5,985,212; 6,176,947; 6,843,862

### Specification

Item	Result
<b>Alloy</b>	
Alloy Composition	Sn/Ag4.1/Cu0.5/In7.0
Melting Temperature	202 - 207 °C
<small>Differential Scanning Calorimetry</small>	
Powder Size	25 – 45 μm, Type III, Mesh Size -325 / +500
<small>IPC TM-650 2.2.14</small>	
<b>Paste Flux</b>	
Flux Content	12.0 +/- 0.5 wt%
<small>IPC-TM-650 2.2.20</small>	
Halide Content	< 0.05 wt%
<small>JIS Z 3197 8.1.4.2.1</small>	
Copper Mirror Test	Classified as "H", Pass
<small>IPC-TM-650 2.3.32</small>	
<small>JIS Z 3197 8.4.2</small>	
Copper Corrosion Test	Pass
<small>IPC-TM-650 2.6.15</small>	
<small>JIS Z 3197 8.4.1</small>	
Flux Activity Classification	ROH0
<small>IPC J-STD-004</small>	
<b>Solder Paste</b>	
Viscosity	600 +/- 15% kcPs (12.0 wt% flux)
<small>IPC-TM-650 2.4.34</small>	
<small>JIS Z 3284 Annex 6</small>	
Thixotropic Index	210 +/- 20 Pa.s 0.40 +/- 0.05
<small>JIS Z 3284 Annex 6</small>	
Tackiness	> 24hrs (> 100gf)
<small>JIS Z 3284 Annex 9</small>	
Surface Insulation Resistance	
<small>(85°C, 85%RH, 168hrs)</small>	
<small>IPC-TM-650 2.6.3.3</small>	
<small>JIS Z 3197 8.5.3</small>	
Electromigration	> 1 x 10 <sup>8</sup> Ω, Pass > 1 x 10 <sup>11</sup> Ω, Pass
<small>(85°C, 88.5%RH, 596hrs)</small>	
<small>IPC-TM-650 2.6.14.1</small>	
Slump Test	No slump observed
<small>JIS Z 3284 Annex 7, Annex 8</small>	
Solder Ball Test	Pass
<small>IPC-TM-650 2.4.43</small>	
<small>JIS Z 3284 Annex 11</small>	

# V347 3-4LFF1 Water Soluble Solder Paste

## Recommended Reflow Profile



This profile is simply a guideline. For more advice on profiling, please contact Asahi technical support.

(\*) Note: Minimal peak temperature to be achieved but is dependent on PCB design/material and process capability & profiling in accuracy.

## Residue Removal

Washing of the PCB after reflow is necessary to remove the flux residue and soldered PCB should be washed within 4 hours after reflow. The flux residue can be easily removed by DI water using ultrasonic methods or by semi-aqueous cleaning methods. The water temperature is recommended at 40 to 65 °C with water pressure of 45 to 65 psi. Ionic cleanliness should be checked after washing.

## Storage, Handling and Shelf Life

Solder paste has to be thawed to room temperature (~25°C) prior using to avoid condensation. Paste left on the stencil should not be put back into the container together with the unused paste. It is preferable not to re-use solder paste left on the stencil after printing.

Generally the solder paste could last for 3 months from date of manufacturing, if kept under proper condition and temperature of 0 - 10 °C.

## Health and Safety

Do not handle the paste with your bare hand. Use proper tool when handling the paste. If the paste touches the skin, wash thoroughly with soap and water. For more information, please refer to Material Safety Data Sheet.

## Packaging

Packaging Type	Weight	Packaging Part
Jar	500g	E
	250g	F
Cartridge	1000g	D
Cassette	800g	I
Easipak	150g	J
	50g	H

### Solder Paste Product Coding System:

Alloy Type      Powder Size      -      Series Type      Formula Type      -      Packaging Part

Example:

**V347 3-4 LFF1-E**

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