Lead-Free Solder Paste for 01005 (0402 metric) Chip Components

**SN100C P520 D5**

High reliability lead-free solder paste optimized to deliver good reflow with chip components down to 0402 metric. SN100C P520 D5 improves the joint quality of densely populated boards with fillerless, small solder volume chip components and fine pitch mounting in which a reduction in joint strength is a concern due to the very small joint size.

- Excellent Reflow Characteristics on Very Small Pads
- Excellent Wetting Behavior (even on Brass and Nickel)
- Low Residue
- Good Hot Slump Performance
- Stable Printability on Very Small Pads
- Can Usually be Reflowed with a Profile Similar to that
- Commonly Used with SAC305 and SAC405 with 240°C Peak
- Compliant Alloy (SN100C: Provides High Reliability and Impact Strength)
- Substantial Cost Advantage

### Features

**Reflow**
- SN100C P520 D5
- Previous Product

**Wetting**
- SN100C P520 D5
- Previous Product

**Residue Cracking**
- SN100C P520 D5
- Previous Product

**Hot Slump**
- SN100C P520 D5
- Previous Product

**Printability on Very Small Pads**
- SN100C P520 D5
- Previous Product

#### Melting Behavior

**Excellent Reflow on Very Small Pads**

**Optimized for Fillertless Mounting**

- Pad dia.: 0.15mm
- 01005 (0402 metric) chip component

#### Wetting

**Excellent Wetting on Brass and Nickel**

#### Hot Slump

**Good Hot Slump Performance on Fine Pitch Pattern**

- Test Conditions:
  - Stencil Thickness: 60μm
  - Ramp Rate: 1.7°C/sec
  - Peak Temperature: 240°C
  - Time Above Liquidus: 50sec (Above 227°C)
  - Atmosphere: Air

#### Residue Cracking

**Crack-Free Flux Residues**

#### Printability on Very Small Pads

**Stable Printability on Very Small Pads**

- Test Conditions:
  - Stencil Thickness: 40μm
  - Temperature: 190°C
  - Pad Speed: 30mm/sec
## Properties

<table>
<thead>
<tr>
<th>Items</th>
<th>SN100C P520 D5</th>
<th>Test Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting Point (°C)</td>
<td>227</td>
<td>—</td>
</tr>
<tr>
<td>Particle Size (µm)</td>
<td>10-25/Equivalent to Type 5</td>
<td>—</td>
</tr>
<tr>
<td>Flux Category*1</td>
<td>RO0.0</td>
<td>ANSI/IPC JSTD-004A</td>
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<tr>
<td>Halogens Presence*2</td>
<td>Present</td>
<td>—</td>
</tr>
<tr>
<td>Halide Content (mass%)</td>
<td>0</td>
<td>JIS-Z-3197 8.1.2.1 / IPC-TM-650 2.3.35</td>
</tr>
<tr>
<td>Copper Plate Corrosion Test</td>
<td>Pass</td>
<td>JIS-Z-3197 8.4.1</td>
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<tr>
<td>Flux Content (mass%)</td>
<td>11.5</td>
<td>JIS-Z-3197 8.1.2</td>
</tr>
<tr>
<td>Viscosity (Pa • s)</td>
<td>200</td>
<td>JIS-Z-3284 Appendix 6 / IPC-TM-650 2.4.3.4</td>
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<tr>
<td>Thixotropic Index</td>
<td>0.59</td>
<td>JIS-Z-3284 Appendix 6</td>
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<tr>
<td>Surface Insulation Resistance *3 (Ω)</td>
<td>168hr</td>
<td>JIS-Z-3197 8.5.3 / IPC-TM-650 2.6.3.3</td>
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<tr>
<td>Electromigration Test *4</td>
<td>1000hr</td>
<td>JIS-Z-3197 8.5.4</td>
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<tr>
<td>Spread Factor (%)</td>
<td>79</td>
<td>JIS-Z-3197 8.3.1.1</td>
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</tbody>
</table>

*1 Flux Category (Activity level): Resin 30 Type
*2 Halogen Elements: F, Cl, Br, and I.
*3 Surface Insulation Resistance: 85°C 85%RH 168hr
*4 Electromigration: 85°C 85%RH 1000hr

## Recommended Thermal Profile

Can usually be reflowed with a profile similar to that commonly used with SAC305 and SAC405 with 240°C peak.

![Thermal Profile Diagram]

Note: The ideal reflow profile will vary depending on the board type and the characteristics of the reflow oven. Please confirm the optimum thermal profile before commencing mass production.

## Powder Particle Size

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Code</th>
<th>Powder Particle Size (µm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SN100C</td>
<td>P520</td>
<td>D5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 ~ 25</td>
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</table>

## Package

500g/Jar 10 Jars / Box (5kg)

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