Product Data Sheet for Chip Quik® Pt # SMD4300AX10 w/lead

4300 Water Washable No-Clean Solder Paste

Product Description
- Synthetic activator
- Long stencil life
- Wide process window
- Excellent wetting compatibility on most board finishes
- Low voiding, no beading, anti-tombstoning
- Compatible with enclosed printing heads

Alloys
AMTECH manufactures a low-oxide, spherical and uniformly sized powder. 4300 is available in the following alloys: 63Sn/37Pb, 62Sn/36Pb/2Ag, 60Sn/Pb40, 43Sn/43Pb/14Bi and 42Sn/58Bi.

Micron Size | Type | Pitch Requirements
--- | --- | ---
75 - 45 | Type-2 | 24mil & above
45 - 25 | Type-3 | 16mil to 24 mil
38 - 20 | Type-4 | 12mil to 16mil
25 - 15 | Type-5 | <12mil
15 - 5 | Type-6 | <8mil

Available Packaging
The following packaging options are available for stencil printing and dispensing applications: 250g and 500g jars; 250g and 700g cartridges; 750g ProFlow® cassettes; 35g and 100g syringes; 2,500g FreshMix® Kits.

Stencil Life
- >8 hrs. @ 30–45% RH & 22–25°C
- ~4 hrs. @ 45–70% RH & 22–25°C

Viscosity
- Printing applications: 600 to 900Kcps +/-10%
- Dispensing applications: 450Kcps +/-10%
- Tested according to IPC-TM-650

Tack Value
- Typical tackiness: 34g force

Printing
The print definition of 4300 is ideal for fine pitch applications. The stencil life of this water-soluble product virtually eliminates waste of solder paste. Consult the powder distribution chart to determine your mesh size requirements.

Printer Operation
The following are general guidelines for stencil printer optimization with 4300. Some adjustments may be necessary based on your process requirements.
- Print Speed: 25–100mm/sec
- Squeegee Pressure: 0.2–0.7kg/inch of blade
- Under Stencil Wipe: Once every 10–25 prints or as necessary

Stencil Cleaning
Automated stencil cleaning systems for both stencil and misprinted boards. Manual cleaning using water at 50°C or 99% isopropyl alcohol (IPA). Post-reflow cleaning using water at 50°C with 50 PSI pressure.

Storage and Handling Procedures
Refrigerated storage at 42–47°F will prolong the solder paste shelf life to no less than 6 months. Syringes & cartridges should be stored vertically with the dispensing tip down. Solder paste should be allowed to reach ambient temperature naturally, prior to use (about 6-8 hours). NEVER FREEZE SOLDER PASTE.
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J-STD-004 (IPC-TM-650) Test Results

<table>
<thead>
<tr>
<th>Test</th>
<th>Standard</th>
<th>Values</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flux Designator</td>
<td>IPC-TM-650 2.3.35</td>
<td>NA</td>
<td>RELO</td>
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<tr>
<td>SIR Test</td>
<td>IPC-TM-650 2.6.3.3</td>
<td>9.36E+10</td>
<td>PASS</td>
</tr>
</tbody>
</table>

Recommended Profiles:
Profile-A was designed to serve as a starting point for process optimization using 4300. A cool down rate of (-) 2–4°C/second is ideal for the formation of a fine grain structure without risking damage to thermally sensitive components.

A profile utilizing a soak of up to two minutes at 155°C may help to minimize voiding in BGA assemblies. This will allow more time for solvent components of the solder paste to outgas prior to reflow.

The information contained herein is based on technical data that we believe to be reliable and is intended for use by persons having technical skill, at their own risk. Users of our products should make their own tests to determine the suitability of each product for their particular process. AMTECH will assume no liability for results obtained or damages incurred through the application of the data presented.

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