Indium510L Solder Paste

Features
• Specifically designed for laser reflow
• Very fine pitch print deposition
• Excellent wetting on multiple surfaces (OSP, Immersion Ag, Immersion Sn, ENIG)
• No-clean residue
• Works in both air and nitrogen
• Halogen-free

Standard Product Specifications

<table>
<thead>
<tr>
<th>Alloy</th>
<th>SAC305</th>
</tr>
</thead>
<tbody>
<tr>
<td>Particle Size</td>
<td>T4 (20-38µ)</td>
</tr>
<tr>
<td>Metal Load</td>
<td>86%-89%</td>
</tr>
</tbody>
</table>

Recommended Initial Process Settings

<table>
<thead>
<tr>
<th>1/2 Laser to Paste Ratio</th>
<th>4W for 2 seconds</th>
<th>89% ML</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/1 Laser to Pad Ratio</td>
<td>4W for 2 seconds</td>
<td>86% ML</td>
</tr>
</tbody>
</table>

Higher metal load tends to produce less solder balling and solder splattering.

Packaging
Standard packaging for stencil printing applications includes 500g jars and 600g cartridges. For dispensing applications, 10cc and 30cc syringes are standard. Other packaging options may be available upon request.

Storage and Handling Procedures
The shelf life of Indium510L is no less than 6 months at <10°C. Solder paste packaged in syringes and cartridges should be stored tip down.

Solder paste should be allowed to reach ambient working temperature prior to use. Generally, paste should be removed from refrigeration at least two hours before use. Actual time to reach thermal equilibrium will vary with container size. Paste temperature should be verified before use. Jars and cartridges should be labeled with date and time of opening.

Compatible Products
• Rework Flux: TACFlux® 020B, TACFlux® 089HF
• Cored Wire: CW-807
• Wave Flux: WF-7745, WF-9945

J-STD TESTS & RESULTS

Test | Result | Test | Result
--- | --- | --- | ---
J-STD-004 (IPC-TM-650) | Flux Type (per J-STD-004A) | ROLO | Solder Paste Viscosity (#256 88% Type 4)
Elemental Analysis for Cl | < .05% (ND) | Brookfield (5 rpm) | Pass
Elemental Analysis for Br | < .05% (ND) | Slump Test | Pass
Post Reflow Flux Residue (ICA Test) | <5% of solder paste | Solder Ball Test | 50 grams (typical)
SIR (Ohms) | Pass (>10³ @ 85°C, 85% R.H.) | Typical Tackiness | Pass
Wetting Test | |

All information is for reference only. Not to be used as incoming product specifications.
Indium510L Solder Paste

Printing

Stencil Design:
Electroformed and laser cut/electropolished stencils produce the best printing characteristics among stencil types. Stencil aperture design is a crucial step in optimizing the print process. The following are a few general recommendations:

- Discrete components — A 10–20% reduction of stencil aperture has significantly reduced or eliminated the occurrence of mid-chip solder beads. The “home plate” design is a common method for achieving this reduction.
- Fine pitch components — A surface area reduction is recommended for apertures of 20 mil pitch and finer. This reduction will help minimize solder balling and bridging that can lead to electrical shorts. The amount of reduction necessary is process dependent (5–15% is common).
- For optimum transfer efficiency and release of the solder paste from the stencil apertures, industry standard aperture and aspect ratios should be adhered to.

<table>
<thead>
<tr>
<th>Printer Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solder Paste Bead Size</td>
</tr>
<tr>
<td>Print Speed</td>
</tr>
<tr>
<td>Squeegee Pressure</td>
</tr>
<tr>
<td>Underside Stencil Wipe</td>
</tr>
<tr>
<td>Squeegee Type/Angle</td>
</tr>
<tr>
<td>Separation Speed</td>
</tr>
<tr>
<td>Solder Paste Stencil Life</td>
</tr>
</tbody>
</table>

Cleaning

Indium510L is designed for no-clean applications, however the flux can be removed if necessary by using a commercially available flux residue remover.

Stencil Cleaning is best performed using isopropyl alcohol (IPA) as a solvent. Most commercially available stencil cleaners also work well.

Safety Data Sheets
The SDS for this product can be found online at http://www.indium.com/sds

This product data sheet is provided for general information only. It is not intended, and shall not be construed, to warrant or guarantee the performance of the products described which are sold subject exclusively to written warranties and limitations thereon included in product packaging and invoices. All Indium Corporation’s products and solutions are designed to be commercially available unless specifically stated otherwise.