

PRODUCT DATA SHEET

BP-3106

BGA Bumping Solder Paste

Introduction

BP-3106 is a nitrogen reflow, no-clean solder paste with Type 3 powder specifically formulated for BGA bumping applications. The flux is specifically formulated for SnPb alloy systems. This product provides consistent volume deposition, extremely low-voiding, and high yields. If cleaning is needed, the flux residue may be removed with commercially available cleaners.

Features

- Unique material capable of producing bump heights approximately 50% of the pitch
- Excellent release properties
- Robust slump resistance
- Used for both area array and peripheral BGAs
- Ultra-low voiding
- Passes SIR before and after cleaning

Application

BP-3106, made with Type 3 SnPb solder powder, delivers excellent stencil release for 50, 40, and 32mil pitch stencil printing BGA bumping with bump heights of 23, 20, and 15mil, respectively. The weight ratio of the solder powder and solder paste is typically 92.8%.

Standard Product Specifications

Alloy	Metal Load	Mesh Size	Particle Size
Sn63/Pb37	92.8%	Type 3	-45/+25 μ

Bellcore and J-STD Tests and Results

Test	Result	Test	Result
J-STD-004 (IPC-TM-650)		J-STD-005 (IPC-TM-650)	
Flux Type Classification	ROL1	Typical Viscosity – Brookfield – Malcom	1,150kcps 2,000 poise
Corrosion	Pass	Typical Tackiness	26.0g/mm ²
SIR – Before cleaning – After Cleaning	Pass Pass	<i>All information is for reference only. Not to be used as incoming product specifications.</i>	
Acid Value	20.0		

Packaging

The standard packaging for this paste is 500g jars and 700g cartridges. In addition, this paste can be applied using an enclosed printhead such as DEK's ProFlow and MPM's rheo pump. Other packaging options are available upon request.

Storage and Handling Procedures

Refrigerated storage will prolong the shelf life of solder paste. The shelf life of **BP-3106 BGA Bumping Solder Paste** is 3 months at storage temperatures of -20–5°C. Solder paste contained in syringes and cartridges should be stored tip down.

Solder paste should be allowed to reach ambient temperature prior to use. Generally, paste should be removed from refrigeration at least 6 hours before use; this will vary with packaging size. Paste temperature should be verified before use, and packaging should be labeled with opening time.

Technical Support

Indium Corporation's internationally experienced engineers provide in-depth technical assistance to our customers. Thoroughly knowledgeable in all facets of Material Science as it applies to the electronics and semiconductor sectors, Technical Support Engineers provide expert advice in solder properties, alloy compatibility and selection of solder preforms, wire, ribbon, and paste. Indium Corporation's Technical Support engineers provide rapid response to all technical inquiries.

Safety Data Sheets

The SDS for this product can be found online at:
<http://www.indium.com/sds>

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Printing

Stencil Design:

Electroformed and laser cut/electropolished stencils produce the best printing characteristics among stencil types. For adequate release of the solder paste from each stencil aperture, the minimum aspect ratio of 1:5 and area ratio of 0.66 are suggested. The aspect ratio is defined as the width of the stencil aperture divided by the thickness of the stencil. The area ratio is defined as the ratio of the area of pad divided by the area of aperture walls. IPC-7525 stencil design guidelines may be followed for stencil design of BGA bumping applications.

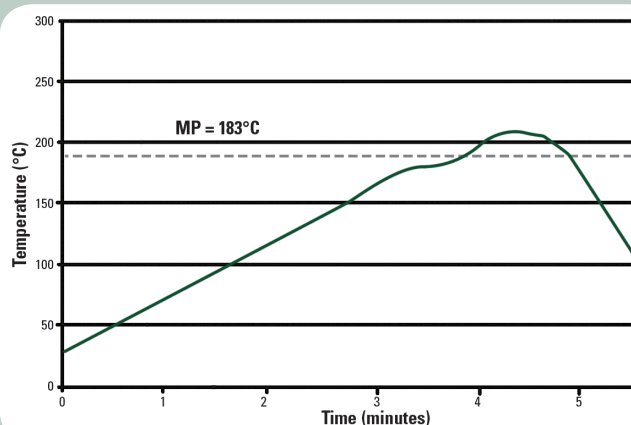
Printer Operation:

Below are listed the general recommendations for stencil printer operations, but adjustments may be necessary based on specific process requirements:

Printer Operation	
Printer Speed	40mm/sec
Squeegee Pressure	9kg/200mm per squeegee
Underside Stencil Wipe	Once every 5 prints
Solder Paste Stencil Life	>8 hours @ 30–60% RH
Print Gap	0.15mm
Separation Speed	5mm/sec

Reflow

Recommended Profile:



This reflow profile is designed for use with 63Sn/37Pb. Adjustments to the profile may be necessary based on specific process requirements.

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Contact our engineers today: askus@indium.com

Learn more: www.indium.com



ASIA +65 6268 8678 • CHINA +86 (0) 512 628 34900 • EUROPE +44 (0) 1908 580400 • USA +1 315 853 4900



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