

Product Data Sheet

# BP-3106 BGA Bumping Solder Paste

## 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 BGA's
- Ultra-low voiding
- Passes SIR before and after cleaning

## 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 Sn/Pb 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.

## Application

**BP-3106**, made with type 3 Sn/Pb solder powder, delivers excellent stencil release for 50, 40, and 32 mil pitch stencil printing BGA bumping with bump heights of 23 mil, 20 mil, and 15 mil, 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
Sn63Pb37	92.8%	Type 3	-45/+25 µ

## 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 to 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 six 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.

## Material Safety Data Sheets

The MSDS for this product can be found online at <http://www.indium.com/techlibrary/msds.php>

## J-STD TESTS & RESULTS

Test	Result
• Flux Type Classification	ROL1
• Corrosion	Pass
• SIR	
before cleaning	Pass
after cleaning	Pass
• Acid Value	20.0
• Typical Viscosity	
Brookfield	1150 kcps
Malcom	2000 poise
• Typical Tackiness	26.0 g/mm <sup>2</sup>

*All information is for reference only. Not to be used as incoming product specifications.*

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## BP-3106 BGA Bumping Solder Paste

### 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.

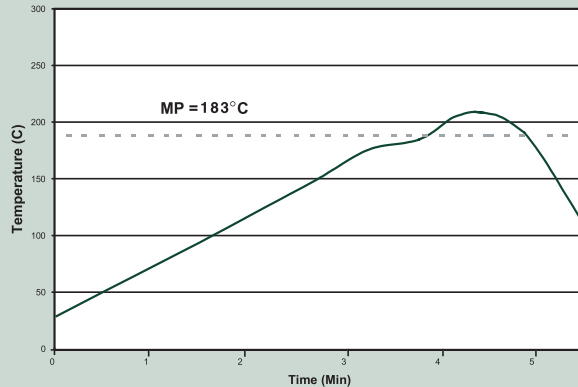
#### Printer Operation:

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

- Printer Speed: 40 mm/sec.
- Squeegee Pressure: 9kg/200mm per squeegee
- Underside Stencil Wipe: Once every 5 prints
- Solder Paste Stencil Life: >8 hrs. @ 30-60% RH
- Print gap 0.15 mm
- Separation Speed 5 mm/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.

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.

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