Indium5.7LT
Solder Paste

Features
- Formulated for use with the eutectic 58Bi/42Sn and 57Bi/42Sn/1Ag alloys
- Low temperature Pb-free solution
- Clear residue
- Exceptional wetting in air reflow
- Halogen-free

Introduction
Indium5.7LT is an air reflow, halogen-free, no-clean solder paste designed for assembly processes using eutectic SnBi and SnBiAg alloys. This paste is a moderate residue product with exceptional wetting capabilities. The low activation temperature of **Indium5.7LT**, in combination with the SnBi alloy, can be especially useful as a low temperature, Pb-free solution.

Alloys
Indium Corporation manufactures low-oxide spherical powder composed of the 58Bi/42Sn eutectic alloy in the industry standard Type 3 mesh size. Other non-standard mesh sizes are available upon request. The weight ratio of the flux/vehicle to the solder powder is referred to as the metal load and is typically in the range of 83–92% for standard alloy compositions.

Standard Product Specifications

Alloy	Metal Load		Mesh Size
	Printing	Dispensing	
Indalloy® 281 (58Bi/42Sn)	90%	84%	Type 3
Indalloy® 282(57Bi/42Sn/1Ag)			
Indalloy® 281 (58Bi/42Sn)	89.5%	84%	Type 4
Indalloy® 282(57Bi/42Sn/1Ag)			

Packaging
Standard packaging for **Indium5.7LT** is 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 **Indium5.7LT** is 6 months when stored at <-10°C. Solder paste packaged in 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.

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

OVER→

BELLCORE AND J-STD TESTS & RESULTS

Test	Result
J-STD-004 (IPC-TM-650)	
• Flux Type Classification	ROL0
• Presence of Halide	
Fluoride Spot Test	Pass
Ag Chromate	Pass
Quantitative Halide Content	0%
• Post Reflow Flux Residue (ICA Test)	<5% of solder paste
• Corrosion	Pass
• SIR (ohms)	Pass

Test	Result
J-STD-005 (IPC-TM-650)	
• Typical Solder Paste Viscosity (Eutectic Sn/Bi, Type 3) Malcolm (10PRM, 5min)	2000 Poise
• Typical Tackiness	30g
• Solder Ball Test	Pass
• Wetting Test	Pass
• Slump Test	Pass

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

www.indium.com askus@indium.com

ASIA: Singapore, Cheongju, Malaysia: +65 6268 8678
CHINA: Suzhou, Shenzhen: +86 (0)512 628 34900
EUROPE: Milton Keynes, Torino: +44 (0) 1908 580400
USA: Utica, Clinton, Chicago, Rome: +1 315 853 4900

INDIUM CORPORATION®

ISO 9001 REGISTERED

Indium5.7LT 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 in stencil aperture area may significantly reduce or eliminate 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).
- A minimum aspect ratio of 1.5 is suggested for adequate release of solder paste from stencil apertures. The aspect ratio is defined as the width of the aperture divided by the thickness of the stencil.

Printer Operation:

The following are general recommendations for stencil printer optimization. Adjustments may be necessary based on specific process requirements:

• Solder Paste Bead Size:	20–25mm diameter
• Print Speed:	25–100mm/sec
• Squeegee Pressure:	0.018–0.027kg/mm of blade length
• Underside Stencil Wipe:	Once every 10–25 prints
• Solder Paste Stencil Life:	>8 hrs. @ 30–60% R.H. & 22–28°C

Cleaning

Indium5.7LT is designed for no-clean applications, however, the flux can be removed if necessary by using a commercially available flux residue remover.

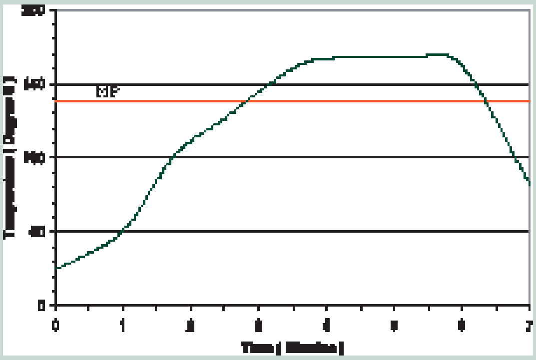
Stencil Cleaning: This is best-performed using an automated stencil cleaning system for both stencil and misprint cleaning to prevent extraneous solder balls. Most commercially available stencil cleaning formulations including isopropyl alcohol (IPA) work well.

Compatible Products

- Rework Flux: TACFlux® 057

Reflow

Recommended Profile:



This profile is designed for use with Indalloy® 281 and can serve as a general guideline in establishing a reflow profile for use with other alloys. Adjustments to this profile may be necessary based on specific process requirements.

Heating Stage:

A linear ramp rate of 0.5°–1°C/second allows gradual evaporation of volatile flux constituents and prevents defects such as solder balling/beading and bridging as a result of hot slump. It also prevents unnecessary depletion of fluxing capacity when using higher temperature alloys.

Liquidus Stage:

A peak temperature of 25°–45°C (175°C shown) above the melting point of the solder alloy is needed to form a quality solder joint and achieve acceptable wetting due to the formation of an intermetallic layer.

Cooling Stage:

A rapid cool down is desired to form a fine grain structure. Slow cooling will form a large grain structure, which typically exhibits poor fatigue resistance. The acceptable cooling range is 0.5°–6.0°C/second (2.0°–6.0°C/second is ideal).

www.indium.com askus@indium.com

ASIA: Singapore, Cheongju, Malaysia: +65 6268 8678
CHINA: Suzhou, Shenzhen: +86 (0)512 628 34900
EUROPE: Milton Keynes, Torino: +44 (0) 1908 580400
USA: Utica, Clinton, Chicago, Rome: +1 315 853 4900

INDIUM CORPORATION®

ISO 9001 REGISTERED