

INDIUM 8.9

SOLDER PASTE

Multi-faceted performance to bring the right balance of attributes, tailored to your process

Ideal for miniaturized components and fine-pitch assembly

- Designed especially for CSP, 0201, and 01005 components

First-class printing performance

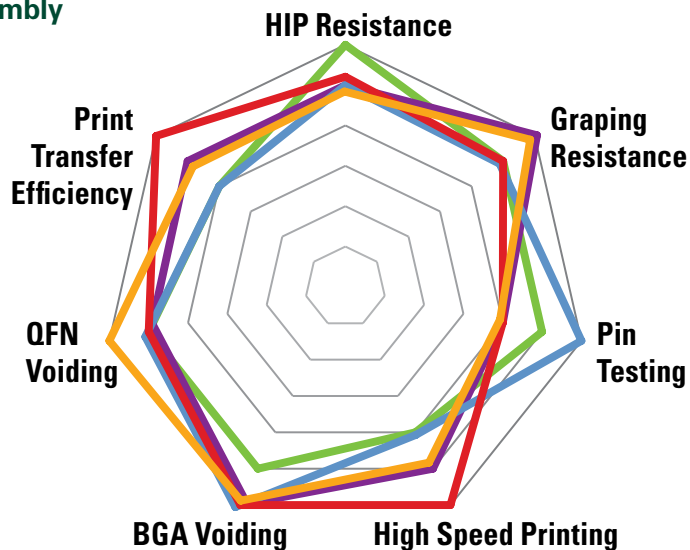
- Excellent print transfer through tiny apertures with area ratios <0.66
- Long stencil life and forgiving response-to-pause
- High component retention tack prevents components from shifting

Robust reflow performance

- Wide process window for flexible reflow profiling
- Optimal wetting to all common surface finishes

Resists voiding

- Low voiding (<5%) for BGAs with via-in-pad technology



Specialized formulations for enhanced performance focus:

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8.9 Solder Paste Eliminates HIP

- Strong oxidation barrier to promote coalescence after heat exposure
- High tackiness to maintain contact with components
- Clear probe-testable flux residue

Indium8.9E

8.9E Solder Paste Eliminates Graping

- Strong oxidation barrier promotes complete coalescence
- Resists premature flux spread to prevent surfaces from oxidizing

Indium8.9HF-1

8.9HF-1 Solder Paste Enables In-circuit Probe Testing

- Halogen-free
- Thermally stable residue designed to stay probe-testable
- Fewer false testing failures means quicker cycle times and less rework

Indium8.9HFA

8.9HFA Solder Paste Delivers Superior Printing for Miniaturization

- Best-in-class high speed printing
- Optimal print performance for the smallest components and apertures
- Halogen-free

Indium9.0A

9.0A Solder Paste Minimizes QFN Voiding

- Lowest level of voiding in this series for QFNs, BGAs, and CSPs
- Oxidation inhibition promotes complete coalescence after long reflow profiles
- Optimized flux volatiles promote oxidation removal, while reducing gas entrapment



<http://indium.us/D181>

From One Engineer To Another[®]

www.indium.com

askus@indium.com

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FEATURED Pb-Free ALLOYS

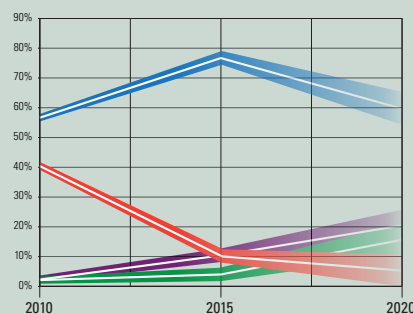
Pb-Free Alloys for Solder Paste

Common Name	Composition	Solidus (°C)	Liquidus (°C)	Comments
InSn	52.0In/48.0Sn	118 (eutectic)		Lowest melting point practical solder
BiSn	58.0Bi/42.0Sn	138 (eutectic)		Good thermal fatigue performance; established history
BiSnAg	57.0Bi/42.0Sn/1.0Ag	139	140	Ag addition makes this alloy less brittle than BiSn
Indalloy227	77.2Sn/20.0In/2.8Ag	175	187	Not for use over 100°C due to 118°C SnIn eutectic
SnInCe	87.0Sn/13.0In+Ce	190	205	Best-in-class thermal cycling performance due to high ductility; addresses high CTE mismatches
Indalloy254	86.9Sn/10In/3.1Ag	204	205	No SnIn eutectic problems; potential uses for flip-chip assembly
SnBiAg	91.8Sn/4.8Bi/3.4Ag	211	213	Board and component metallizations must be Pb-free
SAC405	95.5Sn/4.0Ag/0.5Cu	217	218	Favored alloy for enhanced thermal reliability over SAC alloys with less Ag
SAC387	96.5Sn/3.8/0.7Cu	217	219	Original iNEMI recommended SAC alloy
SAC305	96.6Sn/3.0Ag/0.5Cu	217	220	Recommended SAC alloy by the Solder Products Value Council
SAC105	98.5Sn/1.0Ag/0.5Cu	217	225	Low-cost alloy with reasonable thermal reliability
SAC105Mn	98.5Sn/1.0Ag/0.5Cu+Mn	217	225	Drop test performance as good as SnPb
SAC0307	99.0Sn/0.3Ag/0.7Cu	217	227	Low-cost SAC alloy
SnCu	99.3Sn/0.7Cu	227 (eutectic)		Inexpensive; possible use in wave soldering
Sn992	99.2Sn/0.5Cu+Bi+Co	227		High-performance and low-cost solder alloy
"J" alloy	65.0Sn/25.0Ag/10.0Sb	223 (eutectic)		Die-attach solder alloy; very brittle
Indalloy133	95.0Sn/5.0Sb	235	240	High-temperature Pb-free alloy
Indalloy259	90.0Sn/10.0Sb	250	272	High-temperature Pb-free alloy

Indium Corporation offers hundreds of other alloy choices. Visit our website at www.indium.com/alloysolderchart.php for more information.

Recommended Alternatives to SAC305

High Reliability	Low Cost	Low Melting Point
<ul style="list-style-type: none"> • SAC405 • SACM01 • SnInCe 	<ul style="list-style-type: none"> • Sn992 • SAC105 • SAC0307 	<ul style="list-style-type: none"> • BiSn • BiSnAg • InSn



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