

Preferred Product Guide for PCB Assembly


Founded in 1934 in Utica, NY as a company that traded and manufactured indium metal-based products, Indium Corporation is now a leading supplier of solder paste and other soldering materials including: solder wire, solder fluxes, solder preforms, and bar solder.




Manufacturing & Quality

Indium Corporation has three manufacturing facilities in the USA, as well as facilities in China, England, Singapore, and Korea, that service its multi-national customers in North America. The company's ISO-9001-certified operation in Elk Grove Village, IL is the main manufacturing facility for wave solder flux, flux-cored solder wire, and bar solder. Solder paste, solder preforms, and many other products are manufactured at the ISO-9001-certified facilities in Utica and Clinton, NY.

Sales & Marketing

Indium Corporation utilizes direct sales offices, manufacturers' representatives, manufacturing partners, and distributors throughout the world. The company maintains one of the world's most comprehensive soldering websites, with a broad range of product support information, technical papers, application notes, and **an active blog environment** which discusses the latest in electronics assembly technology. Information about your local sales representative can also be found on the website. Check it out at: www.indium.com. 

Research & Development and Technical Support

While other solder companies are reducing their technical effort, Indium Corporation is increasing its investment in both technical support and new product development. The company maintains one of the industries largest and most comprehensive soldering development and test facilities. In addition, it has technical support personnel throughout North America, Europe, and Asia. For a full list of Indium Corporation's technical support staff visit: www.indium.com/services/technicalsupport/ 

Look for the web tip symbol 



Preferred Products



With so many product choices, it is often difficult to decide which are best suited for your application. Indium Corporation makes the decision process easier by featuring a narrow range of products with proven compatibility and reliability.

GENERATION III and GENERATION IV Pb-Free Soldering Materials

In addition to its industry leading tin-lead products, Indium Corporation offers the largest and most successful line of **GENERATION III** and **GENERATION IV** Pb-Free soldering products.

How can you differentiate between the different generations of Pb-Free materials?

- **GENERATION I** – Tin-lead products adapted to use with Pb-Free alloys
- **GENERATION II** – The first group of products designed specifically for Pb-Free electronics assembly. Still viable for many of today's assembly needs. However, leading-edge, complex assemblies may experience reduced reliability and low yields when using **GENERATION II** versus **GENERATION III** or **GENERATION IV**.
- **GENERATION III** – This generation of products has overcome prior Pb-Free product flaws; however, they generally contain small amounts of halogens.
- **GENERATION IV** – These are typically **GENERATION III** materials that have been modified to eliminate halogens. They are fully compliant with RoHS and do not contain any *Substances of Very High Concern* (SVHCs) as defined by REACH.

For more information about why **GENERATION IV** products can be important to you, please visit www.halogen-free.com.



Preferred Products by Family

Indium Corporation has simplified the product selection process by featuring products that have been shown to be the most capable and compatible. Each of the preferred product families below has proven compatibility and reliability.

Halogen-Free, Pb-Free, No-Clean		
Product Line	Product Name	Comment
Lead-Free Solder Paste	Indium8.9HF	Solders similar to halogen containing, (with SAC305 alloy)
Wave Flux (alcohol)	WF-9945	Solders similar to halogen containing, but no halogen
Flux-Cored Wire	CW-801	Solders similar to halogen containing (with SAC305 alloy)
TACFlux	020B	Safe residue without heating
Flux Pen	FP-771	Safe residue without heating

Pb-Free, No-Clean (contains some halogens with a stronger flux)

Product Line	Product Name	Comment
Solder Paste	Indium8.9	Higher activity, very low defect (with SAC305 alloy)
Wave Flux (alcohol)	WF-9942	Optimum lead-free hole fill
Wave Flux (VOC-Free)	WF-7742	Wide process window, excellent hole fill
Flux-Cored Wire	CW-201	Safe residue without heating
TACFlux	089	8.9 solder paste flux for rework Safe residue without heating
Flux Pen	FP-771	Safe residue without heating

Tin-Lead, No-Clean

Product Line	Product Name	Comment
Solder Paste (halogen-free)	RMA-SMQ92J	Pin testable halogen free no-clean (with 63/37 alloy)
Solder Paste	RMA-SMQ51A	Higher activity no-clean (with 63/37 alloy)
Wave Flux (alcohol)	WF-9942	Superior hole-Fill
Wave Flux (VOC-Free)	WF-7742	Wide process window, excellent hole fill
Flux-Cored Wire (halogen-free)	CW-801	Halogen-free (with 63/37 alloy)
Flux-Cored Wire (more active)	CW-201	Contains some halogen (with 63/37 alloy)
TACFlux	020B	Safe residue without heating
Flux Pen	FP-771	Safe residue without heating

Water-Wash, Pb-Free and Tin-Lead (circuit board residues are designed to be cleaned with water after soldering)

Product Line	Product Name	Comment
Solder Paste (lead-free)	Indium3.2	Works well in any environment (with SAC305 alloy)
Solder Paste (tin-lead)	Indium6.3	Works well in any environment (with 63/37 alloy)
Wave Flux (alcohol)	1085	High activity, low solids
Wave Flux (VOC-Free)	1010	High activity, low solids
Flux-Cored Wire	CW-301	High activity, easy cleanability (SAC305 or 63/37 alloy)
TACFlux	025	For all water wash
Flux Pen	FP-300	For all water wash

Product Capabilities

Solder Wire

Indium Corporation manufactures a broad range of solid and flux-cored solder wire. Materials are manufactured at Indium's Chicago facility, which employs the most modern equipment and experienced work force to produce void-free wire with tight dimensional tolerances. Indium Corporation has blended traditional flux-cored solder wire chemistry with some of the most modern flux technology to make products that perform exceptionally well, have full compatibility with other Indium Corporation products, and meet the latest industry standards.

Most Common Wire Solder Alloys

Alloy	Density lbs/in ³	Specific Gravity	Liquidus (°C)	Solidus (°C)
Sn63/Pb37	0.3035	8.40	183	183
Sn60/Pb40	0.3071	8.50	183	191
Sn62/Pb36/Ag2	0.3039	8.41	179	179
Sn96.5/Ag3.0/Cu0.5 (SAC305)	0.2674	7.40	220	217
Sn95.5/Ag3.8/Cu0.7 (SAC387)	0.2674	7.40	220	217
Sn99.5/Cu0.5/Co (Cobalt995)	0.2641	7.31	227	227

Other alloys are available upon request. For a complete list of alloys check www.indium.com.



Common Diameters & Packaging

Diameter	Spool Wt	63/37 Length	SAC305 Length
0.010" ± 0.002"	1/4 lb	966 ft/spool	1097 ft/spool
0.015" ± 0.002"	1/4 lb	429 ft/spool	487 ft/spool
0.020" ± 0.002"	1 lb	966 ft/spool	1097 ft/spool
0.025" ± 0.002"	1 lb	618 ft/spool	702 ft/spool
0.032" ± 0.002"	1 lb	377 ft/spool	428 ft/spool
0.040" ± 0.002"	1 lb	242 ft/spool	274 ft/spool
0.062" ± 0.002"	1 lb	101 ft/spool	114 ft/spool
0.125" ± 0.002"	1 lb	50 ft/ spool	66 ft/spool

Other wire diameters and packaging styles are available, including metric sizes, 5lb. spools, and other spool weights.

Standard Flux Percents

1%	0.6 to 1.2%
2%	1.6 to 2.2%
3%	2.7 to 3.2%



Solder Paste

Indium Corporation is the leading innovator in solder pastes for electronics assembly. Pb-Free solder pastes can be made using a variety of Pb-Free alloys. In addition, a number of tin-lead alloys are available for Indium's tin-lead solder pastes. For a complete list of alloys, please check www.indium.com.

Solder Paste Packaging

Standard Jars	500g	
Standard Cartridge	600g	6fl oz
Standard Syringes	30g	10cc
	100g	30cc

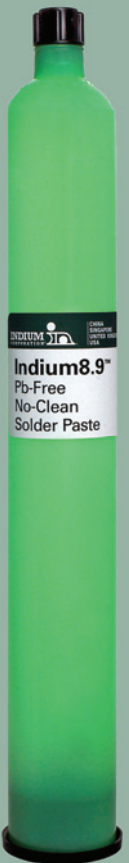
Additional packaging styles are available upon request.

Wave Solder Flux

Indium Corporation manufactures a full line of competitive, state-of-the-art wave solder fluxes for electronics assembly. We are the first company to introduce Generation IV halogen-free Pb-Free wave fluxes that solder as well as halogen-containing fluxes. All wave solder fluxes are available in 55 gallon (200 liter) drums, 5 gallon (20 liter) containers, and 1 gallon containers.

Engineered Solders

Indium Corporation offers a full range of engineered soldering materials and specialty solder alloys with melting points from 58°C to 1,064°C. Engineered solder applications exist in every market. In addition, Indium Corporation has the technical expertise to guide you to the right solution for your specific application. For more information about Indium's engineered solders and specialty solders, visit www.esolders.com.






Lead-Free



Tin-Lead

Bar Solder and Miscellaneous Products

Product	Description	Availability
SAC305 (96.5Sn/3Ag/0.5Cu)	Most common lead-free	25 lbs per box, triangular bar
Cobalt995 (99.5Sn/0.5Cu+Co)	Low cost lead-free	25 lbs per box, triangular bar
63Sn/37Pb	Standard tin-lead	25 lbs per box, trapezoidal bar; std and low dross
Flux Pens	No-clean and water-wash	20 per box
TACFlux	No-clean and water-wash	5 cc, 10 cc and 30 cc syringes
Solder Analysis Mailers	Prepaid analysis mailers	Any quantity
Solder Reclaim Buckets (lead-free)	Cooperation w/ metallic resources	3 gallon green buckets and instructions
Solder Reclaim Buckets (tin-lead)	Cooperation w/ metallic resources	3 gallon black buckets and instructions

Please visit www.indium.com for the latest products, news, and information for printed circuit board assembly and the other markets we serve. 

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