

APPLICATION NOTE

Flux and Solder Compatibility

Base Metal	Recommended Flux		Recommended Solder Alloy/Indalloy® No.	Incompatible Solder Alloys
	Liquid	Tacky		
Gold (over 0.5µm thick) *(See note 1)	5RMA-RC 1095-NF	TACFlux® 012 (In alloys) TACFlux® 007 (High-Pb & AuSn) TACFlux® 025-NP (Water-Soluble)	In/Pb alloys #2 (80In/15Pb/5Ag) #4 (100In) #182 (80Au/20Sn) High-Pb alloys (Pb/In, Pb/In/Ag)	Sn, Sn/Pb, In/Sn, Sn/Pb/In, Sn/Pb/Bi
ENIG	5RMA-RC (In- and Bi-containing) FP-500 or 3545 (SAC, SnPb) 1095-NF or FP-300	TACFlux® 020B-RC (SnPb & SAC) TACFlux® 012 (In alloys) TACFlux® 007 (High-Pb & AuSn) TACFlux® 571HF (BiSn alloys) TACFlux® 025-NP (Water-Soluble)	#106 (63Sn/37Pb) Sn62 (62Sn/36Pb/2Ag) SAC alloys #121 (96.5Sn/3.5Ag) In alloys #182 (80Au/20Sn) High-Pb alloys Sn/Bi alloys	Compatible with most solder alloys
Silver *(See note 2)	5RMA-RC (In- and Bi-containing) FP-500 or 3545 (SAC, SnPb) 1095-NF or FP-300	TACFlux® 020B-RC (SnPb & SAC) TACFlux® 007 (High-Pb & AuSn) TACFlux® 025-NP (Water-Soluble)	#104 (62Sn/36Pb/2Ag) SAC alloys #121 (96.5Sn/3.5Ag) High-Pb alloys	Compatible with most solder alloys
Palladium and Platinum	5RMA-RC (In- and Bi-containing) FP-500 or 3545 (SAC, SnPb) 1095-NF or FP-300		Compatible with most solder alloys	Compatible with most solder alloys
Clean Cu	5RMA-RC (Bi-containing) FP-500 or 3545 (SAC, SnPb) 1095-NF or FP-300	TACFlux® 020B-RC (SnPb & SAC) TACFlux® 571HF (BiSn alloys) TACFlux® 025-NP (Water-Soluble)	#106 (63Sn/37Pb) Sn62 (62Sn/36Pb/2Ag) SAC alloys #121 (96.5Sn/3.5Ag) Sn/Bi alloys #133 (95Sn/5Sb)	In, In/Pb, In/Sn, In/Pb/Ag *(See note 4)
HASL Finish (Sn & Sn/Pb)	5RA-RC (Bi-containing) 5RMA-RC (Bi-containing) FP-500 or 3545 (SAC, SnPb) 1095-NF or FP-300	TACFlux® 020B-RC (SnPb & SAC) TACFlux® 571HF (BiSn alloys) TACFlux® 025-NP (Water-Soluble)	#106 (63Sn/37Pb) Sn62 (62Sn/36Pb/2Ag) SAC alloys Sn/Bi alloys	In-containing solders *(See note 3)
Oxidized Cu & Cu Alloys (Brass, Bronze)	5RA-RC 1095-NF Flux #6		#106 (63Sn/37Pb) Sn62 (62Sn/36Pb/2Ag) SAC alloys	In-containing solders *(See note 4)
Nickel (Ni) and Kovar	5RA-RC 1095-NF Flux #6		#106 (63Sn/37Pb) Sn62 (62Sn/36Pb/2Ag) In/Pb alloys SAC alloys	Compatible with most solder alloys
Aluminum	Flux #6		#201 (91Sn/9Zn) #176 (95Zn/5Al) #121 (96.5Sn/3.5Ag)	Sn/Pb due to poor corrosion resistance
Stainless Steel	42-SS, Flux #2, Flux #6, *(See note 5)		#121 (96.5Sn/3.5Ag) #1E (52In/48Sn) #182 (80Au/20Sn) #106 (63Sn/37Pb) Sn62 (62Sn/36Pb/2Ag) SAC alloys	Avoid Pb and Cd for food applications
Steel	Flux #1		#106 (63Sn/37Pb) Sn62 (62Sn/36Pb/2Ag) SAC alloys	Compatible with most solder alloys

See reverse side for notes.

From One Engineer To Another®



Form No. 97751 R7

APPLICATION NOTE

Flux and Solder Compatibility

Notes

Note 1: In/Pb alloys have a wide temperature range from 175–313°C (Indalloy®7, 10, 11, 150, 204, 205, and 206). For specific melting temperatures, refer to the Solder Alloy Guide at www.indium.com

Note 2: When soldering to silver (Ag), it is recommended that the solder also contain some Ag, such as Indalloy®121 (96.5Sn/3.5Ag), 62Sn/36Pb/2Ag, or Indalloy®151 (92.5Pb/5Sn/2.5Ag)

Note 3: Avoid solders that contain indium (In) when soldering to Sn or Sn/Pb. It is possible for localized pockets of the In/Sn eutectic to form, which melts at 118°C.

Note 4: Avoid solders that contain In when soldering to Cu. In and Cu diffuse into one another and form a brittle inter-metallic.

Note 5: Use 42-SS or Liquid Flux #2 for applications which do not require prolonged heating, and Liquid Flux #6 for applications which do require prolonged heating to reflow the solder.

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. All Indium Corporation's products and solutions are designed to be commercially available unless specifically stated otherwise.

*All of Indium Corporation's solder paste and preform manufacturing facilities are IATF 16949:2016 certified.
Indium Corporation is an ISO 9001:2015 registered company.*

Contact our engineers: 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



©2024 Indium Corporation