

# Flux and Solder Compatibility

APPLICATION NOTE

Base Metal	Recommended Flux		Recommended Solder Alloy / Indalloy #	Incompatible Solder Alloys
	Liquid	Tacky		
Gold (over .5µm thick) *(See Note 1)	R or RMA	TACFlux012 (In alloys) TACFlux007 (high-Pb & Au/Sn)	#4 (100In) #2 (80In/15Pb/5Ag) In/Pb alloys *(See Note 5) #182 (80Au/20Sn) High-Pb alloys	Sn, Sn/Pb, In/Sn Sn/Pb/In, Sn/Pb/Bi
ENIG	R or RMA	TACFlux 020B (Sn/Pb and SAC) TACFlux 012 (In alloys) TACFlux 007 (high-Pb & Au/Sn) TACFlux 055 (Sn/Bi alloys)	#106 (63Sn/37Pb) #104 (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)	R or RMA	TACFlux 020B (Sn/Pb and SAC) TACFlux 007 (high-Pb)	#104 (62Sn/36Pb/2Ag) #121 (96.5Sn/3.5Ag) SAC alloys High-Pb alloys	Compatible with most solder alloys
Palladium (Pd) Platinum (Pt)	R or RMA		Compatible with most solder alloys	Compatible with most solder alloys
Clean Cu	R or RMA	TACFlux 020B (Sn/Pb & SAC) TACFlux 055 (Sn/Bi alloys)	#106 (63Sn 37Pb) #104 (62Sn 36Pb 2Ag) SAC Alloys #121 (96.5Sn 3.5Ag) #133 (95Sn 5Sb) Sn/Bi Alloys	In, In/Pb, In/Sn In/Pb/Ag *(See Note 4)
HASL Finish (Sn & Sn/Pb)	RA or RMA	TACFlux 020B (Sn/Pb) TACFlux 055 (Sn/Bi alloys)	#106 (63Sn 37Pb) #104 (62Sn 36Pb 2Ag) SAC Alloys Sn/Bi Alloys	In-containing solders *(See Note 3)
Oxidized Cu & Cu Alloys (Brass, Bronze)	Flux #40A or an RA Flux		#106 (63Sn/37Pb) #104 (62Sn/36Pb/2Ag) SAC alloys	In-containing solders *(See Note 4)
Nickel (Ni) & Kovar	Flux #40A or an RA Flux		#106 (63Sn/37Pb) #104 (62Sn/36Pb/2Ag) In/Pb alloys *(See note 5) SAC alloys	Compatible with most solder alloys
Aluminum (Al)	Flux #3		#201 (91Sn/9Zn) #176 (95Zn/5Al)	Sn/Pb due to poor corrosion resistance
Stainless Steel	Flux #2 or #3 *(See note 6)		#1E (52In/48Sn) #106 (63Sn/37Pb) #104 (62Sn/36Pb/2Ag) #121 (96.5Sn/3.5Ag) SAC alloys	Avoid Pb and Cd for food applications
Steel	Flux #1		#106 (63Sn/37Pb) #104 (62Sn/36Pb/2Ag) SAC alloys	Compatible with most solder alloys

See reverse for notes.

OVER →  
Form No. 97751 R5

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## Notes

Note 1: Indium-containing solder is good for operational temperatures less than 125°C. For applications above 125°C, choose Indalloy #182 (80Au/20Sn).

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 intermetallic.

Note 5: In/Pb alloys have a wide temperature range from 175°C to 313°C (Indalloy #7, #10, #11, #150, #204, #205, and #206). For specific melting temperatures, refer to the Table of Specialty Alloys & Solders at [www.indium.com](http://www.indium.com).

Note 6: Use Liquid Flux #2 for applications which do not require prolonged heating, and Liquid Flux #3 for applications which do require prolonged heating to reflow the solder.

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