HARRIS BRAZING & SOLDER SELECTION CHART

HARRIS
A LINCOLN ELECTRIC COMPANY

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METALS TO BE JOINED	FILLER METALS: SOLDERS	FILLER METALS: BRAZING ALLOYS	MELTING RANGE: SOLIDUS °F / °C	MELTING RANGE: LIQUIDUS °F / °C	FLUIDITY RATING*	FLUXES	TORCHES & FLAMES**
Copper or Brass To Copper or Brass	Stay-Brite®		430 / 221	430 / 221	10	Stay-Clean® Soldering Fluxes, Liquid or Paste Bridgit® Paste Flux	Harris® Inferno® Air-Fuel Equipment
	Stay-Brite® 8		430 / 221	535 / 279	8		
	Bridgit®		460 / 238	630 / 332	6		
	Sterling®		419 / 215	660 / 348	6		
	Premium Silver		440 / 227	640 / 338	6		
		Blockade®	1178 / 637	1247 / 674	7	No flux required for copper-to-copper joints with the phosphorus-bearing filler metals For brass and other alloys of copper, use Stay-Silv® White Brazing Flux	Harris® Inferno® Air-Fuel Equipment or Harris® Oxy-Acetylene Equipment (Neutral Flame)
		Harris 0	1310 / 710	1475 / 802	5		
		Stay-Silv® 5	1190 / 643	1500 / 816	3		
		Dynaflow®	1190 / 643	1465 / 796	3		
		Stay-Silv® 6	1190 / 643	1425 / 774	5		
		Stay-Silv® 15	1190 / 643	1480 / 804	3		
Copper or Brass To Steel or Stainless	Stay-Brite®		430 / 221	430 / 221	10	Stay-Clean® Liquid Soldering Flux	Harris® Inferno® Air-Fuel Equipment
	Stay-Brite® 8		430 / 221	535 / 279	8		
		Safety-Silv® 56	1145 / 618	1205 / 652	8	Stay-Silv® White Brazing Flux Stay-Silv® Black Flux for Stainless	Harris® Inferno® Air-Fuel Equipment or Harris® Oxy-Acetylene Equipment (Slightly Reducing Flame)
		Safety-Silv® 38T	1220 / 660	1325 / 718	7		
		Safety-Silv® 45	1225 / 663	1370 / 743	6.5		
		Safety-Silv® 45T	1195 / 646	1265 / 685	7		
Steel or Stainless To Steel or Stainless	Stay-Brite®		430 / 221	430 / 221	10	Stay-Clean® Liquid Soldering Flux	Harris® Inferno® Air-Fuel Equipment
	Stay-Brite® 8		430 / 221	535 / 279	8		
		Safety-Silv® 56	1145 / 618	1205 / 652	8	Stay-Silv® White Brazing Flux Stay-Silv® Black Flux for Stainless	Harris® Inferno® Air-Fuel Equipment or Harris® Oxy-Acetylene Equipment (Slightly Reducing Flame)
		Safety-Silv® 38T	1220 / 660	1325 / 718	7		
		Safety-Silv® 40Ni2	1220 / 660	1435 / 779	4.5		
		Safety-Silv® 45	1225 / 663	1370 / 743	6.5		
		Safety-Silv® 45T	1195 / 646	1265 / 685	7		
		Safety-Silv® 50N	1220 / 660	1305 / 707	7		
Steel or Stainless To Carbides	NOT RECOMMENDED	———	———	———	———	———	———
		Safety-Silv® 40Ni2	1220 / 660	1435 / 779	4.5	Stay-Silv® Black Brazing Flux	Harris® Oxy-Acetylene Equipment (Reducing Flame)
		Safety-Silv® 50N	1220 / 660	1305 / 707	7		
Aluminum To Aluminum (1) Aluminum To Copper Or Brass (2)* Aluminum To Steel Or Stainless (2)* * Aluminum to dissimilar metal joints may be subject to galvanic corrosion.	Alsolder® 500		391 / 199	482 / 250	NOT RATED	Stay-Clean® Aluminum Soldering Flux Alcor® & Aluxcor® 78/22 is Flux Cored Flux is Contained Inside the Wire	Harris® Inferno® Air-Fuel Equipment
	Aluxcor® 78/22		800 / 427	900 / 482	7		
	Alcor®		———	824 / 440	NOT RATED		
		Aluxcor® 78/22	800 / 427	900 / 482	7	Aluxcor® 78/22 & Aluxcor® 4047 - Flux Cored Rod. No Additional Flux Required	Harris® Inferno® Air-Fuel Equipment or Harris® Oxy-Acetylene Equipment (Reducing Flame)
		Aluxcor® 4047	1070 / 577	1080 / 582	9		

* The higher the fluidity rating, the faster the alloy flows within the melting range.
** For best results and strong leak proof bonds, filler metals should be applied to the joint area only after the parts are heated to the proper brazing or soldering temperature. Oxy-Acetylene torches may be substituted for air-fuel but may require care to prevent overheating of the base metal/flux with the higher temperature flame.
†Aluminum dissimilar metal joints may be subject to galvanic corrosion.

(1) Can be directly brazed or soldered.
(2) Solder direct with Alsolder® 500 , or coat steel or copper side with aluminum and solder with Alcor® or Braze with Albraze® 1070.
(3) Alcor® is suited only for Aluminum to Aluminum.
(4) 40Ni2 or 50N is recommended for connections with Stainless Steel.

Safety Information: WARNING: PROTECT yourself and others. Read and understand this information. FUMES AND GASES can be hazardous to your health. HEAT RAYS (INFRARED RADIATION) from flame or hot metal can injure eyes. Before use, read and understand the manufacturer's instructions, Safety Data Sheet (SDS) and your employer's safety practices. Keep your head out of fumes. Use enough ventilation, exhaust at the flame, or both, to keep fumes and gases from your breathing zone and the general area. Wear correct eye, ear and body protection. See American National Standard Z49.1, Safety in Welding, Cutting, and Allied Processes, published by the American Welding Society, 8669 NW 36th Street #130, Miami, Florida 33116; OSHA Safety Standards, available from the U.S. Government Office, Washington, DC 20402. STATEMENT OF LIABILITY - DISCLAIMER Any suggestion of product applications or results is given without representation or warranty, either expressed or implied. Without exception or limitation, there are no warranties of merchantability or of fitness for particular purpose or application. The user must fully evaluate every process and application in all aspects, including suitability, compliance with applicable law and non-infringement of the rights of others. The Harris Products Group and it's affiliates shall have no liability in respect thereof.

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