

HARRIS PRODUCTS GROUP

Brazing Alloys



Stay-Silv Brazing Alloys

Stay-Silv® Brazing Alloys

Phos/copper and silver/phos/copper alloys are used to braze copper to copper and copper to brass. The phosphorus content in these alloys makes them self-fluxing on copper. When brazing brass or copper to brass, use Stay-Silv white brazing flux. These alloys are not recommended for brazing steel or other ferrous metals.

Harris O: Low-cost alloy for many copper-to-copper applications where good fit-up can be maintained and brazing temperature is not critical.

Stay-Silv 5 and Stay-Silv 6: Medium-range alloys; Stay-Silv 5 is useful primarily where fit-up cannot be tightly controlled. Stay-Silv 6 is slightly more fluid and can be used where closer tolerances are available. Both alloys are somewhat more ductile than Harris O.

Dynaflow: Premium, medium-range silver alloy, formulated to even tighter specifications than the Stay-Silv alloys to mirror the performance characteristics of the 15% silver brazing filler metals. Excellent for brazing both tight and poorly-fitted connections, Dynaflow's proven reliability and acceptance by field service engineers has made it the leading choice of brazing operators.

Stay-Silv 15: For many years, the industry standard for air conditioning/refrigeration applications. Still widely used but now often replaced by Dynaflow in many AC/R applications.

Mfg Part No	Description	Chemical Composition	Specifications	Solidus (F)	Liquidus (F)	Typical Application
0620F1	Harris O, 0.050 x 1/8 x 28 Stick Tube	92.9% Cu, 7.1% P	AWS A5.8, BCuP-2	1310	1475	Requires medium fit up
2620F1	Stay-Silv 2, 0.050 x 1/8 x 28 Stick Tube	2% Ag, 91% Cu, 7% P	AWS A5.8, BCuP-6	1190	1450	Broader melting range than O
5620F1	Stay-Silv 5, 0.050 x 1/8 x 28 Stick Tube	5% Ag, 89% Cu, 6% P	AWS A5.8, BCuP-3	1190	1500	Used to bridge gaps where close fit-up can't be maintained
6620F1	Stay-Silv 6, 0.050 x 1/8 x 28 Stick Tube	6% Ag, 87.5% Cu, 6.5% P		1190	1455	Used to bridge pags where more ductile filler metal is required
15620F1	Stay-Silv 15, 0.050 x 1/8 x 28 Stick Tube	15% Ag, 80% Cu, 5% P	AWS A5.8, BCuP-5, QQ-B-654A	1190	1480	Good ductility
D620F1	Dynaflow, 0.050 x 1/8 x 28 Stick Tube	6% Ag, 87.9% Cu, 6.1% P		1190	1465	Premium alloy, excellent strength and ductility

HARRIS PRODUCTS GROUP

Safety-Silv Brazing Alloys

Stay-Silv® Brazing Alloys



Harris manufactures their complete line of cadmium-free, high silver brazing alloys with the same attention to quality found in their phos/copper products. Only the purest base metals are used, and precision production procedures ensure consistency in product quality and performance.

SAFETY-SILV® 56 - This high silver (56%) content alloy makes first quality brazes. It is free-flowing with unequalled capillary attraction and deep penetration. Ductility is high, corrosion resistance suitable for all but strong chemical applications. Offers highest elongation of silver brazing alloys. Suitable for use in the food processing industry. The silver color is an excellent match for stainless steel and silverware applications.

SAFETY-SILV® 45 - Excellent general purpose non-toxic brazing alloy. Often specified in governmental use. Good ductility and capillary flow. Color is silver to light yellow as in polished brass.

Mfg Part No	Description	Chemical Composition	Specifications	Solidus (F)	Liquidus (F)	Typical Application
4531	Safety-Silv 45 1/16 x 1	45% Ag, 30% Cu, 25% Zn	AWS A5.8, BA9-5	1225	1370	General purpose filler for steel and copper alloys. Melting range useful for wide clearances.
4533	Safety-Silv 45 1/16 x 3	45% Ag, 30% Cu, 25% Zn	AWS A5.8, BA9-5	1225	1370	General purpose filler for steel and copper alloys. Melting range useful for wide clearances.
4535	Safety-Silv 45 1/16 x 5	45% Ag, 30% Cu, 25% Zn	AWS A5.8, BA9-5	1225	1370	General purpose filler for steel and copper alloys. Melting range useful for wide clearances.
45K	Safety-Silv 45 Kit	45% Ag, 30% Cu, 25% Zn	AWS A5.8, BA9-5	1225	1370	General purpose filler for steel and copper alloys. Melting range useful for wide clearances.
45F3184	Safety-Silv 45 Flux Coated 1/16 x 18 x 4 oz tube	45% Ag, 30% Cu, 25% Zn	AWS A5.8, BA9-5	1225	1370	General purpose filler for steel and copper alloys. Melting range useful for wide clearances.
45F318M	Safety-Silv 45 Flux Coated Minnipak	45% Ag, 30% Cu, 25% Zn	AWS A5.8, BA9-5	1225	1370	General purpose filler for steel and copper alloys. Melting range useful for wide clearances.
5631	Safety-Silv 56 1/16 x 1	56% Ag, 22% Cu, 17% Zn, 5% Sn	AWS A5.8, BA9-7, NSF 51	1145	1205	For ferrous and nonferrous alloys. Often used to braze stainless steel for food service.
5633	Safety-Silv 56 1/16 x 3	56% Ag, 22% Cu, 17% Zn, 5% Sn	AWS A5.8, BA9-7, NSF 51	1145	1205	For ferrous and nonferrous alloys. Often used to braze stainless steel for food service.
5635	Safety-Silv 56 1/16 x 5	56% Ag, 22% Cu, 17% Zn, 5% Sn	AWS A5.8, BA9-7, NSF 51	1145	1205	For ferrous and nonferrous alloys. Often used to braze stainless steel for food service.
56K	Safety-Silv 56 Kit	56% Ag, 22% Cu, 17% Zn, 5% Sn	AWS A5.8, BA9-7, NSF 51	1145	1205	For ferrous and nonferrous alloys. Often used to braze stainless steel for food service.
56F3184	Safety-Silv 56 Flux Coated 1/16 x 18 x 4 oz tube	56% Ag, 22% Cu, 17% Zn, 5% Sn	AWS A5.8, BA9-7, NSF 51	1145	1205	For ferrous and nonferrous alloys. Often used to braze stainless steel for food service.
56F5184	Safety-Silv 56 Flux Coated 3/32 x 18 x 4 oz tube	56% Ag, 22% Cu, 17% Zn, 5% Sn	AWS A5.8, BA9-7, NSF 51	1145	1205	For ferrous and nonferrous alloys. Often used to braze stainless steel for food service.

Albany, NY	518-489-0010	Rochester, NY	585-482-3876	Allentown, PA	610-437-9818	Scranton, PA	570-346-1565
Binghamton, NY	607-724-2451	Syracuse, NY	315-475-3131	Altoona, PA	814-941-7617	Stroudsburg, PA	570-424-5724
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Middletown, NY	845-733-5666			Harrisburg, PA	717-558-0828	Williamsport, PA	570-323-4606

Brazing Alloys



Blockade Brazing Alloys

Blockade® Brazing Alloys

Silicon brazing alloys offer significant advantages over phos/copper and silver/phos/copper (BCuP) brazing alloys and present important differences in the brazing of copper and its alloys. The addition of silicon effects such noticeable changes as:

- Outstanding ability to form a large shoulder, or cap, at the braze connection
- Distinct, favorable color changes in the finished braze alloy
- Improved ductility over non-silver-bearing BCuP-2 braze alloys
- Easily brazes brass and brass alloys without the addition of silver
- Significantly reduces brazing temperatures compared to BCuP braze alloys
- The addition of silver further enhances the favorable color change

Mfg Part No	Description	Chemical Composition	Specifications	Solidus (F)	Liquidus (F)	Typical Application
BK220R1	Blockade Bare Rod, 2 mm x 20 stk tube	86.9 % Cu, 6.5% Sn, 6.5% P, 0.1% Si	AWS A5.8, BCuP-9	1187	1297	For copper or brass. Reduced brazing temperature, visible braze allows easy joint inspection. Excelent for HVAC applications.
BKFC2500R1	Blockade Flux-Coated Rod, 2 mm x 20 stk tube	86.9 % Cu, 6.5% Sn, 6.5% P, 0.1% Si	AWS A5.8, BCuP-9	1187	1297	For copper or brass. Reduced brazing temperature, visible braze allows easy joint inspection. Excelent for HVAC applications.

Solders



Stay-Brite Silver Solders



Stay-Brite® Silver Solders

Stay-Brite® and Stay-Brite® 8 silver bearing solders are often used instead of brazing alloys throughout the refrigeration/air conditioning industry. Both Stay-Brite and Stay-Brite 8 produce a component with greater overall strength than a brazed component whose base metals are weakened by annealment from high brazing heat.

Stay-Brite solders bond with most all of the ferrous and nonferrous alloys. Joints soldered with Stay-Brite solders exhibit considerably higher-than-necessary elongation for sound, dissimilar metal joints and vibration applications. Stay-Brite 8 is especially effective in filling loosely-fitted couplings

Mfg Part No	Description	Chemical Composition	Specifications	Solidus (F)	Liquidus (F)	Typical Application
SB61	Stay-Brite 1/8 x 1# Spool	4% Ag, 96% Sn	ASTM B32 Sn 96, NSF 51, J-STD-006, Sn96Ag04A	430	430	Use for all metals with the exception of aluminum. Low temperature solder used in HAVAC joints.
SB31	Stay-Brite 1/16 x 1# Spool	4% Ag, 96% Sn	ASTM B32 Sn 96, NSF 51, J-STD-006, Sn96Ag04A	430	430	Use for all metals with the exception of aluminum. Low temperature solder used in HAVAC joints.
SBSK	Stay-Brite Kit with Flux	4% Ag, 96% Sn	ASTM B32 Sn 96, NSF 51, J-STD-006, Sn96Ag04A	430	430	Use for all metals with the exception of aluminum. Low temperature solder used in HAVAC joints.
SB861	Stay-Brite #8, 1/8 x 1# Spool	6% Ag, 94% Sn	NSF 51	430	535	Similar to Stay-Brite with a plastic range that is useful in bridging wider gaps.
SB831	Stay-Brite #8, 1/16 x 1# Spool	6% Ag, 94% Sn	NSF 51	430	535	Similar to Stay-Brite with a plastic range that is useful in bridging wider gaps.

Aluminum Alloys



Aluminum Alloys

Alsolder 500 forms excellent corrosion-resistant joints on the tough-to-solder aluminum alloys. Joins all solderable aluminum alloys to each other and to dissimilar metals, both ferrous and non-ferrous. Also beneficial as a high-temperature solder on most other metals.

Al-braze is a superior brazing alloy for the joining of aluminum to aluminum. Not recommended for brazing aluminum directly to non-aluminum alloys, as the joint may be brittle. Al-Braze is free flowing with unequaled capillary attraction, ductility and penetration. Excellent corrosion resistance.

ALCoR aluminum alloy with non-corrosive flux inside the wire; no external flux required. Very good fluidity with good capillary attraction. Post-braze cleaning unnecessary. Better than tin-zinc and aluminum silicon alloys for aluminum coil repair

Mfg Part No	Description	Chemical Composition	Specifications	Solidus (F)	Liquidus (F)	Typical Application
AL200RC	ALCoR, Flux-Cored Aluminum Alloy	Zn, Al		824	824	A new approach to joining aluminum. A low temperature, free flowing, flux-cored solder for aluminum joining or repair.
500K	Alsolder 500, Aluminum solder Kit	15% An, 85% Sn		391	482	Forms excellent corrosion-resistant joints on the tough-to-solder aluminum alloys. Useful for copper to aluminum connections.
1070K	Al-Braze 1070, Aluminum Brazing Kit	88% Al, 12% Si	QQB-655 BAI S14, AWS A5.8 BAIS14	1070	1080	Superior brazing alloy for joining aluminum to aluminum. Excellent capillary attraction.

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Fluxes



Harris offers a broad range of quality fluxes for many applications including brazing or welding aluminum, nickel-silver, bronze, zinc die cast, soft solders, cast iron, magnesium, stainless steel, and low fuming bronze and other copper-base alloys



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Stay-Clean Soldering Flux (Liquid)

Stay-Clean® Soldering Flux (Liquid)

For virtually all metals other than aluminum, magnesium or titanium. Use with Stay-Brite solders or practically any other solder with a liquidus below 700° F. Not recommended for electrical or electronic applications. Meets Commercial Spec. A-A-51145C, Form B

Mfg Part No	Description	Size
SCLF4	Stay-Clean Liquid Flux	4 oz
SCLF16	Stay-Clean Liquid Flux	16 oz
SCLF32	Stay-Clean Liquid Flux	32 oz
SCLF1G	Stay-Clean Liquid Flux	1 gallon

Stay-Clean Soldering Flux (Paste)

Stay-Clean® Soldering Flux (Paste)

Excellent flux for joining copper to copper and copper to brass. Not recommended for electrical or electronic applications. Effective to 700° F. Meets Commercial Spec. AA- 51145C, Form A

Mfg Part No	Description	Size
SCPF4	Stay-Clean Paste Flux	4 oz
SCPF1	Stay-Clean Paste Flux	1 lb

Stay-Clean Aluminum Flux

Stay-Clean® Aluminum Flux

Use with Stay-Brite solders or Alsolder 500 to join aluminum to aluminum and most other metals. Effective to 500° F

Mfg Part No	Description	Size
SCAF4	Stay-Clean Aluminum Flux	4 oz

Stay-Silv Brazing Flux (White)

Stay-Silv® Brazing Flux (white)

For use with silver brazing alloys on all metals other than aluminum, magnesium or titanium. Effective to 1600°F. Meets Fed Spec. OF499, Type B; AWS FB3A, AMS 3410.

Mfg Part No	Description	Size
SSWF1/4	Stay-Silv Brazing Flux	1/4 lb
SSWF1/2	Stay-Silv Brazing Flux	1/2 lb
SSWF7	Stay-Silv Brazing Flux	6.5 oz
SSWF1	Stay-Silv Brazing Flux	1 lb

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