Soldering & Brazing Fluxes

Alloy	Silver %	Copper %	Zinc %	Nickel %	Tin %	Melting Range °F/°C		Specifications	
						Solidus	Liquidus	AWS A5.8	FED QQB650C
Safety-Silv® 30	30	38	32			1250 / 677	1410 / 766	BAg-20	BAg-20
Safety-Silv® 35	35	32	33			1250 / 677	1350 / 732	BAg-35	
Safety-Silv® 45	45	30	25			1225 / 663	1370 / 743	BAg-5	BAg-5
Safety-Silv® 45T	45	27	25		3	1195 / 646	1265 / 685	BAg-36	
Safety-Silv® 50	50	34	16			1270 / 688	1425 / 774	BAg-6	
Safety-Silv® 50N	50	20	28	2		1220 / 660	1305 / 707	BAg-24	
Safety-Silv® 56	56	22	17		5	1145 / 618	1205 / 652	BAg-7	BAg-7

Safety-Silv® 30

A moderate temperature filler metal with flow characteristics useful for wider gaps.

Safety-Silv® 35

A good selection for replacing the cadmium alloys. Safety Silv® 35 joints are strong, ductile and the brazing temperature is only slightly higher than cadmium-bearing 30% and 35% silver alloys.

Safety-Silv® 45

Excellent general-purpose brazing alloy. Often specified in government use. Good ductility and capillary flow. Color is silver to light yellow.

Safety-Silv® 50

Useful in brazing electrical connections and as a cadmium-free replacement for 50% silver alloys. It has a wide melting range suitable for bridging gaps where poor fit-ups are encountered.

Safety-Silv® 50N

This 50% silver alloy is a good replacement for the 3% nickel, cadmium alloy (AWS BAg3). It is especially helpful where low brazing temperature must be maintained. It can be used to braze tungsten carbide, stainless steel, as well as other steel, copper, and nickel alloys.

Safety-Silv® 56

High silver content alloy; makes premium-quality brazes. Free-flowing with unsurpassed capillary attraction and deep penetration. Ductility is high, and corrosion-resistance is suitable for all but strong chemical applications. Offers highest elongation of silver brazing alloys. Suitable for use in the food-processing industry. Silver color is excellent match for stainless steel and silverware applications. NSF Certified to NSF C2.

Alloy	Part No.	Mfg. No.	Packaging (Troy oz.)
Safety-Silv® 30	30350	30350	1/16 x 50
Safety-Silv® 35	74310	3531	1/16 x 1
	3533	3533	1/16 x 5
	74315	3535	1/16 x 5
	74317	35350	1/16 x 50
Safety-Silv® 45	76310	4531	1/16 x 1
	76313	4533	1/16 x 3
	76315	4535	1/16 x 5
	76316	45325	1/16 x 25
	76317	45350	1/16 x 50
	76217	45550	3/32 x 50
Safety-Silv® 50	70310	5031	1/16 x 1
	70315	5035	1/16 x 5
Safety-Silv® 50N	80310	50N31	1/16 x 1
	80315	50N35	1/16 x 5
	80317	50N350	1/16 x 50
Safety-Silv® 56	75310	5631	1/16 x 1
	75313	5633	1/16 x 3
	75315	5635	1/16 x 5
	56350	56350	1/16 x 50
	75217	56550	3/32 x 50

Part No.10001

Alloy	Melting Range °F/°C		Specifications / Certifications
	Solidus	Liquidus	
40/60	360 / 182	460 / 238	ASTM B32 Sn40A
50/50	360 / 182	420 / 216	ASTM B32 Sn50, J-STD 006, Sn50Pb50A
60/40	360 / 182	375 / 191	ASTM B32 Sn60
95/5	452 / 233	464 / 240	ASTM B32 Sb5, J-STD 006, Sn955b05A
Stay-Brite®	430 / 221	430 / 221	J-STD 006, Sn96Ag04A, ASTM B32, Sn96
Stay-Brite® 8	430 / 221	535 / 279	NSF certified to NSF 51
Alsolder® 500	391 / 199	482 / 250	QQ-S-571E, class Sn96
Bridgit®	460 / 238	630 / 332	ASTM B32, HB; NSF certified to ANSI / NSF 61
Al-Braze® 1070	1070 / 577	1080 / 582	AWS A5.8 BAL Si4

40/60, 50/50, 60/40

These tin/lead solders can be used, with some exceptions, to join copper and most copper alloys, lead, nickel alloys and steel. Tin/lead solders are not recommended for joints subject to high stress or vibration in the cooling industry due to lack of sufficient elongation properties. These solders are also available with rosin or acid core.

Note: It is illegal to use lead solders in both public and private potable water systems.

95/5

Tin/antimony solder well suited for applications where moderately elevated temperature is a factor. With higher electrical conductivity and high fluidity, 95/5 is recommended for lead free installations of small diameter, tight fitting connections. Not recommended for use on brass or HVAC connections.

Stay-Brite® and Stay-Brite® 8 (NSF)

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

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 nonferrous. Also beneficial as a high temperature solder on most other metals.

Bridgit® (NSF)

Lead-free solder widely used in plumbing applications where lead-bearing solders are prohibited. Contains nickel, making joints tremendously strong. Wide plastic range makes Bridgit® an excellent alloy for large diameter fittings and ill-fitted or non-concentric pipes. Fills gaps and caps off easily and effectively.

Al-Braze® 1070

Superior brazing alloy for joining 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 excellent capillary attraction, ductility and penetration. Corrosion resistant.

Solder	Part No.	Mfg. No.	Description	Diameter	Spool
40/60	10035	406061	Solid wire	1/8	1 lb.
	12016	406065	Solid wire	1/8	5 lbs.
	10037	40A61	Acid core	1/8	1 lb.
	12100	40A65	Acid core	1/8	5 lbs.
	12237	40R61	Rosin core	1/8	1 lb.
	12202	40R51	Rosin core	3/32	1 lb.
50/50	12006	505031	Solid wire	1/16	1 lb.
	10028	505061	Solid wire	1/8	1 lb.
	12001	505065	Solid wire	1/8	5 lbs.
	10051	50501B	50/50 SWS tinker	N/A	Bar
	10038	50A61	Acid core	1/8	1 lb.
	12107	50A65	Acid core	1/8	5 lbs.
	12213	50R31	Rosin core	1/16	1 lb.
	12238	50R61	Rosin core	1/8	1 lb.
60/40	12023	604031	Solid wire	1/16	1 lb.
	10036	604061	Solid wire	1/8	1 lb.
	10039	60A61	Acid core	1/8	1 lb.
	12221	60R31	Rosin core	1/16	1 lb.
	12239	60R61	Rosin core	1/8	1 lb.
	12218	60R51	Rosin core	3/32	1 lb.
95/5	12013	95531	Solid wire	1/16	1 lb.
	10030	95561	Solid wire	1/8	1 lb.
	95565	95565	Solid wire	1/8	5 lbs.
	12011	95551	Solid wire	3/32	1 lb.
Stay-Brite®	10001	SB61	Stay-Brite®	1/8	1 lb.
	10004	SB31	Stay-Brite®	1/16	1 lb.
	10009	SB861	Stay-Brite® 8	1/8	1 lb.
	10010	SB831	Stay-Brite® 8	1/16	1 lb.
	11000	SBSK	Stay-Brite®	3/64	KIT
Al-Braze®	10022	500K	Aluminum brazing	3/64	KIT
	10023	1070K	Aluminum brazing	1/16	KIT
Alsolder®	10024	50061	Alsolder® 500	1/8	1 lb.
Bridgit®	16000	BRGT61	Stay-Safe Bridgit®	1/8	1 lb.

(NSF) = National Sanitation Federation

Phosphorus / Copper Brazing Alloys

These brazing filler metals are primarily 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.

Alloy	Silver %	Phos %	Melting Range °F/°C		Fluidity Rating*	Specifications			Recommended Joint Clearance
			Solidus	Liquidus		AWS A5.8	FED QQB650C	DIN	
Harris 0	0	7.1	1310 / 710	1475 / 802	5	BCuP-2	BCuP-2	L-CuP7	.002 / .007"
Blockade™	0	4.0 - 8.0	1178 / 637	1247 / 674	9	BCuP-9	BCuP-9		.003 / .006"
Stay-Silv® 2	2	7.0	1190 / 643	1450 / 788	4	BCuP-6			.002 / .005"
Stay-Silv® 5	5	6.0	1190 / 643	1500 / 816	3	BCuP-3	BCuP-3		.002 / .006"
Stay-Silv® 6	6	6.5	1190 / 643	1425 / 774	5				.002 / .005"
Dynaflow®	6	6.1	1190 / 643	1465 / 796	3				.002 / .006"
Stay-Silv® 15	15	5.0	1190 / 643	1480 / 804	3	BCuP-5	BCuP-5		.002 / .006"

*The higher the fluidity rating, the faster the alloy flows within the melting range.

Harris 0

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

Blockade™

Phosphorus/copper brazing alloy available with silicon. Faster brazing—228˚F lower than phos/copper 0. Highly visible fillet which provides instant, visual confirmation of a leak-free seal. Improved ductility over BCuP-2 (phos/copper 0) brazing alloys. Flux-coated—can join copper to brass and brass to brass in one easy step.

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 0.

Stay-Silv® 15

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

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.

Alloy	Part No.	Mfg. No.	Silver	Package
Harris 0	20235	0620R1	0%	Round 1/8 - 14 stick tube
	21035	0620F1	0%	.050 x 1/8 - 28 stick tube
	22235	0520R1	0%	Round 3/32 - 24 stick tube
	23235	0320R1	0%	Round 1/16 - 51 stick tube
Blockade™	BK220R1			2 mm 20 stick tube
	BKFC2500R1			2 mm 20 stick tube (flux coated)
Stay-Silv®	40235	5620R1	5%	Round 1/8 - 14 stick tube
	41035	5620F1	5%	.050 x 1/8 - 28 stick tube
	51035	6620F1	6%	.050 x 1/8 - 28 stick tube
	60135	15620S1	15%	Square 1/8 - 11 stick tube
	60235	15620R1	15%	Round 1/8 - 14 stick tube
	61035	15620F1	15%	.050 x 1/8 - 28 stick tube
	61038	15620F	15%	.050 x 1/8 - bulk 25lb pkg.
	62135	15520S1	15%	Square 3/32 - 20 stick tube
Dynaflow®	66000	0620F1	6%	.050 x 1/8 - 28 stick tube

Stay-Clean®

Paste Soldering Flux: Excellent flux for joining copper to copper and copper to brass. Not recommended for electrical or electronic applications.
• Meets Commercial Spec. A-A-51145C, Form A

Liquid Soldering Flux: Liquid soldering flux for almost all metals other than aluminum, magnesium or titanium. Use with Stay-Brite® solders or practically any other solder with a liquidus temperature below 700°F. Not recommended for electrical or electronic applications.
• Meets Commercial Spec. A-A-51145C, Form B

Aluminum Flux: Use with Stay-Brite® solders or Alsolder® 500 to join aluminum to aluminum and to most other metals, including stainless.

Stay-Silv®

White Brazing Flux: For use with silver brazing alloys on all metals other than aluminum, magnesium or titanium. Effective to 1600°F.
• Meets Fed. Spec. 0-F-499, Type B; AWS A5.31, Class FB3A; AMS 3410.

Black Brazing Flux: For use with silver or other brazing alloys with liquidus temperature below 1800°F. Recommended for stainless steel, heavy parts, and whenever heating cycle is prolonged. For all metals other than aluminum, magnesium or titanium.
• Meets AWS A5.31, Class FB3C; AMS 3411; Fed. Spec. 0-F-499, Type B.

Fluxes	Part No.	Mfg. No.	Description
Stay-Clean®	40002	SCLF4	Liquid 4 oz. squeeze bottle
	40003	SCLF16	Liquid 16 oz.
	40004	SCLF32	Liquid 32 oz.
	40005	SCLF1G	Liquid 1 gal.
	40006	SCAF4	Alum Flux 4 oz. brush cap
	40027	SCPF4	Paste 4 oz. brush cap
	40028	SCLF1	Paste 1 lb. jar
Stay-Silv® White	40016	SSWF5	5 lb. jar
	40017	SSWF25	25 lb. pail
	40018	SSWF60	60 lb. pail
	40020	SSWF1/4	1/4 lb. jar
	40021	SSWF1/2	1/2 lb. jar
	40022	SSWF7	7 oz. brush cap
	40023	SSWF1	1 lb. jar
Stay-Silv® Black	40050	SSBF1/2	High Temp 1/2 lb. jar
	40051	SSBF1	High Temp 1 lb. jar
	40052	SSBF5	High Temp 5 lb. jar
	40053	SSBF30	High Temp 30 lb. pail