

Aufhauser Silver Brazing Alloys Reference Guide

		Nominal Composition										Appx. Wire Length-Inches (BcuP/lb) (Baq/to)				
AWS A5.8	Product name	Ag	Cu	Zn	Cd	P	Ni	Sn	Mn	Melt °F	Flow °F	Density	Color	0.031	0.062	0.09
Phos Copper SilverAlloys																
BCuP-2	PhosCopper 0	0	92.75			7.25				1310	1350	4.17 (.286)	Copper Yellow	4620	1150	510
BCuP-6	PhosCopper 2	2	91			7				1190	1300	4.21 (.289)	Light Copper	4570	1140	500
BCuP-3	PhosCopper 5	5	89			6				1190	1325	4.29 (.294)	Light Copper	4500	1120	490
BCuP-7	PhosCopper 5F	5	88.25			6.75				1190	1300	4.29 (.294)	Light Copper	4500	1120	490
-	PhosCopper 6D	6	87.9			6.1				1190	1465	4.29 (.294)	Light Copper	4500	1120	490
BCuP-4	PhosCopper 6F	6	86.75			7.25				1190	1275	4.29 (.294)	Light Copper	4500	1120	490
BCuP-5	PhosCopper 15	15	80			5				1190	1300	4.45 (.305)	Light Copper	4340	1080	475
-	PhosCopper 18M	18	75.75			6.25				1190	1220	4.40 (.302)	Light Yellow	4390	1100	487
Cadmium Bearing SilverAlloys																
-	SilverAlloy Cd-20	20	45	30	5					1140	1500	4.63	Light Yellow	285	70	31
BAG-27	SilverAlloy Cd-25	25	35	26.5	13.5					1125	1375	4.71	Light Yellow	280	70	30
BAG-33	SilverAlloy Cd-25L	25	30	27.5	17.5					1125	1260	4.67	Light Yellow	280	70	31
BAG-2a	SilverAlloy Cd-30	30	27	23	20					1125	1310	4.79	Light Yellow	275	65	30
BAG-2	SilverAlloy Cd-35	35	26	21	18					1125	1295	4.84	Light Yellow	270	65	30
BAG-1	SilverAlloy Cd-45	45	15	16	24					1125	1145	4.96	Light Yellow	265	65	25
BAG-1a	SilverAlloy Cd-50	50	15.5	16.5	18					1160	1175	4.98	Light Yellow	260	65	28
BAG-3	SilverAlloy Cd-50Ni3	50	15.5	15.5	16		3			1170	1270	5.02	Light Yellow	260	65	29
Cadmium Free SilverAlloys																
-	SilverAlloy A-5	5	58	37						1545	1615	4.47	Brass Yellow	295	70	32
-	SilverAlloy A-9	9	53	38						1410	1565	4.49	Brass Yellow	290	70	32
-	SilverAlloy A-20	20	45	35						1315	1500	4.58	Brass Yellow	285	70	32
-	SilverAlloy A-25	25	52.5	22.5						1250	1575	4.71	Brass Yellow	280	70	31
BAG-37	SilverAlloy A-25T	25	40	33				2		1265	1420	4.62	Light Yellow	285	70	31
BAG-20	SilverAlloy A-30	30	38	32						1250	1410	4.66	Light Yellow	280	70	31
BAG-35	SilverAlloy A-35	35	32	33						1260	1390	4.67	Light Yellow	280	70	31
BAG-34	SilverAlloy A-38T	38	32	28				2		1200	1330	4.77	Light Yellow	275	65	30
-	SilverAlloy A-40	40	36	24						1235	1415	4.79	Yellow White	275	65	30
BAG-4	SilverAlloy A-40Ni2	40	30	28			2			1220	1435	4.76	Light Yellow	275	65	30
-	SilverAlloy A-40Ni5	40	30	25			5			1220	1580	4.81	White	270	65	30
-	SilverAlloy A-40L	40	30.5	29.5						1245	1340	4.63	Yellow	285	70	31
BAG-28	SilverAlloy A-40T	40	30	28				2		1200	1310	4.76	Light Yellow	275	65	30
BAG-5	SilverAlloy A-45	45	30	25						1225	1370	4.8	Yellow White	270	65	30
BAG-36	SilverAlloy A-45T	45	27	25				3		1195	1270	4.72	Pale Yellow	275	70	31
BAG-22	SilverAlloy A-49NM	49	16	23			4.5		7.5	1260	1290	4.7	White	280	70	31
BAG-6	SilverAlloy A-50	50	34	16						1250	1425	4.92	Yellow White	265	65	29
BAG-24	SilverAlloy A-50Ni2	50	20	28			2			1220	1305	4.73	White	275	70	31
-	SilverAlloy A-50T	50	22	25				3		1190	1230	4.8	Pale Yellow	270	65	30
BAG-13	SilverAlloy A-54Ni1	54	40	5			1			1325	1575	5.07	White	260	65	29
BAG-7	SilverAlloy A-56T	56	22	17				5		1145	1205	4.96	White	265	65	29
-	SilverAlloy A-60	60	25	15						1245	1345	5.02	White	260	65	29
BAG-9	SilverAlloy A-65	65	20	15						1240	1325	5.06	White	260	65	29
BAG-10	SilverAlloy A-70	70	20	10						1275	1360	5.15	White	255	60	28
-	SilverAlloy A-75	75	22	3						1365	1450	5.24	White	250	60	28
Cd/Zn Free SilverAlloys																
-	SilverAlloy B-7T	7	85					8		1225	1805	4.8	Yellow	270	65	30
BAG-13a	SilverAlloy B-56Ni2	56	42				2			1420	1640	5.14	White	255	60	28
BAG-18	SilverAlloy B-60T	60	30					10		1115	1325	5.17	White	255	60	28
BAG-8	SilverAlloy B-72	72	28							1435	1435	5.24	White	250	60	28
-	SilverAlloy B-72Ni	71.5	28				0.5			1435	1450	5.27	White	250	60	27
-	SilverAlloy Z-75	75		25						1300	1345	5.06	White	260	65	29
BAG-23	SilverAlloy Z-85M	85							15	1760	1780	5.1	White	255	60	28
Layered SilverAlloys																
-	Layermet A-40Ni2									1220	1435					
-	Layermet A-40Ni5									1220	1580					
-	Layermet A-50Ni2									1220	1305					
-	Layermet Cd-50Ni3									1170	1270					

Aufhauser Silver Brazing Alloys Reference Guide

Product name	Description
Phos Copper SilverAlloys	
PhosCopper 0	Very fluid, fast flow and economical. Used with copper, brass, and bronze base metal with recommended joint clearance .001" to .003".
PhosCopper 2	Silver addition lowers solidus temperature, not as fluid as PhosCopper 0, gap clearance .001" to .003".
PhosCopper 5	Used when gap clearance range is .003 to .006". Ideal for larger copper pipe sizes.
PhosCopper 5F	For copper, brass or bronze. Slightly more fluid than PhosCopper 5 and PhosCopper 15. Used as preform rings for heat exchangers.
PhosCopper 6D	Developed to mimic performance of the PhosCopper 15 alloy at lower cost.
PhosCopper 6F	Reasonably fluid, similar to PhosCopper 0 in joint clearance of .001 to .003". Ideal flow as preform.
PhosCopper 15	Most versatile, easy to use. Best for unstable joint clearance (.002" to .006") and brazing temperature. High strength and ductility.
PhosCopper 18M	Automatic brazing of copper and copper products.
Cadmium Bearing SilverAlloys	
SilverAlloy Cd-20	Low silver at expense of broad melt range. Require rapid heating to prevent liquation.
SilverAlloy Cd-25	Less silver than SilverAlloy Cd-30 at the expense of increased melt temperature and range.
SilverAlloy Cd-25L	Similar to SilverAlloy Cd-25 but requires better heat control. Reduced melt range but more prone to oxidation.
SilverAlloy Cd-30	Less silver than SilverAlloy Cd-35 at the expense of increased melt temperature and range.
SilverAlloy Cd-35	Broader melt range than SilverAlloy Cd-45. Suitable for larger gap clearance and easier filleting.
SilverAlloy Cd-45	Lowest melting range in joining ferrous, non-ferrous and dissimilar metals with close joint clearance requirement.
SilverAlloy Cd-50	Similar to SilverAlloy Cd-45 properties with narrower melt range. Used on same base metals.
SilverAlloy Cd-50Ni3	Universal alloy in joining of carbide tool assemblies. Nickel addition improves corrosion resistance in marine environment and caustic media.
Cadmium Free SilverAlloys	
SilverAlloy A-5	Used for simultaneous brazing and heat-treating of steels. Improved ductility to the brass brazing alloys.
SilverAlloy A-9	Good color match to band instruments and other brass assemblies. Compatible to heat-treat cycles of carbon steel.
SilverAlloy A-20	Excellent temperature match to heat treatment of carbon steels. Good color match to yellow brass assemblies.
SilverAlloy A-25	Less silver than SilverAlloy A-30 at the expense of increased melt temperature and range. Moderate ductility.
SilverAlloy A-25T	Least silver of the Ag-Cu-Zn-Sn family. Moderate ductility limits joint design and application.
SilverAlloy A-30	Good for refrigeration assemblies where higher temperatures can be employed. Good for copper, nickel-silvers, and other non ferrous alloys.
SilverAlloy A-35	Dissimilar metals brazing in refrigeration tubing. Moderate melt temperature for ferrous and non-ferrous alloys.
SilverAlloy A-38T	Similar melt temperatures to cadmium-bearing SilverAlloy Cd-30 and SilverAlloy Cd-35. Suitable for ferrous and non-ferrous metals.
SilverAlloy A-40	For nickel, steel and copper alloys, good wide gap filling characteristics.
SilverAlloy A-40Ni2	Good corrosion properties with stainless steels. Often used in joining of tungsten carbides.
SilverAlloy A-40Ni5	Similar applications as SilverAlloy A-40Ni2 and A-50Ni2. with broader melt range for better gap filling characteristics.
SilverAlloy A-40L	Narrower melt range suitable for furnace brazing of steel, nickel, copper alloys. Good ductility.
SilverAlloy A-40T	Intermediate melt temperatures of the tin containing family. Used in joining ferrous and non ferrous.
SilverAlloy A-45	General purpose alloy for brazing of ferrous and non-ferrous metals. Excellent replacement to Cd containing alloys.
SilverAlloy A-45T	Good for dissimilar metals with moderate flow characteristics.
SilverAlloy A-49NM	Low temperature melting alloy for joining carbides and ferrous alloys.
SilverAlloy A-50	Widely used for electrical applications and in joining dissimilar metals.
SilverAlloy A-50Ni2	Used with 300 series stainless in Food, Medical and Dental fields. Good Cd free alternative for SilverAlloy Cd-50Ni3 in carbide brazing.
SilverAlloy A-50T	Similar to SilverAlloy A-56T at expense of increased melt temperature and range.
SilverAlloy A-54Ni1	Low zinc suitable for furnace brazing. Good for elevated service temperatures to 700 °F. used for carbon assemblies.
SilverAlloy A-56T	Excellent replacement to cadmium containing alloys when low melt temp. is required. Good corrosion properties. Color match to stainless.
SilverAlloy A-60	Similar to SilverAlloy A-65. Good for nickel and silver alloys.
SilverAlloy A-65	Third lowest melt alloy of the "Silversmith Alloys". Good color match to silver.
SilverAlloy A-70	Used on sterling silver, next lower melt temperature below SilverAlloy A-75 in step brazing.
SilverAlloy A-75	Used on sterling silver. Excellent color match to silver, highest melting of "Silversmith Alloys".
Cd/Zn Free SilverAlloys	
SilverAlloy B-7T	Good for vacuum and atmosphere brazing. A replacement to copper braze when lower melt temperature is required.
SilverAlloy B-56Ni2	Good for elevated application to 700 °F. Low zinc content reduces zinc deposit within furnace during brazing operation.
SilverAlloy B-60T	Excellent for furnace and vacuum brazing. Good corrosion resistance to marine environment.
SilverAlloy B-72	Good for atmosphere and vacuum furnace brazing of ferrous and non-ferrous alloys. Used in critical electronic and aerospace brazements.
SilverAlloy B-72Ni05	Similar to SilverAlloy B-72 Cd Free with nickel addition to impart improved corrosion properties with stainless steel.
SilverAlloy Z-75	Joining of steel and stainless steel assemblies that come into contact with ammonia (NH ₃).
SilverAlloy Z-85M	Brazing of specialty steels and alloy used in high temperature service.
Layered SilverAlloys	
Layermet A-40Ni2	Similar to Layermet A-50Ni2 with higher brazing temperature, also exhibit good strength and wetting action on carbide.
Layermet A-40Ni5	Similar to Layermet A-40Ni2 with higher nickel for strength and corrosion resistance.
Layermet A-50Ni2	A popular cadmium-free tri-layered silver-copper-silver strip in 1/2/1 ratio that delivers superb performance in carbide brazing applications.
Layermet Cd-50Ni3	A cadmium bearing Layermet with exceptional strength, flow characteristics, and extremely low brazing temperature.

Aufhauser Silver Brazing Alloys Reference Guide

Available Specifications

Product name	AMS	AWS A5.8	BS 1845	DIN 8513	Federal QQ-B-654A ⁽¹⁾	ISO 3677	NFA 81-362	Handy & Harman	JW Harris
PhosCopper SilverAlloys									
PhosCopper 0	-	BCuP-2	CP 3	L-Cu P 7	BCuP-2 ⁽²⁾	B Cu 93P 710-820	07 B1	Fos-Flo 7	Harris 0
PhosCopper 2	-	BCuP-6	CP 2	L-Ag 2 P	-	B Cu 92P Ag 645-800	06 B1	Sil-Fos 2	Stay-Silv 2
PhosCopper 5	-	BCuP-3	CP 4	L-Ag 5 P	BCuP-3 ⁽²⁾	B Cu 89P Ag 645-780	06 B2	Sil-Fos 5	Stay-Silv 5
PhosCopper 5F	-	BCuP-7	-	-	-	B Cu 89P Ag 645-770	-	Sil-Fos 5HP	Stay-Silv 5HP
PhosCopper 6D	-	-	-	-	-	-	-	-	Dynaflow
PhosCopper 6F	-	BCuP-4	-	-	BCuP-4 ⁽²⁾	-	-	Sil-Fos 6	Stay-Silv 6HP
PhosCopper 15	-	BCuP-5	-	L-Ag 15 P	BCuP-5	B Cu 80 Ag P 645-770	05 B1	Sil-Fos	Stay-Silv 15
PhosCopper 18M	-	-	-	-	-	-	-	Not Available	Not Available
Cadmium Bearing SilverAlloys									
SilverAlloy Cd-20	-	-	-	-	-	-	-	-	Not Available
SilverAlloy Cd-25	-	BAG-27	-	-	-	-	-	Easy-Flo 25	Not Available
SilverAlloy Cd-25L	-	BAG-33	-	L-Ag 25 Cd	-	B Cu 33 Zn Ag Cd 605-720	-	-	Not Available
SilverAlloy Cd-30	-	BAG-2a	AG 12	L-Ag 30 Cd	-	B Ag 30 Cd Zn Cu 600-690	30 A1	Easy-Flo 30	Not Available
SilverAlloy Cd-35	4768	BAG-2	-	-	VIII	B Ag 35 Cd Zn Cu 610-700	35 A1	Easy-Flo 35	Not Available
SilverAlloy Cd-45	4769	BAG-1	-	L-Ag 45 Cd	VII	B Ag 45 Cd Zn Cu 620-635	45 A1	Easy-Flo 45	Not Available
SilverAlloy Cd-50	4770	BAG-1a	AG 1	L-Ag 50 Cd	IV	B Ag 50 Cd Zn Cu 620-640	50 A1	Easy-Flo 50	Not Available
SilverAlloy Cd-50Ni3	4771	BAG-3	AG 9	-	V	B Ag 50 Cd Zn Ni 635-685	50 A2	Easy-Flo 3	Not Available
Cadmium Free SilverAlloys									
SilverAlloy A-5	-	-	-	-	-	-	-	-	-
SilverAlloy A-9	-	-	-	-	-	-	-	-	-
SilverAlloy A-20	-	-	-	-	-	-	-	-	-
SilverAlloy A-25	-	-	-	-	-	-	-	-	-
SilverAlloy A-25T	-	BAG-37	-	L-Ag-25Sn	-	B Cu 40Zn Ag Sn 680-760	25 A2	Braze 255	Safety-Silv 25
SilverAlloy A-30	-	BAG-20	-	L-Ag 30	BAG-20	B Cu 38Zn Ag 650-750	-	Braze 300	Safety-Silv 30
SilverAlloy A-35	-	BAG-35	-	-	-	B Ag 35 Zn Cu 680-750	-	-	Safety-Silv 35
SilverAlloy A-38T	4761	BAG-34	-	-	-	B Ag 38 Cu Zn Sn 650-720	-	Braze 380	Safety-Silv 38T
SilverAlloy A-40	-	-	-	-	-	-	-	-	-
SilverAlloy A-40Ni2	-	BAG-4	-	-	BAG-4	B Ag 40 Cu Zn Ni 670-780	-	Braze 403	Safety-Silv 40N2
SilverAlloy A-40Ni5	-	-	-	-	-	-	-	Braze 404	Safety-Silv 40N5
SilverAlloy A-40L	-	-	-	-	-	-	-	-	-
SilverAlloy A-40T	-	BAG-28	-	L-Ag 40Sn	-	B Ag 40 Cu Zn Sn 640-680	-	Braze 402	Safety-Silv 40T
SilverAlloy A-45	-	BAG-5	-	-	BAG-5	B Ag 45 Zn Cu 660-740	45 A2	Braze 450	Safety-Silv 45
SilverAlloy A-45T	-	BAG-36	-	L-Ag 45Sn	-	B Ag 45 Cu Zn Sn 640-680	-	Braze 452	Safety-Silv 45T
SilverAlloy A-49NM	-	BAG-22	AG 18	L-Ag 49	BAG-22	B Ag 49 Zn Cu Mn Ni 625-705	-	-	-
SilverAlloy A-50	-	BAG-6	-	-	-	-	-	Braze 501	Safety-Silv 50
SilverAlloy A-50Ni2	4788	BAG-24	-	-	-	B Ag 50 ZnCu Ni 660-750	-	Braze 505	Safety-Silv 50N
SilverAlloy A-50T	-	-	-	-	-	-	-	-	-
SilverAlloy A-54Ni1	4772	BAG-13	-	-	-	-	-	Braze 541	Safety-Silv 54
SilverAlloy A-56T	4763	BAG-7	AG 20	-	BAG-7	B Ag 56 Cu Zn Sn 620-650	56 A1	Braze 560	Safety-Silv 56
SilverAlloy A-60	-	-	-	-	-	-	-	-	-
SilverAlloy A-65	-	BAG-9	-	-	BAG-9	B Ag 65 Zn Cu 670-720	63 A1	Braze 650	Safety-Silv 65
SilverAlloy A-70	-	BAG-10	-	-	BAG-10	-	-	Braze 700	Safety-Silv 70
SilverAlloy A-75	-	-	-	-	-	-	-	-	-
Cd/Zn Free SilverAlloys									
SilverAlloy B-7T	4766	-	-	-	-	-	-	Braze 852	Safety-Silv 85
SilverAlloy B-56Ni2	4773	BAG-13a	-	-	BAG-13a	B Ag 60 Cu Sn 600-720	60 A1	Braze 603	Safety-Silv 60T
SilverAlloy B-60T	-	BAG-18	-	-	BAG-18	-	-	-	-
SilverAlloy B-72	-	BAG-8	-	-	-	-	-	-	-
SilverAlloy B-72Ni05	4765	-	-	-	-	-	-	Braze 559	Safety-Silv 56N
SilverAlloy Z-75	4774	-	-	-	-	-	-	Braze 630	Safety-Silv 63T
SilverAlloy Z-85M	-	BAG-23	-	-	BAG-23	-	-	-	-
Layered SilverAlloys									
Layernet A-40Ni2	-	-	-	-	-	-	-	Trimet 201	Ag Clad 40Ni2
Layernet A-40Ni5	-	-	-	-	-	-	-	Trimet 202	-
Layernet A-50Ni2	-	-	-	-	-	-	-	Trimet 259	-
Layernet Cd-50Ni3	-	-	-	-	-	-	-	Trimet 258	-

⁽¹⁾ QQ-B-650C, QQ-B-654, QQ-S-561D, MIL-B-15395 Superseded by QQB-654A.

⁽²⁾ QQ-B-650B Superseded by AWS A5.8.