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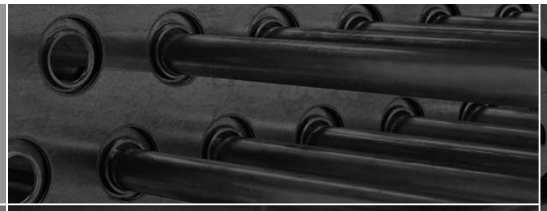
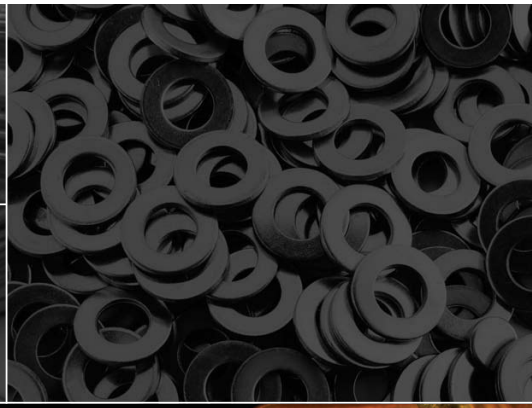




BRAZING SOLUTIONS

SARU SILVER
ALLOY PRIVATE LIMITED

3, Saru Nagar, Sardhana Road, P.O. Box No.103 Meerut-250 001, U.P. (India)
Phone : +(91)-(121)-2555433/2555932/2555291 Fax : +(91)-(121)-2555515
E-Mail : info@sarusilver.com

SARU SILVER
ALLOY PRIVATE LIMITED

ABOUT US

2007
Started the production line for Flux Coated Brazing Alloys successfully running the world over.

2002
Started a new production line for brazing alloys in preforms like Rings, Washers, Discs, & other shapes.

1988
Due to the rapid growth in the Silver Brazing Division, it was demerged to be known as 'Saru Silver Alloy Private Limited'.

1976
A group company, Saru Aikoh was formed in technical collaboration with Aikoh Co., Japan for manufacturing Foundry Fluxes.

1960
First Non Ferrous Continuous Casting Plant in India for the manufacture of Continuous Cast Phosphor Bronze.

1948
Started the manufacturing of Silver Brazing Alloys.

1944
Saru Smelting Private Limited was formed with the manufacture of Flux Cored Solder Wire.

1939
Took contracts for the supplies of Non Ferrous metals to military establishments.

1900
Started trading in Non Ferrous Alloys.

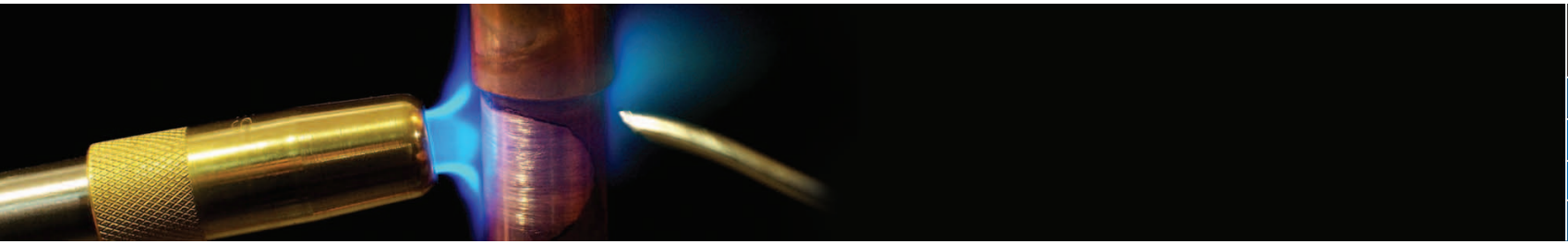
OUR STORY

Saru is an Indian non ferrous manufacturing group with a long historic background and has successfully maintained an innovative spirit since its founding in 1900. It's division Saru Silver is the largest and pioneer manufacturer of Silver Brazing Alloys in India exporting to more than 42 countries worldwide.

Saru Silver is your single source for all your brazing needs including alloys, fluxes and any technical assistance. Saru Silver is a principal supplier to various industries like Automobiles, Railways, Electrical, Power & Switchgear, Pumps & Motor Industry, Air Conditioning & Refrigeration, Heat Exchangers, Cutting Tools, Machine Tools, Diamond Tools, Oil & Natural Gas, Defence, Aerospace, Atomic & Nuclear Energy.

Saru Silver has the most updated technology along with modern machines in the Indian Industry. Our highly experienced and trained manpower along with adhered to quality systems only makes our job easier to produce world class brazing alloys & fluxes. Our tight in-process controls allow us to consistently manufacture products with zero defects and meet customer expectations. All our products finally go through our state of the art quality lab & quality assurance team who ensure that our customers receive only the finest. Saru Silver provides complete traceability of its finished product.
Each lot of brazing alloy is certified to meet IS, AWS, DIN, BS, ISO and other popular specifications as ordered by the customer.

As a specialist in the brazing industry and having the advantage of being the oldest & highly experienced, we offer the most comprehensive and widest range of brazing alloys available. Saru brand is recognized as a reliable and a dependable supplier offering quality products at one of the most competitive pricing available in the world. Saru Silver is an ISO 9001 - 2008 certified company.

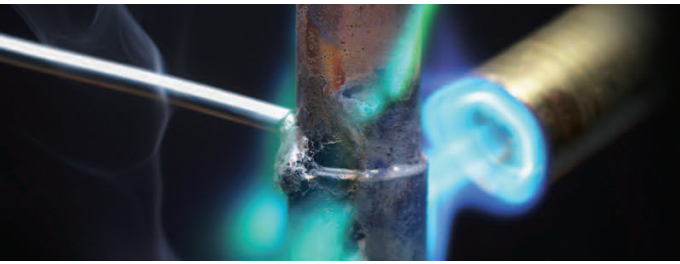


HIGH SILVER BRAZING ALLOYS

CADMIUM FREE GRADES

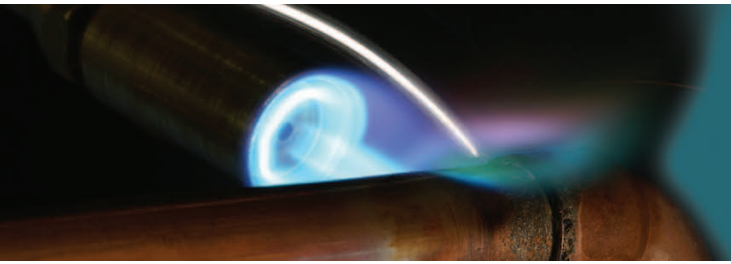
CADMIUM FREE GRADES

Saru Silver Brazing Alloy	Nominal Composition %				Melting Range	Operating Temp.	Density	Tensile Strength	International Standards					Main Applications
	Ag	Cu	Zn	Others	°C	°C	g/cm3	N/mm2	IS 2927	BS 1845	DIN 8513	AWS A5.8	DIN EN 1044	
SILVER 925	92.5	7.3	-	0.20Li	760-890	930	10.2	-	BACuAg0	-	-	BAg-19	-	Used in higher brazing temperature applications, where precipitation-hardening heat treatment in brazing are combined.
SILVER 85	85	-	-	15 Mn	960-970	960	9.4	-	-	AG19	L-Ag85	BAg-23	AG501	A high temperature free flowing filler metal. Mainly used in brazing stainless steel, nickel based, cobalt based alloy or high temperature applications.
SILVER 83	83	15	2	-	780-830	830	10.2	-	-	-	L-Ag83	-	-	Mainly used for brazing and braze welding of precision silver equipment or precision silver linings of chemical equipments.
SILVER 75	75	22	3	-	740-775	770	10	-	BACuAg2	-	L-Ag75	-	-	For Brazing of objects made of silver alloys which are to be enameled afterwards.
SILVER 72	72	28	-	-	779	780	10	350	BACuAg3	AG7	L-Ag72	BAg-8	AG401	For Ferrous and non-ferrous base alloys, especially for thin sections of stainless steel.
SILVER 715	71.5	28	-	0.5Ni	780-795	860	10	-	-	-	-	-	-	Suitable for both ferrous and non ferrous alloys.
SILVER 70	70	20	10	-	690-740	790	9.8	-	-	-	-	BAg-10	-	Used particularly for joining sterling silver. Good color match with sterling silver.
SILVER 67	67	23	10	-	700-730	730	9.7	-	-	-	L-Ag67	-	-	Used for brazing of silver goods made of silver alloys.
SILVER 65	65	28	-	5Mn, 2Ni	750-850	890	9.9	-	-	-	-	-	-	For brazing invar, kovar and similar alloys to copper in vacuum tubes; as jet engine rubbing seals.
SILVER 64	64	20	16	-	690-720	720	9.7	400	-	-	L-Ag64	BAg-9	AG201	Used particularly for joining sterling silver. Good color match with sterling silver.
SILVER 63	63	28.5	-	2.5Ni, 6Sn	690-800	850	9.9	-	-	-	-	BAg-21	-	Used in brazing 300 and 400 series stainless steels as well as the precipitation hardening nickel and steel alloys.
SILVER 61	61	29	10	-	690-735	-	-	-	BACuAg6	-	-	-	-	For joining Electrical Components requiring high electrical conductivity and gives a close colour match of silver. Also used for brazing silver goods.
SILVER 601Sn	60	23	14	3Sn	620-685	680	9.6	480	-	-	L-Ag60Sn	-	AG101	Used for brazing of silver goods made of silver alloys.
SILVER 60	60	26	14	-	695-730	710	9.5	450	-	AG13	L-Ag60	-	AG202	For brazing monel, nickel alloys and silver.
SILVER 60Sn	60	30	-	10Sn	600-720	720	9.8	420	BACuAg7	-	-	BAg-18	-	Its tin content promotes wetting on stainless steel, nickel base alloys and carbon steel. Used for vacuum applications and brazing small parts most suited in protective atmosphere.
SILVER 575	58	32	-	7Sn, 3Mn	605-730	780	9.8	-	-	-	-	-	-	A free flowing filler metal used in brazing tungsten carbide, which is subsequently titanium nitrided.
SILVER 560	56	22	17	5Sn	620-650	650	9.5	410	BACuAg8	-	-	BAg-7	AG102	A low melting free flowing filler metal with good wetting properties. Used for food equipment where cadmium must be avoided. Is used by the dairy and food industry. Gives a closer color match with stainless steel.
SILVER 55Sn	55	21	22	2Sn	620-660	650	9.4	390	-	AG14	L-Ag55Sn	-	AG103	Is for use on any steels, copper and copper alloys, nickle and nickle alloys.
SILVER 561	56	42	-	2Ni	770-895	925	9.8	-	-	-	-	BAg-13a	-	Advantageous where volatilization is objectionable in furnace brazing.
SILVER 54	54	40	5	1Ni	718-857	910	9.7	-	BACuAg8b	-	-	BAg-13	-	Atmosphere furnace brazing for high temperature applications like jet engines.
SILVER 5050	50	50	-	-	780-870	925	9.7	-	-	-	-	-	-	For applications similar to silver 72 except where better gaps filling is needed.
SILVER 50NCdF	50	20	28	2Ni	660-750	780	9	450	-	-	-	BAg-24	-	A free flowing brazing filler for joining 300 series stainless steel. Used for food handling equipment, hospital utensils and tungsten carbide inserts in cutting tools.
SILVER 50CdF	50	34	16	-	688-774	-	9.4	-	BACuAg9	-	-	BAg-6	-	Used especially for brazing in the electrical industry. Also used in the dairy and food industries, where cadmium is prohibited. It's broad melting range and not so free flowing property makes it useful for filling wide joint clearances.



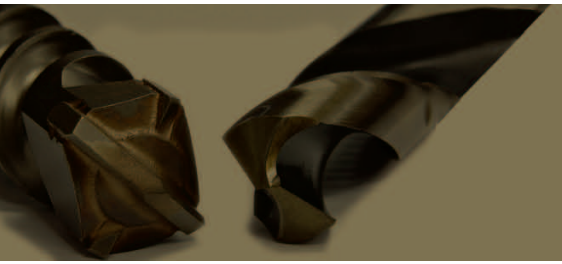
CADMIUM FREE GRADES

Saru Silver Brazing Alloy	Nominal Composition %				Melting Range	Operating Temp.	Density	Tensile Strength	International Standards					Main Applications
	Ag	Cu	Zn	Others	°C	°C	g/cm3	N/mm2	IS 2927	BS 1845	DIN 8513	AWS A5.8	DIN EN 1044	
SILVER 45Sn	45	27	25	3Sn	640-680	670	9.2	350	-	-	L-Ag45Sn	BAg-36	AG104	Low temperature, free flowing, cd-free alloy.
SILVER 45CdF	45	30	25	-	670-740	730	9.1	545	BACuAg14	AG15	L-Ag44	BAg-5	AG203	It is an excellent filler metal for brazing brass parts (such as ships piping, band instruments, aircraft engine oil coolers, brass lamps etc).
SILVER 43CdF	43	37	20	-	700-775	760	9.1	400	BACuAg16	AG5	-	-	-	Used for brazing of ferrous and non ferrous metals other applications similar to Silver 45.
SILVER 40Sn	40	30	28	2Sn	640-700	690	9.1	430	-	AG20	L-Ag40Sn	BAg-28	AG105	Is free flowing alloys for ferrous, non-ferrous and dissimilar metals with good fluidity.
SILVER 40CdF	40	30	30	-	675-725	780	8.8	-	-	-	-	-	-	For brazing copper base alloys, mild steel, nickel and monel and where a narrow melting range is desired.
SILVER 4002	40	58	-	2Ni	-	-	-	-	-	-	-	-	-	A cadmium free & zinc free brazing alloy particularly suited for vacuum brazing.
SILVER 38Sn	38	32	28	2Sn	650-720	710	9.1	430	-	-	-	BAg-34	-	A free flowing cadmium free filler metal used with ferrous and non ferrous base metals.
SILVER 35CdF	35	32	33	-	680-750	740	9	450	-	-	-	BAg-35	-	Intermediate temperature filler metal for use with ferrous and non ferrous materials.
SILVER 34Sn	34	36	27	3Sn	630-730	710	9	450	-	-	L-Ag34Sn	-	AG106	The presence of tin improves fluidity & wetting. Used for brazing the assembly of copper tubes in the refrigeration industry and on containers in the food industry.
SILVER 30CdF	30	38	32	-	680-765	750	8.9	400	-	AG16	L-Ag30	BAg-20	AG204	It possesses good wetting and flow characteristics. Moderate ductility limits joint design and applications.
SILVER 30Sn	30	36	32	2Sn	650-750	740	8.8	440	-	AG21	L-Ag30Sn	-	AG107	Is free flowing alloys for ferrous, non-ferrous and dissimilar metals with good fluidity.
SILVER 25Sn	25	40	33	2Sn	680-760	750	8.7	420	-	-	L-Ag25Sn	BAg-37	AG108	An economical filler metal for ferrous and non ferrous joints, not requiring high ductility or impact strength.
SILVER 25CdF	25	41	34	-	700-800	780	8.8	405	-	AG17	L-Ag25	-	AG205	An economical low silver filler metal used for ferrous metals, stainless steel, copper, brass except aluminium, used in mechanical and electrical industries, refrigeration, musical instruments.
SILVER 25Ni	25	38	33	2Ni, 2Mn	705-800	835	8.6	-	-	-	-	BAg-26	-	An economic filler metal suitable for tungsten carbide, stainless steel as steel.
SILVER 20	20	44	35.9	0.1Si	690-810	810	8.7	390	-	-	L-Ag20	-	AG206	For simultaneous brazing and heat treating of steels.
SILVER 18Sn	18	47.2	33	1.8Sn	720-790	790	8.4	-	-	-	-	-	-	
SILVER 16	16	50	34	-	790-830	820	8.6	-	-	-	-	-	-	
SILVER 12CdF	12	48	40	-	800-830	830	8.5	410	-	-	L-Ag12	-	AG207	For torch brazing on carbon and stainless steel copper, nickel and its alloys. Used in boiler works for drawn components.
SILVER 09	9	53	38	-	765-850	870	8.6	-	BACuAg23	-	-	-	-	For copper base alloys such as band instruments; or joint brazing / cyanide case hardening of steels.
SILVER 07	7	85	-	8Sn	665-985	1020	9.1	-	-	-	-	-	-	Used when heat treatment follows brazing, as a lower melting alloy than copper, or in vacuum systems.
SILVER 5CdF	5	55	39.9	0.1Si	820-870	860	8.4	390	-	-	L-Ag5	-	AG208	Brazing nichrome resistance elements, or simultaneous brazing and heat treatig of steels.
SILVER 4CdF	4	56	39.7	0.3Si	870-890	900	8.4	370	-	-	-	-	-	Used as a alternative to brass alloys in automated brazing operations, and for brazing of tungsten carbide tips to tools and saw blades. The small addition of silver enhances their flow characteristics.
SILVER 2	2	58	39.9	0.1Si	880-890	900	8.4	340	-	-	-	-	-	
SILVER 2Ni	2	53	42	3Ni	875-895	900	8.4	-	-	-	-	-	-	
SILVER 1	1	60	38.9	0.1Si	890-900	900	8.3	350	-	-	-	-	-	

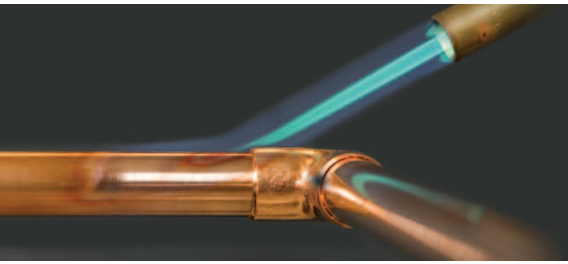


CADMIUM BEARING GRADES

Saru Silver Brazing Alloy	Nominal Composition %					Melting Range	Operating Temp.	Density	Tensile Strength	International Standards					Main Applications
	Ag	Cu	Zn	Cd	Others	°C	°C	g/cm3	N/mm2	IS 2927	BS 1845	DIN 8513	AWS A5.8	DIN EN 1044	
SILVER 67Cd	67	11	12	10	-	635-720	710	9.9	-	-	-	L-Ag67Cd	-	-	Used for brazing of silver goods made of silver alloys.
SILVER 50Cd	50	15.5	16.5	18	-	620-640	640	9.5	420	BACuAg10	AG 1	L-Ag50Cd	BAg-1a	AG 301	One of the lowest melting point Silver Brazing alloys available. It has excellent flow characteristics. The highest joint strength can be obtained with this alloy. Has better resistance to corrosion in chlorine, sulphur and steam environments.
SILVER 45Cd	45	15	16	24	-	607-618	620	9.3	450	BACuAg15	-	-	BAg-1	AG 302	Lowest brazing temperature range of the BAg filler metals. It also flows more freely into narrow clearance capillary joints. Its narrow melting range is suitable for rapid or slow methods of heating.
SILVER 451Cd	45	17	18	20	-	620-635	620	9.4	460	-	-	L-Ag45Cd	-	-	
SILVER 44Cd	44	27	13	15	1P	595-660	660	9.2	-	-	-	-	-	-	Low melting filler metal for brazing electrical contacts, molybdenum or copper-tungsten electrodes.
SILVER 43Cd	43	16	20	21	-	615-620	620	9.1	400	BACuAg16A	-	-	-	-	This has the shortest melting range of any silver brazing alloys. This alloy is regarded as the best brazing alloy by manual brazers. It is particularly recommended where a minimum brazing temperature is desirable to preserve the properties of the parent metals. Ideal where joints have a close fitup and will produce neat joints with optimum ductility and strength.
SILVER 42Cd	42	17	16	25	-	610-620	610	9.1	390	-	AG 2	-	-	AG303	
SILVER 40Cd	40	19	21	20	-	595-630	610	9.3	450	-	AG 10	L-Ag40Cd	-	AG 304	These are normally considered to be general purpose alloys. They exhibit good all round brazing characteristics of short melting range, good flow, joint penetration and fillet forming capability. Due to their good flow characteristics they are suitable for majority of applications.
SILVER 38Cd	38	20	22	20	-	605-650	640	9.2	420	BACuAg19	AG 3	-	-	-	
SILVER 35Cd	35	26	21	18	-	610-700	700	9.1	420	BACuAg20	-	-	BAg-2	AG 305	A free flowing general purpose brazing alloy. Its broader melting range is helpful where clearances are wide or are not uniform. Unless heating is rapid, care must be taken that the lower melting constituents do not separate out by liquation.
SILVER 34Cd	34	22	24	20	-	610-680	640	9.1	400	-	AG 11	L-Ag34Cd	-	-	
SILVER 30Cd	30	28	21	21	-	600-690	680	9.2	380	BACuAg21	AG 12	L-Ag30Cd	BAg-2a	AG 306	Similar to Silver 40Cd but more economical.
SILVER 25HCd	25	30	27.5	17.5	-	607-682	710	8.8	380	-	-	L-Ag25Cd	BAg-33	AG 307	Silver 251, 250 & 20Cd have good fillet forming properties with an ability to bridge wide gaps. Their wide melting range limit their applications. Due to their wide melting range they are somewhat more subject to liquation and may require more care during brazing. Therefore, they are not normally recommended for applications with slow heating rates.
SILVER 25Cd	25	35	26.5	13.5	-	605-745	745	9.0	-	-	-	-	BAg-27	-	
SILVER 23Cd	23	35	27	15	-	616-735	720	8.7	400	-	-	-	-	-	
SILVER 21Cd	21	35.5	26.5	16.5	0.5 Si	610-750	720	8.6	380	-	-	-	-	AG 308	
SILVER 20Cd	20	40	25	15	-	605-765	750	8.8	380	-	-	L-Ag20Cd	-	AG 309	
SILVER 17Cd	17	41	26	16	-	620-760	760	8.7	350	-	-	-	-	-	
SILVER 13Cd	13	44	33	10	-	605-795	790	8.7	350	-	-	-	-	-	Economical alloy with wide melting range. Like above, preferred for applications having short heating cycles to avoid liquation. Ideal for bridging wider gaps where work pieces are insensitive to heat.
SILVER 12Cd	12	50	31	7	-	620-825	800	8.5	410	-	-	L-Ag12Cd	-	-	
SILVER 5Cd	5	-	-	95	-	335-392	400	8.9	-	-	-	-	-	-	Used where alloy having higher melting point and better strength than soft solder is required.
SILVER 2Cd	2	-	18	80	-	260-270	-	-	-	-	-	-	-	-	For brazing aluminum to aluminum, or aluminum to copper. Very high fluidity. Excellent mechanical resistance.



Saru Silver Brazing Alloy	Nominal Composition %					Melting Range	Operating Temp.	Density	Tensile Strength	Shear Strength	International Standards					Main Applications
	Ag	Cu	Zn	Ni	Others	°C	°C	g/cm3	N/mm2	MPa	IS 2927	BS 1845	DIN 8513	AWS A5.8	DIN EN 1044	
SILVER 50N	50	15.5	15.5	3	16Cd	645-690	660	9.5	450	150-300	BACuAg12	AG9	L-Ag50CdNi	BAg-3	AG351	A general purpose alloy with excellent mechanical properties. The nickel improves wetting on carbides. A less free flowing alloy giving a thicker braze joint, better able to accommodate higher stresses.
SILVER 49 (MnNi)	49	16	23	4.5	7.5Mn	625-705	690	8.9	-	250-300	-	AG18	L-Ag49	BAg-22	AG502	The addition of manganese enchances wetting on difficult carbides containing titanium and tantalum which are difficult to wet under normal brazing conditions.
SILVER 49A (MnNi)	49	27.5	20.5	0.5	2.5Mn	670-690	690	8.9	-	250-300	-	-	-	-	-	For brazing tungsten carbides and substances which are difficult to wet.
SILVER 40N	40	30	28	2	-	671-779	780	8.9	350	-	BACuAg18	-	-	BAg-4	-	Is economical alloys with good wetting characteristics. Used extensively for carbide tip brazing.
SILVER 405N	40	30	25	5	-	660-860	860	9.1	380	-	-	-	-	-	-	For tungsten carbide and stainless steels.
SILVER 27	27	38	20	5.5	9.5Mn	680-830	840	8.7	-	150-300	-	-	L-Ag27	-	AG503	Economical alloy with good wetting characteristics used for brazing hard metals to steel mountings. Addition of nickel and manganese improves wettability on tungsten and molybdenum materials.
NIBRO	-	50	39.7	10	0.3Si	890-920	910	8.7	480	150-300	SC9	CZ 8	L-CuNi10Zn42	RBCuZn-D	CU305	Used for brazing tungsten carbide. It is also used with steel, cast iron and malleable iron, nickel and nickel alloys.
NIBROSIL	1	50	39.7	9	0.3Si	890-920	910	8.7	500	-	-	-	-	-	-	Nibro with 1% Silver to improve joint strength.
B BRO	-	97	-	3	0.03B	1080-1100	-	-	-	-	-	CU 7	-	-	CU 105	Used for furnace brazing without useage of flux. Used to fill gaps upto 0.5mm.
C BRO	-	86.5	-	2.5	11Mn	965-995	-	-	-	-	-	-	-	-	-	Excellent gap bridging properties. Inclusion of manganese content requires it to be brazed in inert atmosphere. If required it can also be brazed in air atmosphere using flux. Equivalent to J&M C Bronze
D BRO	-	86	10	-	4Co	980-1030	-	-	-	-	-	-	-	-	-	It is used in the brazing of rock drills having good wetting properties & strength. Equivalent to J&M D Bronze
F BRO	-	57	39	-	2Mn 2Co	890-930	930	8.2	-	-	-	-	-	-	-	Is suitable for brazing cemented carbide in rock drills and similar percusively loaded joints. Equivalent to Fbronze of J&M.
C.N.S.	-	96.6	-	2.7	0.7Si	1090-1100	1100	8.9	-	200-300	-	-	-	-	-	Is most suitable for brazing carbide to rock drills.
NIBRO 1	-	55	35	6	4 Mn	880-920	910	8.7	490	150-300	-	-	-	-	-	Low melting improved Nibro for carbides, tool steels, stainless steels & nickel alloys



COPPER PHOS. BRAZING ALLOYS

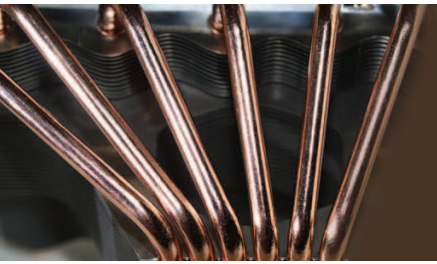
Saru Silver Brazing Alloy	Nominal Composition %				Melting Range	Operating Temp.	Density	Tensile Strength	International Standards					Main Applications
	Ag	Cu	P	Others	°C	°C	g/cm3	N/mm2	IS 2927	BS 1845	DIN 8513	AWS A5.8	DIN EN 1044	
SILVER 18	18	75	7	-	645	650	8.4	250	-	-	-	-	CP101	Exceptional Fluidity. Self Fluxing on Copper.
SILVER 15	15	80	5	-	650-800	710	8.4	250	BACuP-5	CP1	L-Ag15P	BCuP-5	CP102	It has low melting point with good flow. Used where narrow joint include uneven junctions, refrigeration industry, on parts such as cuplings, manifolds, brass distributors, capillary pipes. Has good mechanical characteristics at low temperature.
SILVER 6	6	87	7	-	643-718	700	8.3	-	-	-	-	BCuP-4	-	It is with low melting range where temperature is a factor. Fast flow, very fluid at brazing temperature and will penetrate joints with small clearances.
SILVER 5	5	89	6	-	650-810	710	8.2	250	BACuP-4	CP4	L-Ag5P	BCuP-3	CP104	It is same as Silver 15 and economic. Used largely in the refrigeration and air conditioning industry.
SILVER 2	2	91.5	6.5	-	650-810	710	8.1	250	BACuP-3	CP2	L-Ag2P	BCuP-6	CP105	It fills moderate gaps in poorly fit joints and has good flow. It has the ability to fill wide joint clearances at the lower end of its brazing range. At the high end of the brazing range, it is more fluid. Recommended for sanitary and refrigerating installations.
SILVER 1	1	92.5	6.5	-	650-810	710	8.1	250	-	-	-	-	-	Same as Silver 2 with lesser Silver.
PHOS. COPPER 1	-	92.7	7.3	-	710-820	720	8.1	250	BACuP-2	CP3	L-CuP7	BCuP-2	CP202	It is a low cost alloy with wide melting range and low fluidity. Used in sanitary, refrigeration and air conditioning industry.
PHOS. COPPER 2	-	93.8	6.2	-	710-880	730	8.1	250	BACuP-1	CP6	L-CuP6	BCuP-1	CP203	It is the most economical and used where the joint clearance is wider. Flow is sluggish.

COPPER BRAZING ALLOYS

Saru Silver Brazing Alloy	Nominal Composition %				Melting Range	Operating Temp.	Density	Tensile Strength	International Standards					Main Applications
	Cu	Zn	Si	Others	°C	°C	g/cm3	N/mm2	IS 2927	BS 1845	DIN 8513	AWS A5.8	DIN EN 1044	
SIBRO	60	39.7	0.3	-	890-900	900	8.4	370	SC6	CZ6	L-CuZn40	-	CU301	Sibro is for brass brazing steels, malleable cast iron, copper, copper alloy with melting temperatures greater than 950°C (Solidus), nickel, nickel alloys.
MANBRO	60	39.6	0.2	0.2Mn	900-915	-	8.4	-	SC8	-	-	-	-	For copper, cast and malleable iron brazing.
TINBRO 1	93.8	-	-	6Sn 0.2P	910-1040	1040	8.7	-	-	-	L-CuSn6	-	CU201	Used on any steels, nickel and nickel alloys.
TINBRO 2	87.8	-	-	12Sn 0.2P	825-990	990	8.6	-	-	-	L-CuSn12	-	CU202	Used on any steels, nickel and nickel alloys and copper materials.
CUPRO	100	-	-	-	1083	1100	8.9	-	SC1	-	L-Cu	BCu-1	CU102	Used for joining ferrous metals, nickel base alloys and copper nickel alloys.
SARU 680	58	39.4	0.1	0.6Ni 0.3Mn 0.9Sn 0.7Fe	866-882	900	8.2	430	-	-	-	RBCuZn-B	-	Used for brazing steel, cast iron, copper, copper alloys, nickel and nickel alloys. Used with torch, induction and furnace processes.
SARU 681	59	39.5	0.1	1Sn 0.4Mn	866-888	890	8.4	380	-	CZ 7A	L-CuZn39Sn	RBCuZn-C	-	Used on steels, copper, copper alloys, nickel, nickel alloys and stainless steel. It is used with torch, furnace and induction brazing process.
BRASS 5446	54	46	-	-	880-890	890	8.3	-	-	-	L-CuZn46	-	-	Used mainly on steels, malleable cast iron, copper and copper alloys.
SARU 470	59	39.7	0.2	1Sn	888-899	900	8.4	400	-	-	-	RBCuZn-A	-	Used on steels, copper, copper alloys, nickel, nickel alloys & stainless steel where corrosion resistance is not important.

FLUXES

Saru Silver Flux	Activity Range	International Standards		Filler Metals	Main Applications
	°C	EN 1045	AWS-FB		
Saru Flux-A (Powder)	500-750	-	-	BAg BCuP	All purpose , low temperature flux for use in brazing both ferrous and non-ferrous metals and alloys using silver brazing filler metals. Begins to melt and dissolve oxides at 340°C. Fully molten at about 600°C and provides adequate protection upto 750°C. Excellent in hot rodding operation used to braze weld where the hot brazing rod is plunged into the dry powder. Easy cleanup in hot water.
Saru Flux-A1 (Powder)	600-815	-	FB3F	BAg	For applications where a dry low volatile flux is required. Recommended for use in 650-815°C range. Excellent in hot rodding operations. Easy cleanup.
Saru Flux-A (Paste)	500-870	FH 10	FB3A	BAg BCuP	General purpose, low temperature flux which provides excellent adhesion and creamy smooth consistency. For brazing all ferrous and non-ferrous alloys. Begins to melt and dissolves oxides at 320°C, fully molten at 600°C, it provides excellent protection of parts upto 870°C. Easy cleanup with hot water.
Saru Flux Type D & DB (Slurry)	550-870	-	FB3G (D) FB3H (DB)	BAg BCuP	For automatic dispensing as controlled dabs or sprays. Same formulations as Super Flux-A (Paste), with additives to provide a lower (pourable) viscosity. Type DB has an additional ingredient for use with more refactory oxides, such as in automated brazing of carbides.
Saru Flux-B (Powder/Paste) Boron Modified	600-925	FH 12	FB3C	BAg BCuP	For brazing high chromium stainless steels, tungsten and chromium carbides, and molybdenum alloys. Its temperature range is 600-925°C and it is useful in applications where local overheating may occur, as in fast induction heating.Boron modified.
Saru Flux-C (Powder/Paste)	600-870	-	FB4A	Al Bronze AlSi Bronze NiAl Bronze	For brazing aluminium bronze (Al-5 to 8,Cu-bal.), aluminium-silicon bronze (Al-7, Si2, Cu-bal.) and nickle-aluminium-bronze (Al-9.5, Ni-5, Fe-2.5, Mn-1, Cu-bal.) using silver brazing filler metals.Active range: 600-870°C. Not recommended for use with aluminium or titanium-base alloys.
Saru Flux-D (Powder/Paste)	650-870	-	-	BAg	For applications with long heating cycles as in furnace brazing. Also useful in induction heating operations, where tendency to overheat may exist. Active range: 650-870°C.
Saru Flux Hi- Temp	750-1100	FH 21	FB3D	BAg,BCuP BCu,RBCuZn	Used where brazing temperatures go into the 870-1100°C range or for considerable lengths of time above 785°C.
Saru Flux-E (Liquid)	550-870	-	FB3E	BAg	For brazing in furnaces with poor atmosphere or joining jewellery parts above 625°C. Primarily used where only a limited fluxing ability is required.
Saru Flux Hi-Temp M (Powder/Paste)	750-1200	FH 21	FB3D	BAg, BCu, BNi BAu, RBCuZn	Used in the brazing of carbides, Stainless and alloy steels, and nickel based alloys using copper alloy and gold alloy filler metals requiring brazing temperatures between 900-1200°C.
Alumibraze-A (Powder)	500-700	-	FB1C	AlSi, AlZn	For brazing aluminium and its alloys using Al-12%Si filler metal.
Alumibraze-B (Powder)	400-700	-	FB1C	AlSi AlZn	Similar to above but this flux becomes active at a lower temperature thereby minimizing damage to the aluminium base metal. Suitable for brazing thin sections.
Alumiweld (Powder)	-	-	-	Al	For welding aluminium and its alloys.



BRAZING ALLOYS IN POWDERS & PASTES

Saru Silver Brazing Alloy	Nominal Composition %								Melting Range	Operating Temp.	International Standards			Main Applications
	Cu	Ni	Cr	Fe	Si	B	P	Others	°C	°C	DIN 8513	AWS A5.8	DIN EN 1044	
CUPRO	100	-	-	-	-	-	-	-	1083	1100	L-Cu	BCu-1	CU102	Used for joining ferrous metals, nickel base alloys and copper nickel alloys, steel assemblies.
TINBRO 1	93.8	-	-	-	-	-	0.2	6Sn	910-1040	1040	L-CuSn6	-	CU201	Used on any steels, nickel and nickel alloys.
TINBRO 2	87.8	-	-	-	-	-	0.2	12Sn	825-990	990	L-CuSn12	-	CU202	Used on any steels, nickel and nickel alloys and copper materials.
PHOS. COPPER 1	92.7	-	-	-	-	-	7.3	-	710-820	720	L-CuP7	BCuP-2	CP202	It is a low cost alloy with wide melting range and low fluidity. Used in sanitary, refrigeration and air conditioning industry.
PHOSCO TIN	86.2	-	-	-	-	-	6.8	7Sn	650-680	700	-	-	-	Silver free, low temperature, free flowing alloy for low joint clearances.
NIBRAZE 5	-	70.9	19	-	10.1	-	-	-	1080-1135	1190	L-Ni5	BNi-5	NI 105	High strength filler metal & used where boron cannot be used like in nuclear reactors boron free usages. Used on stainless steels.
NIBRAZE 1A	-	73.9	14	4.5	4.5	3.1	-	-	980-1070	1175	-	BNi-1a	NI 1A1	For high strength, heat resistant joints. Used on stainless steels.
NIBRAZE 2	-	82.4	7	3	4.5	3.1	-	-	970-1000	1050	L-Ni2	BNi-2	NI 102	Low melting filler metal used for stainless steels & jet engine parts.
NIBRAZE 7	-	76	14	-	-	-	10	-	890	980	L-Ni7	BNi-7	NI 107	Low melting free flowing filler metal used on thin walled tube assemblies for copper & stainless steel.

BRAZEBINDER

Brazebinder

Brazebinder is a thick 'gel' type hydrocarbon based product used as a carrier for mixing with braze alloy powders and/or fluxes to make an easily dispensable paste. Brazebinder offers the following advantages over other carriers (primarily water based):

- Brazebinder is very viscous, so no settling of the metal powder or flux occurs; the resultant paste is very homogeneous.
- Brazebinder is 'slippery', hence can be easily dispensed through syringes or automatic paste dispensers to make a bead at the joint edges.
- Brazebinder is non-reactive with flux or metal powder.
- Brazebinder is clean burning and virtually leaves no residue.
- Brazebinder is economical , only a small amount of Brazebinder needs to be mixed with metal powder or metal powder plus flux combination.
- During pre heating of parent metals water based binders tend to fall off and thereby no brazing occurs.

Our Brazebinder continue to adhere with the parent metals.

CAPABILITIES



Wires and Rods:
Available with diameters from 7.00mm to 0.20mm to suit your exacting need. These are drawn from Carbide, Compax / Diamond Dies for accurate size and desired finish.

Wire Spools:
Available in a selection of spools and having the facility of precision layer wound.

Wire Coils:
We can provide coils having weight suited to your need for e.g. a small coil weighing from 1 TO (31.1 grams) upto any weight desired.

Rods & Cut Lengths:
Usually cut from 200 mm - 1000 mm (8" - 36"), other sizes available on request.

Flux Coated Rods:
Available in all alloys ranging from 1.5mm Dia to 5mm Dia in various flexes like very flexible, flexible and rigid. Coated diameters available in increments of 0.1mm in various options from very thin to standard to very thick suited and customized to your needs. Printing on coated rods is available with grade, size, international specifications or customer's name & code.

Strips:
These are available with thickness down to 0.08mm (0.003") & widths upto 101.60mm (4"). Specialised mills are used to maintain the required sizes within close tolerances. Available in coils having weight suited to your needs.

Strip Pancake Reels:
These are Pancake spools on which the strips are wound layer over layer. Usually used for automated brazing machines where the reels facilitate easy & precision dispensing.

Wire Flattening:
These are wires flattened in a mill in the form of strips having square or half round edges. Available in thickness down to 0.1mm (0.004") and width down to 0.80mm (0.031"). Available in Spools & Pancake Reels.

Wire Preforms:
These are specially produced as per customer specification such as rings or any other shape. These rings can be open ends or closed ends, single turn, two turns or multiple turns having inside diameter ranging from 300mm (12") to 3mm (0.12")

Strips Preforms:
We have a large number of dies in our stock, which have the capability to stamp strips in various shapes like squares, rectangles discs, washers or any other stamped & shaped parts. Incase of a die size not already in our inventory we have the capability to produce a simple, compound or a progressive die.
Our highly skilled craftsmen use in house high precision equipment for manufacturing dies to match your exact size requirements. We differentiate ourselves from other preform & stamping suppliers by offering quality products at one of the most competitive prices available in the world for both small and large orders.

Granules and Spheres:
Granules of silver, copper phos & copper brazing alloys with grain size 0.5mm (0.20") to 2.5mm (0.10") are available and supplied in plastic jars. Advantages of these granules include features like exact composition, highly spherical shape, polished surface for bright and shiny lustre and accurate diameters. Again, these quality products are available at one of the most competitive prices available in the world for both small and large orders.

Brazing Powders & Pastes:
Powders of silver, copper phos, copper and nickel brazing alloys available in various mesh sizes. We use solvent based binders, enabling pastes for consistent automatic dispensing, better performance and improved shelf life. Also available in syringes for manual and automatic dispensing.

Customer Specification:
Forms and Size not mentioned or specified above may be available as per customer specification on request.

Customer support:
Customer support is taken care-of by a dedicated team of technical personnel to assist you for your problem solution available at Technical Guidance.

Quality Assurance:
The quality control lab strives to provide high quality products and assures that the products are produced as per customer specification only. Products are tested both for chemical and physical analysis by utilizing our in house state of the art equipment by our highly experienced and trained quality assurance personnel who ensure that our customers receive the finest parts. Our tight in-process controls allow us to consistently manufacture products with zero defects.