

BRAZING AND SOLDERING CONSUMABLES

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1. Brazing and soldering consumables

1.1. Silver based alloys cadmium free



Above mentioned general purpose brazing alloys, products are suitable for easily joining a wide range of ferrous and non-ferrous base materials (Steel, Copper, Brass, etc.). Available in many different forms (rods, flux-coated rods, wires, strips, rings, preforms, pastes and powders), they are very free-flowing, ductile and strong. All these alloys do not contain Cadmium, do not present any Health & Safety concerns associated with Cadmium-Bearing Alloys and are compliant with the RoHS regulation. They are divided into two categories: alloys with Tin and alloys without Tin; Tin is used to lower the melting temperature of the alloy. When brazing in an oxidizing environment (in the air) the use of proper flux is required (see page 181).



Catalogue No.	Code	Composition (%)					Melting range SOL-LIQ (°C)	Density (g/cm³)	Tensile strength (kg/mm²)	Corresponding standards		
		Ag	Cu	Zn	Sn	Si				ISO 17672	EN 1044	AWS A5.8-04
31 60 XXXXX	Ag60Sn	60	23	14	3		620-685	9,6	48		AG 101	
31 56 XXXXX	Ag56Sn	56	22	17	5		620-650	9,4	48	Ag 156	AG 102	B Ag-7
31 55 XXXXX	Ag55Sn	55	21	22	2		630-660	9,4	44	Ag 155	AG 103	
31 45 XXXXX	Ag45Sn	45	27	25,5	2,5		640-680	9,2	43	Ag 145	AG 104	B Ag-36
31 40 XXXXX	Ag40Sn	40	30	28	2		640-700	9,1	44	Ag 140	AG 105	B Ag-28
31 38 XXXXX	Ag38Sn	38	31	29	2		660-720	9,1	45	Ag 138		B Ag-34
31 34 XXXXX	Ag34Sn	34	36	27,5	2,5		630-730	9	48	Ag 134	AG 106	
31 30 XXXXX	Ag30Sn	30	36	32	2		650-750	8,8	48	Ag 130	AG 107	
31 25 XXXXX	Ag25Sn	25	40	33	2		680-760	8,8	48	Ag 125	AG 108	
31 60 XXXXX	Ag60	60	26	14			695-730	9,5	45		AG 202	
31 45 XXXXX	Ag44	44	30	26			670-730	9,1	51	Ag 245	AG 203	B Ag-15
31 40 XXXXX	Ag40	40	30	30			660-720	9,1	46	Ag 244		
31 35 XXXXX	Ag35	35	32	33			680-730	9	48	Ag 235		B Ag-35
31 30 XXXXX	Ag30	30	38	32			690-760	8,9	50	Ag 230	AG 204	B Ag-20
31 25 XXXXX	Ag25	25	40	35			690-800	8,8	45	Ag 225	AG 205	
31 20 XXXXX	Ag20	20	44	36		X	690-810	8,7	43		AG 206	
31 12 XXXXX	Ag12	12	48	40		X	800-830	8,4	48	Ag 212	AG 207	
31 05 XXXXX	Ag5	5	55	40		X	820-890	8,4	48	Ag 205	AG 208	

Characteristic make-up		
Rods	Ø 0,5 4 mm	Length: 500 / 1.000 mm
Coated rods	Ø 1,5- 2- 3 mm	Length: 500 mm
Wires	Ø 0,25 3 mm	Coils and spools
Strips	Thickness: 0,1 ... 1 mm	Width: 1,5 ... 65 mm
Powder and paste	Rings	Different forms made of wires and strips

1.2. Silver based alloys for special applications

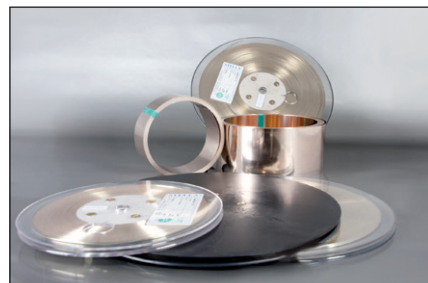


We offer alloys that, thanks to the addition of specific elements or to their particular composition, have improved characteristics that make them suitable for specific applications difficult conditions.

In particular, the addition of Nickel helps in joining difficult-to-braze materials (such as stainless steel, tool steel, tungsten carbide, nickel and nickel alloys, etc.) and improves corrosion resistance.

Manganese helps in brazing of carbides. Alloys without Zinc are suitable for brazing in furnaces (some are also available for vacuum brazing). Alloys without Copper are ammonia resistant.

Alloys with Indium are suitable for brazing of items, which will undergo the TiN Coating process.



Catalogue No.	Code	Composition (%)						Melting range SOL-LIQ	Density	Tensile strength	Corresponding standards		
		Ag	Cu	Zn	Ni	Mn	Other	(°C)	(g/cm³)	(kg/mm²)	ISO 17672	EN 1044	AWS A5.8-04
Alloys with nickel													
31 27 XXXXXX	Ag27MnNi	27	38	20	5,5	9,5		680-830	8,7	53	Ag 427	AG 503	
31 40 XXXXXX	Ag40Ni	40	30	28	2			670-780	8,9		Ag 440		
31 49 XXXXXX	Ag49MnNi	49	16	23	4,5	7,5		680-705	8,9	55	Ag 449	AG 502	B Ag-22
31 49 XXXXXX	Ag49MnNi/1	49	27	21	0,5	2,5		670-690	8,9				
31 50 XXXXXX	Ag50Ni	50	20	28	2			660-715	9	45	Ag 450		B Ag-24
Alloys without copper (ammonia resistant)													
31 72 XXXXXX	Ag72Zn	72		28				710-730	8,4	44			
Alloys without zinc (suitable for oven brazing)													
31 99 XXXXXX	Ag99,99	99,99						960-960	10,5				
31 60 XXXXXX	Ag60Sn/1	60	30				Sn10	600-720	9,8		Ag 160	AG 402	
31 72 XXXXXX	Ag72	72	28					780-780	10	35	Ag 272	AG 401	B Ag-8
31 40 XXXXXX	Ag40Ni/1	40	58		2			780-900	9,6	35			
Silver alloys with addition of indium													
31 56 XXXXXX	Ag56InNi	56	27	-	2,5	-	In14,5	600-710				AG 403	

Characteristic make-up		
Rods	Ø 0,5 4 mm	Length: 500 / 1.000 mm
Coated rods	Ø 1,5 - 2 - 3 mm	Length: 500 mm
Wires	Ø 0,25 3 mm	Coils and spools
Strips	Thickness: 0,1 ... 1 mm	Width: 1,5 ... 65 mm
Powder and paste	Rings	Different forms made of wires and strips



To provide safe work procedures on brazing operations, we recommend use of:

- protective glasses DINS (chapter 04),
- protective gloves (chapter 04),
- filterventilation devices (chapter 05).

1.3. Copper sandwiched alloys - TRIMETALS

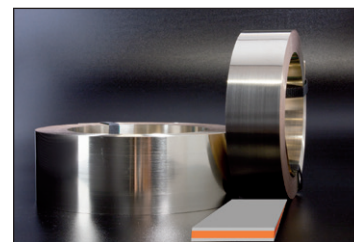


Trimetals strips consist of two layers of silver brazing alloy clad onto a copper core and are very popular for brazing of carbides onto steel, especially large pieces.

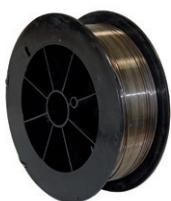
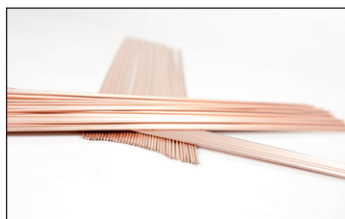
The Copper core of the strip absorbs and relieves the stresses caused by the difference in thermal expansion between carbide and base metal, thus helping to prevent cracking.

Catalogue No.	Code	Composition (%)					Melting range SOL-LIQ (°C)	Density (g/cm³)	Proportions
		Ag	Cu	Zn	Ni	Mn			
31 49 XXXXX	Ag49MnNi/1 TR	49	28	21	0,5	2,5	670-690	9	1:2:1
31 49 XXXXX	Ag49MnNi/1 TR 161	49	28	21	0,5	2,5	670-690	9	1:6:1
31 49 XXXXX	Ag49MnNi/1 TR 111	49	28	21	0,5	2,5	670-690	9	1:1:1
31 40 XXXXX	Ag40Ni TR	40	30	28	2		670-780	8,9	1:2:1
31 38 XXXXX	Ag38MnNi TR	38	26	24	4,5	7,5	650-690	8,9	1:2:1

Characteristic make-up		
Copper sandwiched strips:	Thickness: 0,1 ... 0,8 mm	Width: 1,5 ... 70 mm
Different forms from strips		



1.4. Copper phosphorous alloys



The Copper-Phosphorous alloys are extensively used to join copper and copper alloy based metals (Brass, Bronzes). The self-flux characteristic of phosphorous provides an advantage in brazing copper to copper (use of additional flux is not necessary).

The use of flux is required though for brazing copper to brass. Available in different forms: rods, wires, rings, pastes and powders. Ag15CuP is available as paste and powder as well as in strip form. Copper-Phosphorous alloys are not recommended to be used.

Catalogue No.	Code	Composition (%)					Melting range SOL-LIQ (°C)	Density (g/cm³)	Tensile strength (kg/mm²)	Corresponding standards		
		Ag	Cu	P	Sn	Si				ISO 17672	EN 1044	AWS A5.8-04
33 08 XXXXX	CuCu P8P8		92	8			710-750	8	60		CP 201	
33 07 XXXXX	CuP7,5		93	8			710-760	8,1	58			
33 07 XXXXX	CuP7		93	7			710-800	8,1	58	CuP 180	CP 202	BCuP-2
33 06 XXXXX	CuP6		94	6			710-880	8,1	56		CP 203	
33 07 XXXXX	CuP7Sn		86	7	7		650-700	8	60	CuP 386	CP 302	BCuP-9
34 03 XXXXX	Ag0,3CuPSn	0	92	7	1		700-790	8,1	60			
34 04 XXXXX	Ag0,4CuP	0	93	7			650-810	8,2	58			
34 02 XXXXX	Ag2CuP	2	92	7			650-810	8,1	55	CuP 279	CP 105	BCuP-6
34 02 XXXXX	Ag2CuPSi	2	92	7		X	650-810	8,1	55			
34 05 XXXXX	Ag5CuP	5	89	6			650-810	8,2	55	CuP 281	CP 104	BCuP-3
34 05 XXXXX	Ag5CuPSi	5	89	6		X	650-810	8,2	55			
34 06 XXXXX	Ag6CuP	6	87	7			650-740	8,3	55	CuP 283		BCuP-4
34 10 XXXXX	Ag10CuP	10	84	6			650-750	8,3	65			
34 15 XXXXX	Ag15CuP	15	80	5			650-800	8,4	54	CuP 284	CP 102	BCuP-5
34 18 XXXXX	Ag18CuP	18	75	7			650	8,4	50	CuP 286	CP 101	

Characteristic make-up		
Rods	Ø 1,5 ... 4 mm	Length: 500 / 1.000 mm
Wires	Ø 0,5 ... 3 mm	Coils and spools
Strips	Thickness: 0,1 ... 1 mm	Width: 1,5 ... 120 mm
Powder and paste	Rings	



For copper brazing we recommend the following product copper spray MOST (chapter 06) to cover discoloration after brazing.

1.5. Copper brazing based on bronze alloys



This group includes four different categories of high-temp brazing alloys:

- General Purpose Brasses.
- Brass alloys containing Silver and/or Nickel.
- High temperature and special application Brass alloys.
- Pure Copper for Furnace Brazing.

All these alloys are economical to use and can generally be supplied in a variety of forms (rods, wires, strips, pills, powder and pastes).

Brass alloys can be used for brazing and for the oxy-fuel gas braze-welding process, with liquid flux spread through the torch flame.



Catalogue No.	Code	Composition (%)								Melting range SOL-LIQ (°C)	Density (g/cm³)	Tensile strength (kg/mm²)	Corresponding standards		
		Cu	Zn	Ag	Ni	Mn	Sn	Si	Other				ISO 17672	EN 1044	AWS A5.8-04
32 60 XXXXXX	Cu60Zn	60	Bal					x		875-895	8,4	40	Cu 470a	CU 301	
32 59 XXXXXX	Cu59ZnSn	59	Bal				x	x		875-895	8,4	45	Cu 470	CU 302	RBCuZn-A
32 59 XXXXXX	Cu59ZnSnMn	59	Bal		x	x	1	x		870-890	8,4	45	Cu 681	CU 306	
32 59 XXXXXX	Cu59ZnAg	59	Bal	1		x	x	x		860-890	8,4	45			
32 59 XXXXXX	SUPER Cuprox	59	Bal	1		x	x	x							
32 48 XXXXXX	Cu48ZnNi10	48	Bal		10			x		890-920	8,7	54	Cu 773	CU 305	RBCuZn-D
32 48 XXXXXX	Cu48ZnNi9Ag	48	Bal	1	9			x		890-920	8,7	54			
32 53 XXXXXX	Cu53ZnNi6	53	Bal		6			x		900-920		49			
32 97 XXXXXX	Cu97Ni3B	97			3				B 0,03	1081-1101	8,9		Cu 186		
32 87 XXXXXX	Cu87MnCo3	87				10			Co 3	980-1030	8,7				
32 86 XXXXXX	Cu86MnNi2	86			2	12				960-990	8,8				
32 85 XXXXXX	Cu85MnNi3	85			3	12				960-990	8,8				
32 58 XXXXXX	Cu58ZnMnCo2	57,5	38,5			2			Co 2	880-930	8,2				
32 52 XXXXXX	CuMn38Ni9,5	52,5			9,5	38				880-925	7,7				
32 99 XXXXXX	Cu99,9	99,9								1083	8,9	22		CU 101	

Characteristic make-up		
Rods	Ø 0,5 ... 10 mm	Length: 500 / 1.000 mm
Coated rods	Ø 1,5 - 2 - 2,5 - 3 - 4 - 5 - 6 mm	Length: 500 / 1.000 mm
Wires	Ø 1 ... 6 mm	Coils and spools
Strips	Thickness: 0,1 ... 1 mm	Width: 5 ... 65 mm
Powder and paste	Rings, rods and spools	Different forms made of wire and strips



1.6. Nickel based alloys

These brazing alloys are generally used when specifications require good corrosion resistance and/or extreme temperature properties (both high and subzero temperatures). Ideal for brazing of Stainless Steel and Nickel based alloys, they find numerous applications in manufacturing of heat exchangers, diamond tools, and high tech sectors such as aerospace industry. Available in powder and paste form, brazing is usually performed within a protective atmosphere or vacuum.



Catalogue No.	Code	Composition (%)									Melting range SOL-LIQ (°C)	Corresponding standards	
		Ni	Cr	Fe	Si	B	C	P	Mn	Cu		EN 1044	AWS A5.8-04
35 51 XXXXXX	Ni1	Bal	14	4,5	4,5	3,1	0,7				1021-1052	NI 101	BNI-1
35 51 XXXXXX	Ni1a	Bal	14	4,5	4,5	3,1					977-1077	NI 1A1	BNI-1a
35 52 XXXXXX	Ni2	Bal	7	3	4,1	3					971-999	NI 102	BNI-2
35 53 XXXXXX	Ni3	Bal			4,5	2,9					982-1037	NI 103	BNI-3
35 54 XXXXXX	Ni4	Bal			3,5	1,9					982-1066	NI 104	BNI-4
35 55 XXXXXX	Ni5	Bal	19		10						1080-1135	NI 105	BNI-5
35 56 XXXXXX	Ni6	Bal						11			875-875	NI 106	BNI-6
35 57 XXXXXX	Ni7	Bal	14					10			890-890	NI 107	BNI-7
35 58 XXXXXX	Ni8	Bal			7				23	4,5	982-1010	NI 108	BNI-8
35 59 XXXXXX	Ni9	Bal	15			3,6					1021-1052	NI 109	BNI-9

Characteristic make-up	
Powder and paste, strips and rods	

1.7. Soft solders



The characteristic features of soft solders are low melting point, relatively low tensile strength, good plasticity and low hardness (about 15HB). Their biggest advantage is the ability to make connections in relatively low temperatures. Therefore it is possible to solder materials which are sensitive to overheating or in the direct proximity of such materials. Among soft solders the widest applications have Tin-Lead alloys although because of Lead content in above-mentioned alloys, Tin based solders with copper or silver additives are being more and more used.

Catalogue No.	Code	Composition (%)					Melting range SOL-LIQ					Corresponding standards	
		Sn	Pb	Ag	Cd	Other	170°C	190°C	200°C	250°C	300°C	DIN 1707	EN 29453
30 99 XXXXXX	Sn100	99,9								232			
30 80 XXXXXX	SnPb80/20	80	20				183		205			Sn80Pb20	
30 63 XXXXXX	SnPb63/37	63	37				183					Sn63Pb	S-Sn63Pb37
30 60 XXXXXX	SnPb60/40	60	40				183	190				Sn60Pb	S-Sn60Pb40
30 50 XXXXXX	SnPb50/50	50	50				183		215			Sn50Pb	S-Pb50Sn50
30 40 XXXXXX	SnPb40/60	40	60				183			235		Pb60Sn	S-Pb60Sn40
30 33 XXXXXX	SnPb33/67	33	67				183			242		PbSn33	
30 30 XXXXXX	SnPb30/70	30	70				183			255		PbSn30	S-Pb70Sn30
30 08 XXXXXX	SnPb8/92	8	92							280	305		S-Pb92Sn8
30 99 XXXXXX	Pb100		99,9								327		
30 95 XXXXXX	SnSb95/5	95				Sb 5			230	240		SnSb5	S-Sn95Sb5
30 67 XXXXXX	SnCu97/3	97				Cu 3			230	250		SnCu3	S-Sn97Cu3
30 99 XXXXXX	Cd82Zn16Ag			2	82	Zn 16				270	280	Cd82Zn16Ag2	
30 98 XXXXXX	Ag2Sn	98		2					221-225				
30 96 XXXXXX	Ag3,5Sn	96,5		3,5					221				S-Sn97Ag3
30 95 XXXXXX	Ag5Sn	95		5					221-235			SnAg5	
30 90 XXXXXX	Ag10Sn	90		10					221		300		
30 63 XXXXXX	Ag1,4SnPb	63	35,6	1,4			178					Sn63PbAg	
30 05 XXXXXX	Ag1,5SnPb	5	93,5	1,5						296	301		

Characteristic make-up

Cast ingots, bars and sticks	Various sizes
Solid wires	Ø 0,5 ... 3 mm
Flux-cored wires	Ø 0,5 ... 3 mm
Powder and paste	



To provide safe work procedures on brazing operations, we recommend use of:

- protective glasses DINS (chapter 04),
- protective gloves (chapter 04),
- filtroventilation devices (chapter 05).

1.8. Aluminum and magnesium based alloys



Alloys based on Magnesium and Aluminum are suitable for the TIG/MIG techniques. Used to join Aluminum and Magnesium based metals. Some alloys are also suitable for the Brazing technique (e.g. AlSi12).

Catalogue No.	Code	Composition (%)						Melting range SOL-LIQ				Corresponding standards		
		Al	Si	Mg	Mn	Zn	Zr	400°C	450°C	550°C	600°C	ISO 17672	AWS A5.8	EN 1044
35 12 XXXXXX	AlSi12	Bal	12	0,05	0,15	0,15				573	585	Al112	BAISi-4	Al104
35 98 XXXXXX	AlZn98	2				98		430	440			L-ZnAl2		
35 78 XXXXXX	AlZn78	22				78		441	471					

Characteristic make-up		
Rods	Ø 1,6 ... 5 mm	Length: 1 000 mm
Flux-cored rods	Ø 2 ... 5 mm	Only AlSi12 - AlZn98 - AlZn78
Wires	Ø 0,8 ... 3,2 mm	On spools DIN 300 i DIN 100
Make-up	Powder and paste	Rings, wires on spool flux cored, rods, strips, rolls, other shapes on request.
Different forms made of wires and strips		



1.9. Fluxes

It is usually necessary to employ a flux in the brazing process. Heating a metal can result in the growth of oxides and surface oxide embedment, which interferes with the proper wetting of the base surface. This is why oxides formation must be prevented.

Flux acts as an oxygen barrier to protect the surface against both, oxidation during heating up, and oxide embedment after the surface finish.

The presented range includes fluxes for Silver, Aluminum/Magnesium, and Soft Solder alloys, available in Powder, Paste and Liquid form.



Fluxes for silver based alloys									
Catalogue No.	Code	Melting range				Make-up		Standard	Remarks
		500°C			1000°C	Powder	Paste	EN 1045	
39 02 XXXXXX	FLUX AG1	550		800		X	X	FH 10	General purpose
39 02 XXXXXX	FLUX AG2	550		800		X		FH 10	General purpose – sticks easily to the rod
39 02 XXXXXX	FLUX AG3		600		850	X	X	FH 10	For high temperatures
39 02 XXXXXX	FLUX AG4	550		850		X	X	FH 10	General purpose – very wide range of temperature
39 02 XXXXXX	FLUX AG5		700		1000	X	X	FH 20	For very high temperatures
39 02 XXXXXX	FLUX AG6	550		850		X		FH 11	For aluminum alloys
39 02 XXXXXX	FLUX AG7	500		800		X	X	FH 10	General Purpose – Also for Stainless Steel
39 02 XXXXXX	FLUX AG8	550		800			X	FH 12	For Stainless Steel and Hard Metals
39 02 XXXXXX	FLUX AG11	500		800			X	FH 10	General Purpose. Also for Stainless Steel – for use with automatic flux applicator
39 02 XXXXXX	FLUX AG12	550		800			X	FH 12	For Stainless Steel and Hard Metal – for use with automatic flux applicator
39 02 XXXXXX	ANTIFLUX						X		Prevents wetting of brazing alloy, works as anti-spatter spray in welding

Aluminum fluxes						
Catalogue No.	Code	Melting range (°C)	Make-up		Standard	Remarks
			Powder	Paste	EN 1045	
39 02 XXXXXX	MOST FLUX AL1		X	X	FL 10	Brazing with AlSi12 alloys
39 02 XXXXXX	MOST FLUX AL3	550-650	X		FL 20	Autogenous welding of aluminum
39 02 XXXXXX	MOST FLUX AL4	550-650	X		FL 20	Autogenous welding of Al- Si i Al-Mg alloys
39 02 XXXXXX	MOST FLUX AL6			X		Brazing with zinc alloys

Packages	
Powder	Packages 0,1 / 0,25 / 0,5 / 1 / 10 / 20 kg
Paste	Packages 0,1 / 0,25 / 0,5 / 1 / 1,5 / 10 / 20 kg

Fluxes for copper brazing based on bronze alloys										
Catalogue No.	Code	Melting range				Make-up			Standard	Remarks
		700°C			1300°C	Powder	Paste	Phyn	EN 1045	
39 02 XXXXXX	MOST FLUX BR1		850	1100		X	X		FH 20	brazing with brass
39 02 XXXXXX	MOST FLUX BR4	700		1200		X	X		FH 21	for high temperatures
39 02 XXXXXX	MOST FLUX LI1							X	FH 21	for brass brazing with support of ethereal flux, low concentration
39 02 XXXXXX	MOST FLUX LI2							X	FH 21	for brass brazing with support of ethereal flux, medium concentration
39 02 XXXXXX	MOST FLUX LI3							X	FH 21	for brass brazing with support of ethereal flux, high concentration
39 02 XXXXXX	MOST FLUX LI1 ECO							X	FH 21	for brass brazing with support of ethereal flux, very low concentration, non-toxic

MOST FLUX LI1 ECO



MOST FLUX LI3



Liquid cylinders designed for vapor system brazing (Vaporizer)

The unit (cylinder) enables to introduce flux directly into the burner. By enrichment with flux, flame becomes intense-green and it protects the soldered elements from oxidation. Any special surface treatment is not required – brazed joints have smooth, neat texture.

1) Liquid cylinder for vapor system brazing (Vaporizer) type H

Consists of main tank. Equipped with inlet and outlet cylinder valve hose. Four valves to regulate the amount of flux introduced into the flame. Ideal for acetylene and hydrogen.

2) Liquid cylinder for vapor system brazing (Vaporizer) type B

Consists of main tank. Equipped with inlet and outlet valve hose. One valve to regulate the amount of flux introduced into the flame. Ideal for acetylene.



2. Applications of soldering consumables

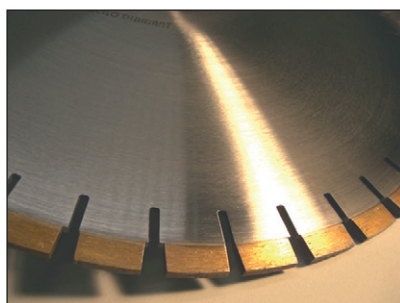
2.1. Soldering sintered carbides



Alloys for connections used in the process of diamond tools soldering.

The tools are used in the processing of wood, stone, cement, asphalt, etc.

The chart below shows which alloy can be used to connect sintered carbides with steel.



Catalogue no.	Code	Composition (%)									Melting range SOL-LIQ	Density	Tensile strength	Corresponding standards		
		Ag	Cu	Zn	Cd	Sn	Si	Ni	Mn	Other	(°C)	(g/cm³)	(kg/mm²)	ISO 17672	EN 1044	AWS A5.8-04
Silver alloys																
31 20 XXXXXX	Ag20	20	44	36			X				690-810	8,7	43		AG 206	
31 45 XXXXXX	Ag44	44	30	26							670-730	9,1	51	Ag204	AG 203	B Ag-15
31 55 XXXXXX	Ag45Sn	45	27	25,5		2,5					640-660	9,2	43	Ag145	AG 104	B Ag-36
31 49 XXXXXX	Ag49MnNi	49	16	23				4,5	7,5		625-705	8,9	55	Ag449	AG 502	B Ag-22
31 49 XXXXXX	Ag49MnNi/1	49	27	21				0,5	2,5		670-690	8,9				
31 50 XXXXXX	Ag50Ni	50	20	28				2			660-715	9	45	Ag450		B Ag-24
31 55 XXXXXX	Ag55Sn	55	21	22		2					630-660	9,4	44	Ag155	AG 103	
31 56 XXXXXX	Ag56InNi	56	27					2,5		In14,5	600-710				AG 403	
Copper sandwiched alloys - TRIMETALS																
31 49 XXXXXX	Ag49MnNi/1 TR	49	27,5	20,5				0,5	2,5		670-690	9				
Fluxes																
39 03 XXXXXX	MOST FLUX AG3	For high temperatures														
39 02 XXXXXX	MOST FLUX AG4	General purpose														
39 07 XXXXXX	MOST FLUX AG7	General purpose, also for stainless steel														
39 08 XXXXXX	MOST FLUX AG8	For stainless steel														
39 11 XXXXXX	MOST FLUX AG11	General purpose, also for stainless steel – for use with automatic flux applicator														
39 12 XXXXXX	MOST FLUX AG12	For stainless steel – for use with automatic flux applicator														
39 02 XXXXXX	ANTIFLUX	Antiflux – works as anti spatter spray in welding														



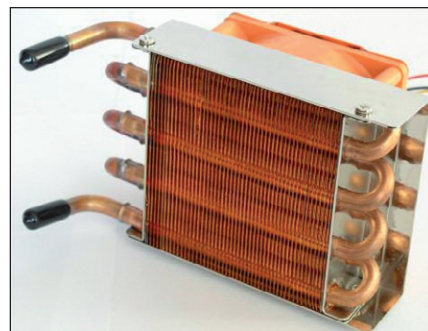
Catalogue No.	Code	Composition (%)									Melting range SOL-LIQ	Density	Tensile strength	Corresponding standards		
		Ag	Cu	Zn	Cd	Sn	Si	Ni	Mn	Other	(°C)	(g/cm³)	(kg/mm²)	ISO 17672	EN 1044	AWS A5.8-04
Solders without silver																
32 60 XXXXXX	Cu60Zn		60	Bal			X				875-895	8,4	40	Cu470a	CU 301	
32 59 XXXXXX	Cu59ZnSn		59	Bal		X	X				875-895	8,4	45	Cu470	CU 302	
32 59 XXXXXX	Cu59ZnSnMn		59	Bal		1	X	X	X		870-890	8,4	45	Cu681	CU 306	
32 59 XXXXXX	Cu59ZnAg	1	59	Bal		X	X		X		860-890	8,4	45			
32 59 XXXXXX	Super Cuprox	1	59	Bal		X	X		X							
32 48 XXXXXX	Cu48ZnNi10		48	Bal			X	10			890-920	8,7	54	Cu773	CU 305	RBCuZn-D
32 48 XXXXXX	Cu48ZnNi9Ag	1	48	Bal			X	9			890-920	8,7	54			
32 53 XXXXXX	Cu53ZnNi6		53	Bal			X	6			900-920		49			
32 97 XXXXXX	Cu97Ni3B		97					3		B 0,03	1081-1101	8,9		Cu186	CU 105	
32 87 XXXXXX	Cu87MnCo3		87						10	Co 3	980-1030	8,7				
32 85 XXXXXX	Cu85MnNi3		85					3	12		960-990	8,8				
32 58 XXXXXX	Cu58ZnMnCo2		57,5	38,5					2	Co 2	880-930	8,2				
32 59 XXXXXX	Cu99,9		99,9								1083	8,9	22		CU 101	
Fluxes																
39 02 XXXXXX	FLUX BR1	Brazeing with brass														
39 02 XXXXXX	FLUX BR4	For high temperatures														
39 02 XXXXXX	FLUX BR5	For very high temperatures														

Catalogue No.	Code	Composition (%)									Melting range SOL-LIQ	Density	Tensile strength	Corresponding standards	
		Ni	Cr	Fe	Si	B	C	P	Mn	Cu	(°C)	(g/cm³)	(kg/mm²)	EN 1044	AWS A5.8-04
Nickel based alloys for vacuum soldering															
35 55 XXXXXX	Ni1	Bal	14	4,5	4,5	3,1	0,7				1021-1052			NI 101	BNi-1
35 51 XXXXXX	Ni1a	Bal	14	4,5	4,5	3,1					977-1077			NI 1A1	BNi-1a
35 52 XXXXXX	Ni2	Bal	7	3	4,1	3					971-999			NI 102	BNi-2

2.2. Heat exchangers



Solders for the production of: heaters, air-conditioners, evaporators, different types of electrical equipment, condensers, compressors, refrigerators, etc.



Catalogue No.	Code	Composition (%)				Melting range SOL-LIQ	Standard	Remarks
		Ag	Cu	P	Sn	(°C)	EN 1044	
Copper-phosphorus alloys								
33 06 XXXXXX	CuP6		94	6		710-880	CP 203	Copper- copper and copper-brass joint-flux is not required allows to get nice, clean weld; without any flux or with a volatile flux
33 07 XXXXXX	CuP7		93	7		710-800	CP 202	
33 08 XXXXXX	CuP8		92	8		710-750	CP 201	
33 07 XXXXXX	CuP7Sn		86	7	7	650-700	CP 302	
34 02 XXXXXX	Ag2CuP	2	91,5	6,5		650-810	CP 105	alloys with the addition of silver for soldering of elements exposed to vibrations
34 05 XXXXXX	Ag5CuP	5	89	6		650-810	CP 104	
34 06 XXXXXX	Ag6CuP	6	87	7		650-740		
34 15 XXXXXX	Ag15CuP	15	80	5		650-800	CP 102	

Fluxes	
Code	Remarks
MOST FLUX AG4	For copper-brass joint
MOST FLUX LI1	Volatile flux for soldering with brass, low concentration
MOST FLUX LI2	Volatile flux for soldering with brass, medium concentration
MOST FLUX LI3	Volatile flux for soldering with brass, high concentration

Catalogue No.	Code	Composition (%)		Melting range SOL-LIQ	Remarks
		Al	Zn	(°C)	
Special solders					
35 98 XXXXXX	AlZn98	2	98	430-440	Copper-aluminum and brass-aluminum, available in coated version or with a flux inside.
35 12 XXXXXX	AlSi12	Bal	0,15	573-585	
35 78 XXXXXX	AlZn78	22	78	441-471	

Catalogue No.	Code	Composition (%)				Melting range SOL-LIQ	Standard	Remarks
		Ag	Cu	Zn	Sn	(°C)	EN 1044	
Silver based alloys								
31 34 XXXXXX	Ag34Sn	34	36	27,5		630-730	AG 106	
31 35 XXXXXX	Ag35	35	32	33	2,5	680-730		
31 40 XXXXXX	Ag40Sn	40	30	28		640-700	AG 105	
31 45 XXXXXX	Ag45Sn	45	27	25,5	2	640-660	AG 104	
31 55 XXXXXX	Ag55Sn	55	21	22	2,5	630-660	AG 103	For Stainless Steel
31 72 XXXXXX	Ag72Zn	72		28	2	710-730		Ammonia resistant

Fluxes	
Code	Remarks
FLUX AG1	General purpose
FLUX AG4	General purpose
FLUX AG7	General purpose and acid resistant steels

Catalogue No.	Code	Composition (%)							Melting range SOL-LIQ	Standard	Remarks
		Cu	Zn	Ag	Ni	Mn	Sn	Si	(°C)	EN 1044	
Brass											
32 60 XXXXXX	Cu60Zn	60	Bal					X	875-895	CU 301	Available also as coated and uncoated rods Cu59ZnAg is suitable for galvanized steel
32 59 XXXXXX	Cu59ZnSn	59	Bal					X	875-895	CU 302	
32 59 XXXXXX	Cu59ZnAg	59	Bal	1			X	X	860-890		
32 48 XXXXXX	Cu48ZnNi10	48	Bal		10			X	890-920	CU 305	
Fluxes											
39 02 XXXXXX	FLUX BR1	General purpose – powder and paste									
39 02 XXXXXX	FLUX LI2	For soldering with volatile flux, medium concentration									
39 02 XXXXXX	FLUX LI3	For soldering with volatile flux, high concentration									

2.3. Heating equipment, refrigeration plants, air-conditioning



Solders for production process and repairs in: refrigeration industry, air-conditioning, heating equipment, etc.



Catalogue No.	Code	Composition %			Melting range SOL-LIQ	Standard	Remarks
		Sn	Cu	Ag	(°C)	EN 1044	
Soft solders							
30 97 XXXXXX	SnCu97/3	97	3		230-250	S-Sn97Cu3	Lead-free alloy
30 95 XXXXXX	Ag3,5Sn	96,5		3,5	221	S-Sn97Ag3	Lead-free alloy
30 XX XXXXXX	Ag5Sn	95		5	221-235		
Fluxes							
39 02 XXXXXX	FLUX SN1	General purpose, available as liquid or paste					

Catalogue No.	Code	Composition %				Melting range SOL-LIQ	Standard	Remarks
		Ag	Cu	P	Sn	(°C)	EN 1044	
Copper-phosphors solders								
33 06 XXXXXX	CuP6		94	6		710-880	CP 203	copper-copper, copper-brass joint copper-copper joint, no need of flux, CuP7Sn available as rods coated by flux or with silver mixture, dedicated for elements exposed to vibrations
33 07 XXXXXX	CuP7		93	7		710-800	CP 202	
33 08 XXXXXX	CuP8		92	8		710-750	CP 201	
33 07 XXXXXX	CuP7Sn		86	7	7	650-700	CP 302	
34 02 XXXXXX	Ag2CuP	2	91,5	6,5		650-810	CP 105	
34 05 XXXXXX	Ag5CuP	5	89	6		650-810	CP 104	
34 15 XXXXXX	Ag15CuP	15	80	5		650-800	CP 102	
Fluxes								
39 02 XXXXXX	FLUX AG4	joint copper-brass						

Catalogue No.	Code	Composition %				Melting range SOL-LIQ	Standard	Remarks
		Ag	Cu	Zn	Sn	(°C)	EN 1044	
Silver based alloys								
31 34 XXXXXX	Ag34Sn	34	36	27,5	2,5	630-730	AG 106	Solder without Cadmium content, can come in contact with drinking water and food. Solder Ag55Sn for joint with stainless steel.
31 44 XXXXXX	Ag44	44	30	26		670-730	AG 203	
31 45 XXXXXX	Ag45Sn	45	27	25,5	2,5	640-660	AG 104	
31 55 XXXXXX	Ag55Sn	55	21	22	2	630-660	AG 103	
Fluxes								
39 02 XXXXXX	FLUX AG1	General purpose						
39 02 XXXXXX	FLUX AG4	General purpose, very wide range of temperature						
39 02 XXXXXX	FLUX AG7	General purpose, also for stainless steel						

Catalogue No.	Code	Composition %						Melting range SOL-LIQ	Standard	Remarks
		Cu	Zn	Ag	Mn	Sn	Si	(°C)	EN 1044	
Brass										
32 60 XXXXXX	Cu60Zn	60	Bal				X	875-895	CU 301	Available also as coated and uncoated rods Cu59ZnAg is suitable for galvanized steel.
32 59 XXXXXX	Cu59ZnSn	59	Bal			X	X	875-895	CU 302	
32 59 XXXXXX	Cu59ZnAg	59	Bal	1	X	X	X	860-890		
Fluxes										
39 02 XXXXXX	FLUX BR1	General purpose, powder or paste								

2.4. Measuring devices



Solders for industries: measuring devices, thermostats, manometers, hygrometers, etc.



Catalogue No.	Code	Composition %				Melting range SOL-LIQ	Corresponding standards		Remarks
		Sn	Cu	Ag	Pb	(°C)	DIN 1707	EN 29453	
Soft solders									
30 40 XXXXXX	SnPb40/60	40			60	183-235	Pb60Sn	S-Pb60Sn40	
30 60 XXXXXX	SnPb60/40	60			40	183-190	Sn60Pb	S-Sn60Pb40	
30 97 XXXXXX	SnCu97/3	97	3			230-250	SnCu3	S-Sn97Cu3	
30 95 XXXXXX	Ag3,5Sn	96,5		3,5		221		S-Sn97Ag3	
30 95 XXXXXX	Ag5Sn	95		5		221-235	SnAg5		
30 90 XXXXXX	Ag10Sn	90		10		221-300			
Fluxes									
39 02 XXXXXX	FLUX SN1	General purpose							
39 02 XXXXXX	FLUX SN2	For acid – resistant steel							

Catalogue No.	Code	Composition %					Melting range SOL-LIQ	Standard	Remarks
		Ag	Cu	Zn	Sn	Ni	(°C)	EN 1044	
Silver solders									
31 40 XXXXXX	Ag40Ni	40	30	28		2	670-780		For brazing in oven unit
31 40 XXXXXX	Ag40Ni/1	40	58			2	780-900		
31 40 XXXXXX	Ag40Sn	40	30	28	2		640-700	AG 105	For flame brazing, induction
31 45 XXXXXX	Ag44	44	30	26			670-730	AG 203	
31 45 XXXXXX	Ag45Sn	45	27	25,5	2,5		640-660	AG 104	
31 50 XXXXXX	Ag50Ni	50	20	28		2	660-715		
31 55 XXXXXX	Ag55Sn	55	21	22	2		630-660	AG 103	
31 56 XXXXXX	Ag56Sn	56	22	17	5		620-650	AG 102	
31 60 XXXXXX	Ag60	60	26	14			695-730	AG 202	
31 60 XXXXXX	Ag60Sn	60	23	14	3		620-685	AG 101	
31 60 XXXXXX	Ag60Sn/1	60	30		10		600-720	AG 402	For brazing in oven unit
31 72 XXXXXX	Ag72	72	28				780	AG 401	
Fluxes									
39 02 XXXXXX	FLUX AG1	General purpose							
39 02 XXXXXX	FLUX AG4	General purpose, wide range of temperatures							
39 02 XXXXXX	FLUX AG7	General purpose. For acid-resistant steel							

Catalogue No.	Code	Composition %				Melting range SOL-LIQ	Standard	Remarks
		Ag	Cu	P	Sn	(°C)	EN 1044	
Copper based alloys								
32 59 XXXXXX	Cu99,9		99,9			1083	CU 101	Paste cu99,9 for brazing in oven unit
33 07 XXXXXX	CuP7Sn		86	7	7	650-700	CP 302	Copper-copper Copper-brass joint
34 15 XXXXXX	Ag15CuP	15	80	5		650-800	CP 102	
Fluxes								
39 02 XXXXXX	FLUX AG4	Copper-brass joint						

2.5. Electromechanical devices



Solders for industries: electromechanical devices, current generators, transformers, heating elements, contacts, switches, etc.



Catalogue No.	Code	Composition %					Melting range SOL-LIQ
		Sn	Pb	Ag	Cd	Zn	(°C)
Soft brazing							
30 05 XXXXXX	Ag1,5SnPb	5	93,5	1,5			296-301
30 99 XXXXXX	Cd82Zn16Ag			2	82	16	270-280
Fluxes							
39 02 XXXXXX	FLUX SN6	Liquid					

Catalogue No.	Code	Composition %							Melting range SOL-LIQ	Standard	Remarks
		Ag	Cu	Zn	Sn	Cd	Ni	Other	(°C)	EN 1044	
Silver solders											
31 20 XXXXXX	Ag20	20	44	36				Si	690-810	AG 206	Solders with no Cadmium content
31 34 XXXXXX	Ag34Sn	34	36	27,5	2,5				630-730	AG 106	
31 40 XXXXXX	Ag40Sn	40	30	28	2				640-700	AG 105	
31 45 XXXXXX	Ag44	44	30	26					670-730	AG 203	
31 45 XXXXXX	Ag45Sn	45	27	25,5	2,5				640-660	AG 104	
31 55 XXXXXX	Ag55Sn	55	21	22	2				630-660	AG 103	
31 56 XXXXXX	Ag56Sn	56	22	17	5				620-650	AG 102	
31 60 XXXXXX	Ag60Sn	60	23	14	3				620-685	AG 101	
31 40 XXXXXX	Ag40Ni/1	40	58				2		780-900		Solders for oven brazing
31 49 XXXXXX	Ag49MnNi	49	16	23			4,5	Mn7,5	625-705	AG 502	
31 49 XXXXXX	Ag49MnNi/1 TR	49	27,5	20,5			0,5	Mn2,5	670-790		Trimetal- a strip dedicated for soldering of carbides
31 60 XXXXXX	Ag60Sn/1	60	30		10				600-720	AG 402	For brazing in oven
31 72 XXXXXX	Ag72	72	28						780-780	AG 401	
Fluxes											
39 02 XXXXXX	FLUX AG1	General purpose									
39 02 XXXXXX	FLUX AG4	General purpose, wide range of temperatures									
39 02 XXXXXX	FLUX AG7	General purpose, also for stainless steel									
39 02 XXXXXX	FLUX AG8	For stainless steel and hard metals									

Catalogue No.	Code	Composition %				Melting range SOL-LIQ	Standard	Remarks
		Ag	Cu	P	Sn	(°C)	EN 1044	
Copper-phosphors solders								
33 07 XXXXXX	CuP7Sn		86	7	7	650-700	CP 302	For copper-copper and copper-brass joint
34 02 XXXXXX	Ag2CuP	2	91,5	6,5		650-810	CP 105	For copper-copper joint flux is not required
34 05 XXXXXX	Ag5CuP	5	89	6		650-810	CP 104	
34 15 XXXXXX	Ag15CuP	15	80	5		650-800	CP 102	CuP7Sn available as coated rods as well
32 59 XXXXXX	Cu99,9	99,9				1083	CU 101	Copper paste for brazing in oven
Fluxes								
39 02 XXXXXX	FLUX AG4	Copper-brass joint						

2.6. Solar collectors



Catalogue No.	Code	Composition %				Melting range SOL-LIQ	Corresponding standards		Remarks
		Sn	Pb	Ag	Cu	(°C)	DIN 1707	EN 29453	
Soft solders									
30 97 XXXXXX	SnCu97/3	97			3	230-250	SnCu3	S-Sn97Cu3	
30 05 XXXXXX	Ag1,5SnPb	5	93,5	1,5		296-301			
30 95 XXXXXX	Ag5Sn	95		5		221-235	SnAg5		
30 50 XXXXXX	SnPb50/50	50	50			183-215	Sn50Pb	S-Pb50Sn50	
30 40 XXXXXX	SnPb40/60	40	60			183-235	Pb60Sn	S-Pb60Sn40	
Fluxes									
39 02 XXXXXX	FLUX SN1	General purpose, available as liquid and paste							

Catalogue No.	Code	Composition %				Melting range SOL-LIQ	Standard	Remarks
		Ag	Cu	P	Sn	(°C)	EN 1044	
Copper-phosphors solders								
33 06 XXXXXX	CuP6		94	6		710-880	CP 203	Copper-copper and copper-brass joint copper-copper joint without flux CuP7Sn available as coated rods for joint exposed to vibrations
33 07 XXXXXX	CuP7		93	7		710-800	CP 202	
33 08 XXXXXX	CuP8		92	8		710-750	CP 201	
33 07 XXXXXX	CuP7Sn		86	7	7	650-700	CP 302	
34 04 XXXXXX	Ag0,4CuP	0,4	93	6,6		650-810		
34 02 XXXXXX	Ag2CuP	2	91,5	6,5		650-810	CP 105	
34 05 XXXXXX	Ag5CuP	5	89	6		650-810	CP 104	
34 06 XXXXXX	Ag6CuP	6	87	7		650-740		
34 15 XXXXXX	Ag15CuP	15	80	5		650-800	CP 102	
Fluxes								
39 02 XXXXXX	FLUX AG4	For copper-brass joint						

Catalogue No.	Code	Composition %					Melting range SOL-LIQ	Standard	Remarks
		Ag	Cu	P	Sn	Cd	(°C)	EN 1044	
Silver solders									
31 40 XXXXXX	Ag40Sn	40	30	28	2		640-700	AG 105	Cadmium based solders Solders Ag55Sn for joint with stainless steel
31 45 XXXXXX	Ag45Sn	45	27	25,5	2,5		640-660	AG 104	
31 55 XXXXXX	Ag55Sn	55	21	22	2		630-660	AG 103	
31 56 XXXXXX	Ag56Sn	56	22	17	5		620-650	AG 102	
Fluxes									
39 02 XXXXXX	FLUX AG1	General purpose							
39 02 XXXXXX	FLUX AG4	General purpose, wide range of temperatures							
39 02 XXXXXX	FLUX AG7	General purpose, also for stainless steel							

2.7. Radiators



Solders for the production of: bathroom radiators.



Catalogue No.	Code	Composition %						Melting range SOL-LIQ	Standard	Remarks
		Cu	Zn	Ni	Mn	Sn	Si	(°C)	EN 1044	
Brass										
32 60 XXXXXX	Cu60Zn	60	Bal				X	875-895	CU 301	Available as uncoated or coated by flux solders
32 59 XXXXXX	Cu59ZnSn	59	Bal			X	X	875-895	CU 302	
32 59 XXXXXX	Cu59ZnSnMn	59	Bal	X	X	1	X	870-890	CU 306	
Fluxes										
32 59 XXXXXX	FLUX BR1	General purpose, powder or paste								
32 59 XXXXXX	FLUX LI1	Volatile flux for brass soldering, low concentration								
32 59 XXXXXX	FLUX LI2	Volatile flux for brass soldering, medium concentration								
32 59 XXXXXX	FLUX LI3	Volatile flux for brass soldering, high concentration								

Catalogue No.	Code	Composition %	Melting range SOL-LIQ	Standard	Remarks
		Cu	(°C)	EN 1044	
Copper paste					
32 59 XXXXXX	Cu 99,9	99,9	1083	CU 101	Copper paste for oven brazing

Catalogue No.	Code	Composition %					Melting range SOL-LIQ	Standard	Description	Remarks
		Ag	Cu	Zn	Cd	Sn	(°C)	EN 1044		
Silver solders										
31 40 XXXXXX	Ag40Sn	40	30	28		2	640-700	AG 105	Cadmium free solders Solder Ag55Sn for stainless steel	Available as coated or un-coated rods
31 45 XXXXXX	Ag45Sn	45	27	25,5		2,5	640-660	AG 104		
31 55 XXXXXX	Ag55Sn	55	21	22		2	630-660	AG 103		
Fluxes										
39 02 XXXXXX	FLUX AG1	General purpose								
39 02 XXXXXX	FLUX AG4	General purpose, wide range of temperatures								
39 02 XXXXXX	FLUX AG7	General purpose, also for stainless steel								

2.8. Tubular structures



Solders for the production of: steel furniture, bicycle and moped frames, etc.



Catalogue No.	Code	Composition %					Melting range SOL-LIQ	Tensile strength	Standard	Description	Remarks
		Ag	Cu	Zn	Sn	Si	(°C)	kg/mm²	EN 1044		
Silver solders											
31 05 XXXXXX	Ag5	5	55	40			820-890	48	AG 208	Available as coated rods	
31 2 0 XXXXXX	Ag20	20	44	36		X	690-810	43	AG 206		
31 40 XXXXXX	Ag40Sn	40	30	28	2		640-700	44	AG 105		
31 45 XXXXXX	Ag45Sn	45	27	25,5	2,5		640-660	43	AG 104		
31 55 XXXXXX	Ag55Sn	55	21	22	2		630-660	44	AG 103		
Fluxes											
39 02 XXXXXX	FLUX AG1	General purpose									
39 02 XXXXXX	FLUX AG4	General purpose, wide range of temperatures									
39 02 XXXXXX	FLUX AG7	General purpose, also for stainless steel									

Catalogue No.	Code	Composition %					Melting range SOL-LIQ	Tensile strength	Standard	Remarks
		Cu	Sn	Si	Mn	Ag	(°C)	kg/mm²	EN 1044 / DIN 1733	
Copper solders										
32 59 XXXXXX	Cu99,9	99,9					1083	22	CU 101	Available also as paste for oven brazing
32 59 XXXXXX	CuSn	Bal	0,8	X	X		1020-1050	22	SG-CuSn	
32 59 XXXXXX	CuAg	Bal			X	1	1070-1080	20	SG-CuAg	
32 59 XXXXXX	CuSi3	Bal		3	1		965-1035	35	SG-CuSi3	

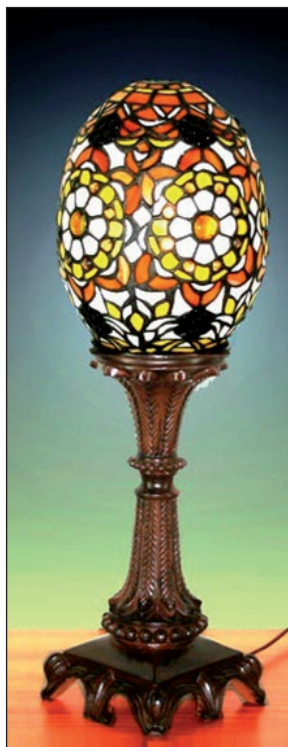
Catalogue No.	Code	Composition %							Melting range SOL-LIQ	Tensile strength	Standard	Description	Remarks	
		Cu	Zn	Ni	Ag	Mn	Sn	Si	(°C)	kg/mm²	EN 1044			
Brass														
32 60 XXXXXX	Cu60Zn	60	Bal					X	875-895	40	CU 301	Available as coated or uncoated rods		
32 59 XXXXXX	Cu59ZnSn	59	Bal					X	X	875-895	45			CU 302
32 59 XXXXXX	Cu59ZnSnMn	59	Bal	X		X	1	X	870-890	45	CU 306			
32 48 XXXXXX	Cu48ZnNi10	48	Bal	10				X	890-920	54	CU 305			
32 48 XXXXXX	Cu48ZnNi9Ag	48	Bal	9	1			X	890-920	54				
32 53 XXXXXX	Cu53ZnNi6	53	Bal	6				X	900-920	49				
32 59 XXXXXX	Cu59ZnAg	59	Bal		1	X	X	X	860-890	45		For galvanized steel		
Fluxes														
39 02 XXXXXX	FLUX BR1	General purpose, powder and paste												
39 02 XXXXXX	FLUX LI1	For soldering with volatile flux, low concentration												
39 02 XXXXXX	FLUX LI2	For soldering with volatile flux, medium concentration												
39 02 XXXXXX	FLUX LI3	For soldering with volatile flux, high concentration												

Catalogue No.	Code	Composition %				Melting range SOL-LIQ	Standard	Remarks
		Al	Si	Mg	Mn	(°C)	DIN 1044	
Aluminium								
35 12 XXXXXX	AlSi12	Bal	12	0,05	0,15	573-585	AlSi12	For aluminum brazing
Fluxes								
39 02 XXXXXX	FLUX Al 1	For soldering with als12 alloy						

2.9. Lamps



Solders for the production of: lamps, metal and brass accessories, musical instruments, etc.



Catalogue No.	Code	Composition %					Melting range SOL-LIQ	Standard	Remarks
		Ag	Cu	Zn	Sn	Si	(°C)	EN 1044	
Silver solders									
31 20 XXXXXX	Ag20	20	44	36		X	690-810	AG 206	Cadmium-free solders, Ag20 color is similar to brass color Solder Ag55Sn for stainless steel
31 45 XXXXXX	Ag45Sn	45	27	25,5	2,5		640-660	AG 104	
31 55 XXXXXX	Ag55Sn	55	21	22	2		630-660	AG 103	
31 60 XXXXXX	Ag60Sn	60	23	14	3		620-685	AG 101	
Fluxes									
39 02 XXXXXX	FLUX AG1	General purpose							
39 02 XXXXXX	FLUX AG4	General purpose, wide range of temperatures							
39 02 XXXXXX	FLUX AG7	General purpose, also for stainless steel							

Catalogue No.	Code	Composition %			Melting range SOL-LIQ	Corresponding standards		Remarks
		Cu	Pb	Ag	(°C)	DIN 1707	EN 1044	
Soft solders								
30 60 XXXXXX	SnPb60/40	60	40		183-190	Sn60Pb	S-Sn60Pb40	
30 95 XXXXXX	Ag5Sn	95		5	221-235	SnAg5		After soldering the color is similar to stainless steel color

Fluxes								
Catalogue No.	Code	Remarks						
38 02 XXXXXX	FLUX SN1	General purpose						
39 02 XXXXXX	FLUX SN2	For stainless steel						

Catalogue No.	Code	Composition %					Melting range SOL-LIQ	Standard	Remarks
		Ag	Cu	P	Sn	Cd	(°C)	EN 1044	
Silver solders									
31 40 XXXXXX	Ag40Sn	40	30	28	2		640-700	AG 105	Cadmium based solders. Solder Ag55Sn for joint with stainless steel
31 45 XXXXXX	Ag45Sn	45	27	25,5	2,5		640-660	AG 104	
31 55 XXXXXX	Ag55Sn	55	21	22	2		630-660	AG 103	
31 57 XXXXXX	Ag56Sn	56	22	17	5		620-650	AG 102	
Fluxes									
39 02 XXXXXX	FLUX AG1	General purpose							
39 02 XXXXXX	FLUX AG4	General purpose, wide range of temperatures							
39 02 XXXXXX	FLUX AG7	General purpose, also for stainless steel							

2.10. Jewellery



Solders for the production of: different kinds of silver wares.



Silver solders											
Catalogue No.	Code	Composition (%)					Melting range				
		Ag	Cu	Zn	Cd	Sn	600°C	700°C	800°C		
31 74 XXXXX	Ag74	74	14	8	4			720	765		
31 60 XXXXX	Ag60	60	26	14				695	730		
31 60 XXXXX	Ag60Sn	60	23	14		3	620	685			
31 55 XXXXX	Ag55Sn	55	21	22		2	630	660			
31 56 XXXXX	Ag56Sn	56	22	17		5	620	650			
Fluxes											
39 02 XXXXX	FLUX AG1	General purpose									
39 02 XXXXX	FLUX AG4	General purpose, wide range of temperatures									
39 02 XXXXX	FLUX AG7	General purpose, also for stainless steel									

Soft solders											
Catalogue No.	Code	Composition (%)				Melting range					
		Ag	Sn	Pb	Sb	100°C	200°C	300°C			
30 10 XXXXX	Ag10Sn	10	90				221	300			
30 95 XXXXX	SnSb95/5	95			5		230	240			
30 05 XXXXX	Ag5Sn	5	95				221	235			
30 XX XXXXX	Ag3,5Sn	3,5	96,5				221	300			
30 60 XXXXX	SnPb60/40		60	40		183	190				
Fluxes											
39 02 XXXXX	FLUX SN1	General purpose									