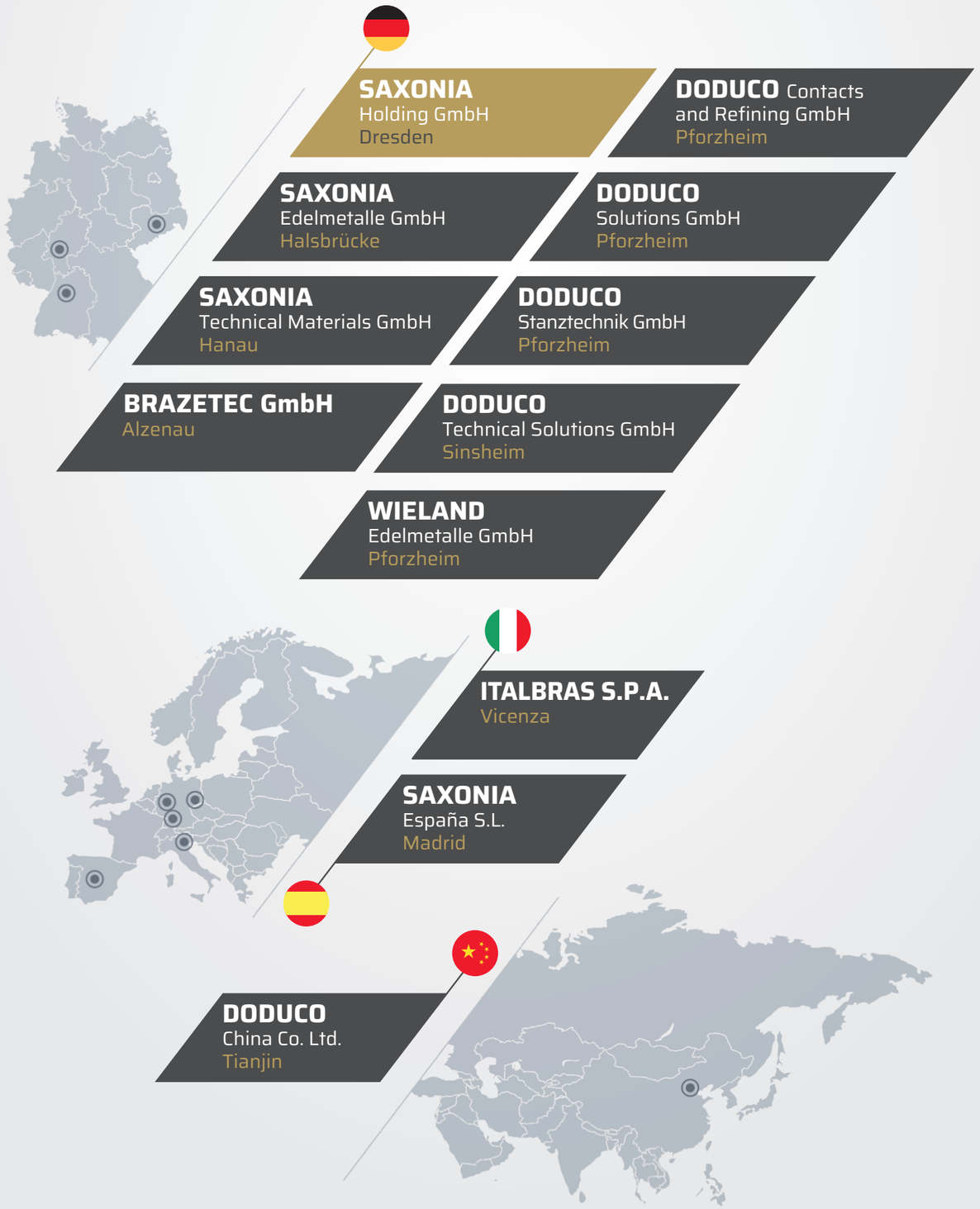
ITALBRAS®

BRAZING

BRAZING ALLOYS AND BRAZING FLUXES
BRAZING PASTES
SOFT SOLDERS AND SOFT SOLDER FLUXES
BRAZING ALLOYS AND FLUXES FOR ALUMINIUM

SAXONIA®

THE GROUP'S COMPANIES



CONTENTS

ABOUT US

We are go-to experts for the production and distribution of brazing alloys. The distribution of technical ceramic components for industrial use completes our activity.
Our experience in treating precious metals translates into cutting-edge products and services of the highest quality. We face both big and small challenges every day: we solve problems together, pursuing maximum customer satisfaction. We believe the satisfaction and safety of our team are key to our success. We became part of the SAXONIA Group in 2018.

PRODUCTS QUALITY

We aim to set high quality standards in the market with products that create value for our customers and our organization.

We offer consulting and training resulting from fifty years of experience.

We approach every commitment with responsibility, which in practice means reliability, flexibility and punctuality.

CERTIFICATIONS

The ISO 9001 process, ISO 14001 environmental and ISO45001 occupational health and safety management system certifications mark an essential milestone on our path to continuous improvement and environmental sustainability.

SUSTAINABILITY

We are firmly committed to sustainable growth: financial, social and environmental goals are a daily challenge for us, which we tackle tirelessly.

With in-house training, innovation projects and workforce cohesion, we aim to achieve excellence in products and services with the lowest environmental impact.

Economic performance, best workplace, eco-efficiency and stakeholder involvement are the basis of our thinking and acting. Our Sustainable Procurement Charter reflects our commitment to sustainable development in all areas of procurement. It's a key tool in helping us determine the quality of our suppliers and we would show a clear preference for those partners who are able to demonstrate a commitment to sustainable development.

The quality of our sustainability management system is periodically measured by Ecovadis, the most internationally accredited platform for corporate sustainability ratings. The analysis model adopted by Ecovadis verifies our performance in relation to 4 macro-areas: Environment, Labor Practices and Human Rights, Ethics and Sustainable Purchasing.

1975
Established as a manufacturer of brazing alloys under the name Rolling Silver

1987
Business registered as Italbras SpA

1995
Taken over by Degussa Italia

2001
Takes over and integrates all Degussa-Huels Italia precious metal divisions

2003
August, becomes part of the Umicore Group

2018
January, Italbras becomes part of the SAXONIA Group

SERVICE AND EXPERTISE

BRAZING AND SOLDERING, OUR GOAL

We are at the cutting edge in the production and sale of brazing and soldering alloys, pastes and fluxes of superior quality.

SPECIFIC KNOW-HOW, PRESENT AND FUTURE

Our decades of experience and exhaustive knowledge of brazing and soldering processes translate into technological supremacy. Our know-how extends to various industries and includes countless applications and a whole host of case histories.

A NEW CHALLENGE, EVERY DAY

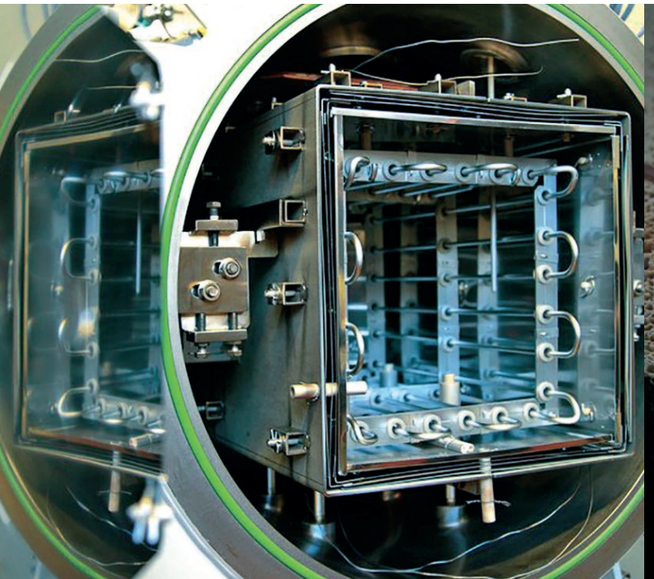
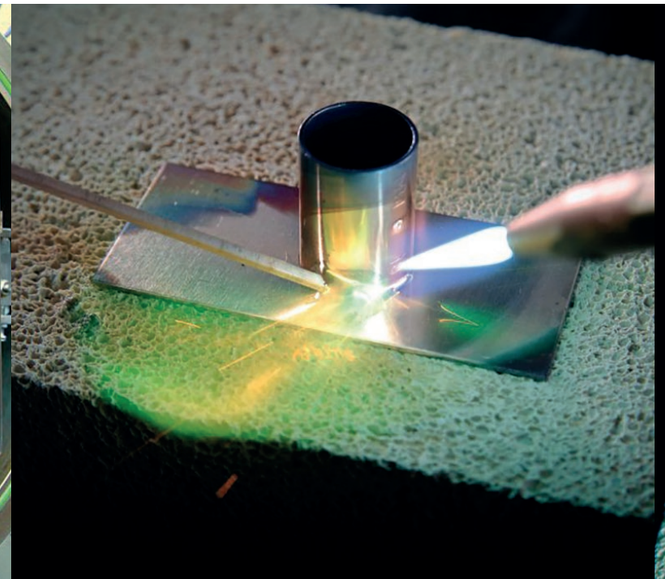
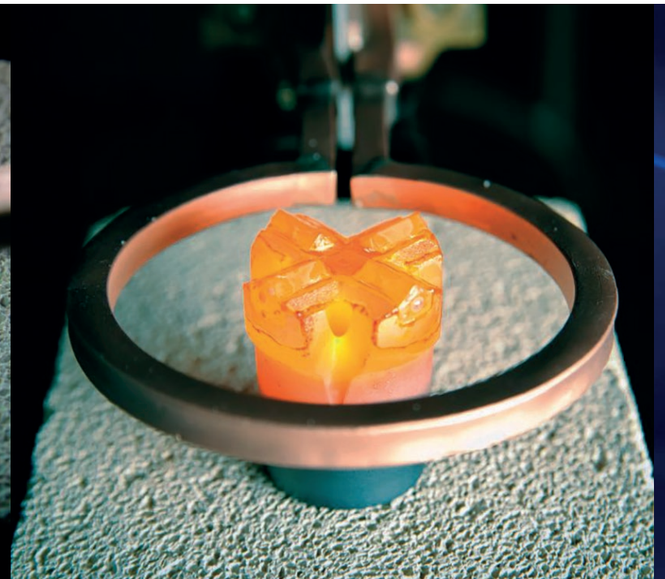
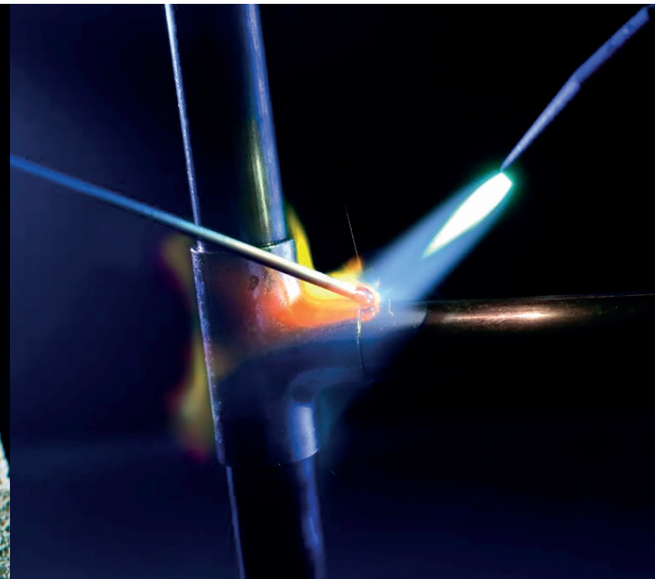
We tackle the most demanding challenges every day with internationally recognized professionalism and efficiency.

MULTIPLE MARKETS, A SINGLE PORT OF CALL

Satisfied returning customers include leading companies in a diversity of markets such as Automotive, Refrigeration, HVAC, Tools and Plumbing technology who come to us for solutions to with their brazing and soldering needs. We can provide extremely precise answers to your joining queries regarding metals, tungsten carbides and ceramics.

AT YOUR SIDE, EVERY DAY

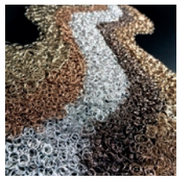
Our sales and logistics organization (housed in our Italian facility) can deliver prompt, effective technical support, in addition to reliable, flexible service with a high-quality product.

AVAILABLE FORMS

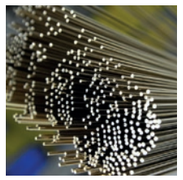
(F) WIRE*

Diameter: 0,25 up to 4,0
Form: coil or spool



(A) PREFORMS

rings - segments
multiform parts - discs
platelets - washers - stamped and multiform parts



(B) ROD*

Diameter: 0,4 up to 5,0
Length: 500 / custom

(P) POWDERS

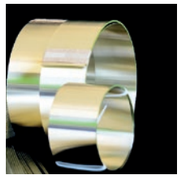
Grade 1 size 3318 / 1100 microns (µm)50 ÷ 100
Grado 2 size 400 / 3318 microns (µm)100 ÷ 350
Grado 3 size 225 / 3318 microns (µm)100 ÷ 490

(N) STRIP*

Thickness: 0,075 up to 0,5
Width: 1,5 up to 90

(PT) BRAZING PASTES

Pack size (in KG)
1 - up to - 25
Other forms: syringes

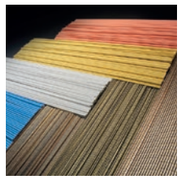


(T) SANDWICH*

Thickness: 0,25 up to 0,4
Width: 1,5 up to 70

FLUXES

Pack size (in KG)
0,1 - up to - 10



(R) COATED RODS*

Inside diameter: 1,5 - 2,0
Length: 500

* measures in mm

BRAZING ALLOYS & BRAZING FLUXES

Ag ALLOYS CADMIUM FREE

Cadmium-free brazing alloys find wide application in the Automotive industry for brazing fittings, bodywork and assorted construction parts.
The electronics industry is another market for our alloys. In the refrigeration and HVAC industry, Italbras alloys make flux-free brazing possible in various manufacturing categories associated with the production and distribution of heat energy.
In the plant construction sector, our whole range of silver-based alloys is used for the production of components, including the construction of pressure vessels, along with our furnace brazing materials.

APPLICATIONS

We produce specific brazing alloys for the following markets:
- Automotive
- Electronics
- Plumbing
- Air conditioning
- Heating
- Motor vehicles
- Fashion accessories
- Costume jewellery
- Eyewear
- Measuring and control technology

A FLUX COATED BRAZING RODS, CADMIUM FREE, ACCORDING ROHS DIRECTIVE

BRAZETEC ALLOY	%	melting range	working temperature	AVAILABLE FORMS
	Ag	°C	°C	R
6009U	60	600-730	720	√
5600U	56	620-655	650	√
5507U	55	630-660	660	√
5209U	52	780-880	880	√
4576U	45	640-680	670	√
4504U	45	665-745	745	√
4404U	44	675-735	730	√
4076U	40	650-710	690	√
3876U	38	650-720	720	√
3500U	35	685-755	-	√
3476U	34	630-730	710	√
3375U	33	680-750	-	√
3076U	30	665-755	740	√
3075U	30	680-765	750	√
2576U	25	680-760	750	√
2500U	25	700-790	780	√
2009U	20	690-810	810	√
1875U	18	690-810	-	√
1204U	12	800-830	830	√
503U	5	820-870	860	√

Flux-coated brazing alloys, environmentally friendly according to the RoHS directive and REACH regulation 494. The flux used is type FH10 A in compliance with standard ISO18496. The directions provided for the use of flux-free brazing alloys also apply to the use of their flux-coated counterparts.
We can produce alloys coated with different percentages of flux to meet your individual requirements.

ITALBRAS®

B BRAZING ALLOYS, CADMIUM FREE, ACCORDING REACH REGULATION 494

BRAZETEC ALLOY	%	%	%	%	%	melting range	working temperature	tensile strength on steel in Mpa (DIN EN 12797)		DENSITY	DIN EN	ISO	AVAILABLE FORMS				
	Ag	Cu	Zn	Sn	Si	°C	°C	S 235	E 295	g/cm³	1044	17672	F	B	N	A	P
7501	74	18	8	-	-	740-780	-	-	-	9,8	-	-	√	√	√	√	√
7291	72	-	28	-	-	710-730	730	-	-	8,43	-	-	√	√	√	√	√
7200	72	28	-	-	-	780	780	-	-	10	AG 401	Ag 272	√	√	x	√	√
6751	67,5	23,5	9	-	-	700-730	730	-	-	9,7	-	-	√	√	√	√	√
6009	60	30	-	10	-	600-730	720	-	-	9,8	AG 402	Ag 160	√	√	√	√	√
6002	60	23	14,5	2,5	-	620-685	680	-	-	9,6	AG 101	-	√	√	x	√	√
6001	60	26	14	-	-	695-730	710	-	-	9,5	AG 202	-	√	√	√	√	√
5600	56	22	17	5	-	620-655	650	350	430	9,5	AG 102	Ag 156	√	√	√	√	√
5507	55	21	22	2	-	630-660	660	350	430	9,4	AG 103	Ag 155	√	√	√	√	√
5209	52	46	-	2	-	780-880	880	-	-	9,7	-	-	√	√	√	√	√
4576	45	27	25,5	2,5	-	640-680	670	350	430	9,1	AG 104	Ag 145	√	√	√	√	√
4504	45	30	25	-	-	665-745	745	-	-	9,2	-	Ag 245	√	√	√	√	√
4404	44	30	26	-	-	675-735	730	400	480	9,1	AG 203	Ag 244	√	√	√	√	√
4076	40	30	28	2	-	650-710	690	350	430	9	AG 105	Ag 140	√	√	√	√	√
3876	38	31	29	2	-	650-720	720	-	-	9,1	-	Ag 138	√	√	√	√	√
3500	35	32	rest		0,15	685-755	-	-	-	9	-	Ag 235Si	√	√	√	√	√
3476	34	36	27,5	2,5	-	630-730	710	360	480	8,9	AG 106	Ag 134	√	√	√	√	√
3375	33	33,5	33,5	-	-	680-750	-	-	-	9	-	-	√	√	√	√	√
3076	30	36	32	2	-	665-755	740	360	480	8,8	AG 107	Ag 130	√	√	√	√	√
3075	30	38	32	-	-	680-765	750	380	430	8,9	AG 204	Ag 230	√	√	√	√	√
2576	25	40	33	2	-	680-760	750	360	480	8,7	AG 108	Ag 125	√	√	√	√	√
2500	25	40	35	-	-	700-790	780	380	430	8,8	AG 205	Ag 225	√	√	√	√	√
2009	20	44	35,85	-	0,15	690-810	810	380	430	8,7	AG 206	Ag 220	√	√	√	√	√
1875	18	46	36	-	-	690-810	-	-	-	8,6	-	-	√	√	√	√	√
1204	12	48	39,85	-	0,15	800-830	830	380	430	8,5	AG 207	Ag 212	√	√	√	√	√
503	5	55	39,85	-	0,15	820-870	860	350	400	8,3	AG 208	Ag 205	√	√	√	√	√

Our silver-based brazing alloys qualify as environmentally friendly as they do not contain metals deemed hazardous for the workplace, according to the RoHS directive and REACH regulation 494. The alloys can generally be used for service temperatures ranging from -200°C up to +200°C. They can be used for brazing any type of steel, copper and its alloys, or nickel and its alloys. When brazing stainless steel, the zinc in the alloy can result in corrosion issues and so, in specific cases, we recommend using the zinc-free alloy. Alloys that do not contain tin are particularly good for withstanding dynamic loads.

BLUEBRAZE ALLOYS

BlueBrazes are silver alloys with excellent flow properties and a low melting point. They are suitable for joining any type of steel, copper and copper alloys, or nickel and nickel alloys, and can be applied using any brazing and heating method.

APPLICATIONS

- Air conditioning
- Refrigeration
- Heating
- Tools

ADVANTAGES

- Silver content by 10% to 21% lower than standard alloys
- Same brazing temperature as standard alloys
- Lower density means, for the same kg, you get more meters of brazing alloy than you would with standard alloys

C BLUEBRAZE ALLOYS AIR-CONDITIONING AND REFRIGERATION MARKET

BRAZETEC BLUEBRAZE ALLOYS (air-conditioning and refrigeration market)	%	%	%	%	%	%	%	melting range according DSC	working temperature	tensile strength on steel in Mpa (DIN EN 12797)		DENSITY	DIN EN	ISO	AVAILABLE FORMS				
	Ag	Cu	Zn	Mn	Sn	Si	In	°C	°C	S 235	E 295	g/cm³	1044	17672	F	B	N	A	P
3510	35	32,6	20	10	2	0,4	-	680-700	700	320	420	8,6	-	-	√	√	√	√	√
3010	30	37,8	20	10	2	0,2	-	690-730	730	350	430	8,4	-	-	√	√	√	√	√
2410	24	43,7	20	10	2	0,3	-	690-750	750	330	480	8,4	-	-	√	√	√	√	√
2010	20	42,8	25	10	-	0,2	2	710-765	765	300	440	8,3		-	√	√	√	√	√

BlueBrazes 3510, 3010, 2410 and 2010 are an alternative to standard BrazeTec silver alloys 4576, 4076, 3476 and 3076 with the same brazing temperature and same high-quality characteristics but with a silver content reduced by 10%. In addition, they have a lower density, meaning that, for the same number of kg of material purchased, you get at least 5.5% more material.

D COATED BLUEBRAZE ALLOYS AIR-CONDITIONING AND REFRIGERATION MARKET

COATED BRAZETEC BLUEBRAZE ALLOYS (air-conditioning and refrigeration market)	%	%	%	%	%	%	%	melting range according DSC	working temperature	AVAILABLE FORMS
	Ag	Cu	Zn	Mn	Sn	Si	In	°C	°C	R
3510U	35	32,6	20	10	2	0,4	-	680-700	700	√
3010U	30	37,8	20	10	2	0,2	-	690-730	730	√
2410U	24	43,7	20	10	2	0,3	-	690-750	750	√
2010U	20	42,8	25	10	-	0,2	2	710-765	765	√

The flux used is type FH 10 in compliance with standard ISO 18496. The directions provided for the use of flux-free brazing alloys also apply to the use of their flux-coated counterparts. We can produce alloys coated with different percentages of flux to meet your individual requirements.

E BLUEBRAZE ALLOYS TOOLS MARKET

BLUEBRAZE ALLOYS (tool market)	%	%	%	%	%	%	melting range according DSC	working temperature	shear strength in Mpa carbide K10/steel 1.2210	DENSITY	DIN EN	ISO	AVAILABLE FORMS					
	Ag	Cu	Zn	Mn	Ni	In	°C	°C		g/cm³	1044	17672	F	B	N	A	T	P
2810	28	39	20	10	1	2	680-760	710	>250	8,5	-	-	√	√	√	√	x	√
28/Cu	28	39	20	10	1	2	680-760	710	>150	8,7	-	-	x	x	x	√	√	x
28/Cu^{plus}	28	39	20	10	1	2	680-760	710	>180	8,7	-	-	x	x	x	√	√	x

BlueBraze 2810, 28/Cu and 28Cuplus alloys have been developed specially for applications in the industrial tool market. Silver content has been reduced by 21% compared to the most widely used alloy in the market (ISO 17672: Ag 449), without the need to change parameters in the existing brazing process.
The new BlueBraze alloys have a working temperature of 710 °C, which ensures that brazing features excellent capillary action without damaging the microstructure of the base materials (e.g. steel and hard metal). The cut resistance of the tool brazed with the new alloys is equal to or greater than resistance values encountered using the market's main standard alloys.

CuP-AgCuP ALLOYS

We supply a full range of brazing alloys and fluxes and help you choose the right product as well as optimize your production process.
Copper-phosphorus and silver-copper-phosphorus alloys are essential in the refrigeration and HVAC industry.
In recent decades, this field has been at the centre of a major evolution, evolving into a branch of industry of global importance.
This is why we are constantly developing new brazing alloys for components of refrigeration and air-conditioning circuits, tackling the challenges thrown up by new refrigerants and new types of systems.

APPLICATIONS

- Air-conditioning systems
- Heat exchangers
- Heating systems
- Tapware

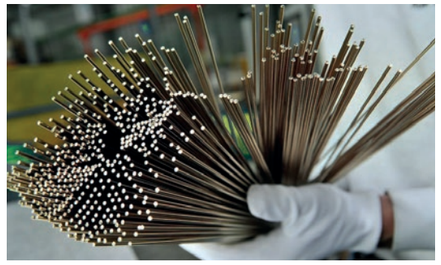
BRASS AND BRONZE ALLOYS

ITALBRAS®

We supply a full range of brass and bronze brazing alloys.
Brass and bronze alloys are particularly suitable for brazing galvanized iron, plated steels and cast iron, nickel and its alloys for use in conjunction with flux.

APPLICATIONS

- Iron piping and structures



F PHOSPHORUS-CONTAINING BRAZING ALLOYS FOR COPPER AND COPPER ALLOYS

BRAZETEC ALLOY	%	%	%	%	%	melting range	working temperature	tensile strength in Mpa (DIN EN 12797)	DENSITY	DIN EN	ISO	AVAILABLE FORMS				
	Ag	Cu	P	Sn	Si	°C	°C		g/cm³	1044	17672	F	B	N	A	P
S 18	18	75	7	-	-	645	650	250	8,4	CP 101	CuP 286	√	√	x	√	√
S 15	15	80	5	-	-	645-800	700	250	8,4	CP 102	CuP 284	√	√	√	√	√
S 10	10	rest	6	-	-	650-750	720	-	8,3	-	-	√	√	x	√	√
S 6	6	87	7	-	-	645-720	-	-	8,25	-	CuP 283	√	√	x	x	√
S 5 special	5	rest	6	-	0,001-0,05	645-815	710	250	8,2	CP 104	CuP 281[a]	x	√	x	x	x
S 5	5	89	6	-	-	645-815	710	250	8,2	CP 104	CuP281[a]	√	√	√	√	√
S 5	5	89	6	-	-	645-815	710	250	8,2	-	CuP 281	√	√	√	√	√
S 2 special	2	rest	6,3	-	0,001-0,05	645-825	740	250	8,1	CP 105	CuP 279	x	√	x	x	x
S 2	2	91,7	6,3	-	-	645-825	740	250	8,1	CP 105	CuP 279	√	√	√	√	√
S 2 AS	2	rest	7	-	-	643-788	732	250	8,1	-	CuP 280	√	√	x	x	x
S 606	0,6	93,2	6,2	-	-	710-870	-	250	8,1	-	-	x	√	x	x	x
S 805	0,5	92	7,5	-	-	710-870	-	250	8,1	-	-	x	√	x	x	x
S 802	0,2	91,9	7,9	-	-	715-875	-	250	8,1	-	-	x	√	x	x	x
S 94	-	93,8	6,2	-	-	710-890	760	250	8,1	CP 203	CuP 179	√	√	x	√	x
S 93 special	-	rest	7	-	0,001-0,05	710-820	730	250	8,05	CP 202	CuP 180	x	√	x	x	x
S 93	-	93	7	-	-	710-820	730	250	8,05	CP 202	CuP 180	√	√	x	√	x
S 92	-	92,2	7,8	-	-	710-770	720	250	8	CP 201	CuP 182	√	√	x	√	x
S 86	-	86,2	6,8	7	-	650-700	700	250	8	CP 302	CuP 386	√	√	x	√	x

Phosphorus-containing Brazing Alloys for Copper and Copper Alloys Phosphorus-containing brazing alloys can generally be used for service temperatures ranging from -55°C to +150°C. They were specially developed for joining copper with copper, or copper with its alloys (brass, bronze). When copper is brazed with copper, there is no need to use flux given the alloy's phosphorus content. Brazing copper with copper alloys instead requires the use of flux.
The use of these alloys is not recommended for producing joints that are in contact with sulphur: if sulphuric acid were to form, it would damage the joints brazed with this type of alloy. In addition, the use of these alloys is not recommended for brazing nickel alloys and steel as intermediate phases can form that make the joint fragile. Alloys S2 and S94 are DVGW approved for the installation of copper pipes.

G BRASS AND BRONZE ALLOYS

BRAZETEC ALLOY	%	%	%	%	%	%	%	%	melting range	DENSITY	ISO	DIN EN	AVAILABLE FORMS		
	Cu	Zn	Ni	Sn	P	Si	Mn	Fe	°C	g/cm³	17672	1044	F	B	A
BR6	93,3	-	-	6,5	0,19	-	-	-	910-1040	8,7	Cu 922	CU 201	√	√	√
BR12	87,8	-	-	12	0,2	-	-	-	825-990	8,8	Cu 925	CU 202	√	√	√
OT560	60	38,42	-	0,35	-	0,32	0,85	-	880-900	8,4	-	-	√	√	x
OTSi	59	rest	-	0,62	-	< 0,2	-	< 0,2	800-840	8,4	-	-	√	√	x
OT506	56,5	38,5	4,6	-	-	0,3	0,3	-	860-910	8,7	-	-	x	√	x
OT510	50,25	39,3	9,5	-	-	0,27	0,3	-	900-930	8,7	-	-	x	√	x

ALLOYS FOR TOOLS AND HARD METALS

The combination of hard metals and steel supports and the high performance demanded by the tool industry drive us to keep looking for new solutions.
The development of multi-layer tri-metal brazing materials and their ensuing evolution make work processes that much easier, while also ensuring tools have a longer service life.

H SPECIAL BRAZING ALLOYS FOR HARD METAL AND TOOL BRAZING

BRAZETEC ALLOY	%	%	%	%	%		melting range	working temperature	shear strength in Mpa (DIN EN 12797)	DENSITY	DIN EN	ISO	AVAILABLE FORMS				
	Ag	Cu	Zn	Mn	Ni	Altro	°C	°C		g/cm³	1044	17672	F	B	N	A	P
6488	64	26	-	2	2	6 In	730-780	770	150-300	9,6	-	-	√	√	√	√	x
5662	56	19	17	-	-	5Sn / 3Ga	608-630	630	150-250	9,3	-	-	√	√	x	x	x
5603	56	27,25	-	-	2,25	14,5 In	600-710	710	-	9,6	AG 403	Ag 456[a]	√	√	x	x	x
5081	50	20	28	-	2	-	660-715	710	-	9,3	-	Ag 450	√	√	√	√	√
4900A	49	27,5	20,5	2,5	0,5	-	670-690	690	250-300	8,9	-	-	√	√	√	√	√
4900	49	16	23	7,5	4,5	-	680-705	690	250-300	8,9	AG 502	Ag 449	√	√	√	√	√
4911	39	rest	24,5	5	1,5	1 Sn	670-720	710	-	9	-	-	√	√	√	√	√
4085	40	30	28	-	2	-	660-780	-	-	9	-	Ag 440	√	√	√	√	√
2700	27	38	20	9,5	5,5	-	680-830	830	150-300	8,7	AG 503	Ag 427	√	√	√	√	√
21/80	-	86	-	12	2	-	970-990	990	200-300	8,8	-	Cu 595	√	√	√	√	x
21/68	-	87	-	10	-	3 Co	990-1030	1020	200-300	8,8	-	-	√	√	√	√	x

Brazing alloys for joining hard metals and/or metals with poor wettability, such as: Tungsten, Molybdenum, Tantalum, Chromium.

APPLICATIONS

• Tools for cutting wood, stone and metal

I TRI-METAL BRAZING ALLOYS FOR HARD METAL AND TOOL BRAZING

BRAZETEC ALLOY	%	%	%	%	%		melting range	working temperature	shear strength in Mpa (DIN EN 12797)	DENSITY	NOTES	AVAILABLE FORMS	
	Ag	Cu	Zn	Mn	Ni	In	°C	°C		g/cm³		T	A
49/Cu	49	27,5	20,5	2,5	0,5	-	670-690	690	150-300	9	Intermediate copper layer	√	√
49/Cu^{plus}	49	27,5	20,5	2,5	0,5	-	670-690	690	200-300	9	Increasing of shear strength of 20% in comparison to 49Cu	√	√
49/NiN	49	27,5	20,5	2,5	0,5	-	670-690	690	150-300	9	Nickel net sandwich brazing alloy	√	√
49/Cu 17	49	27,5	20,5	2,5	0,5	-	670-690	690	150-300	9	Intermediate partially increased copper layer	√	√
49/Cu 13	49	27,5	20,5	2,5	0,5	-	670-690	690	150-300	9	Intermediate increased copper layer	√	√
49/CuNiFe	49	27,5	20,5	2,5	0,5	-	670-690	690	150-300	9	Intermediate CuNi-Fe layer	√	√
64/Cu	64	26	-	2	2	6	730-780	770	150-300	9,6	Suitable for TiN-coating, intermediate copper layer	√	√
Cu/NiN	-	100	-	-	-	-	1085	1100	200-300	8,9	Nickel net sandwich brazing alloy	√	√

Tri-metal brazing alloys were developed to absorb the metals' internal stress, which forms during cooling following the brazing process. Said stress occurs due to the various metals having different thermal expansion coefficients. The tri-metal alloys' plastic deformation effectively cancels out this stress.

ALLOYS FOR CERAMICS

We supply a full range of alloys for brazing ceramics. Our products are tested to work at the high temperatures typically associated with these special applications.

J TITANIUM-ACTIVATED BRAZING ALLOYS FOR BRAZING CERAMICS

BRAZETEC ALLOY	%	%	%	%	melting range	working temperature	DENSITY	SPECIAL APPLICATIONS	AVAILABLE FORMS			
	Ag	Cu	In	Ti	°C	°C	g/cm³		F	B	N	A
CB 2	96	-	-	4	970	1000-1050	10,3	Ceramic, ceramic/metal-connections, graphite, sapphire, ruby	√	√	√	√
CB 4	70,5	26,5	-	3	780-805	850-950	9,9		√	√	√	√
CB 5	64	34,2	-	1,8	780-810	850-950	9,9		√	√	√	√
CB 6	98,4	-	1	0,6	948-959	1000-1050	10,3	Silicon nitride	√	√	√	√

Active brazing alloys require a brazing temperature of at least 850°C for joining to ceramics. Higher temperatures can improve brazing and the materials' wettability pure argon or vacuum is used as the brazing atmosphere. When using a vacuum atmosphere, the brazing temperature must not exceed 900/1000°C to avoid the silver evaporating.

BRAZING FLUXES

We supply a whole range of brazing fluxes, pickling agents and anti-fluxes: fluxes for silver alloys, brass, bronze and alloys for tools in liquid, powder or paste form. The flux must be chosen based on the brazing alloy's working temperature and the type of base material to be joined. It is designed to remove surface oxides and protect the base materials from oxidation during the heating stage of the brazing process. It allows surface wetting and promotes distribution of the brazing alloy for smoother, free-flowing application.

APPLICATIONS

- Air conditioning
- Heating
- Plumbing
- Eyewear
- Tools
- Fashion accessories
- Electronics
- Installers
- Automotive

K BRAZING FLUXES

FLUX BRAZETEC	STATUS	effective temperature range °C	ISO 18496	USES	COMMENTS
D	Powder	550-850	FH10 A	Steel, non-ferrous metals for special use	Mix with water to make it spreadable
D98	Powder	550-800	FH10 A	Steel, Cu, Cu alloys, Ni, Ni alloys	Mix with water to make a paste
D99	Powder	550-800	FH10 A	Steel and non-ferrous metals	
F	Paste	550-800	FH10 B	Suitable to keep the color of brass during the brazing process	Suitable for flame and induction brazing
FN/E	Paste	750-1000	FH20 B FH20 A		Used for high temperatures
	Powder				
FN/V	Paste	550-800	FH10 B	Steel and-ferrous metals	
H	Paste	550-970	FH10 B FH10 A	Heavy metals	Universal
	Powder				
H 80	Paste	550-850	FH10 B	Cemented carbides, steels, mild steel, Cu, Cu alloys, Ni, Ni alloys	Surface brazing: suitable for induction brazing and brazing times of less than 30 seconds
H 86	Paste	550-850	FH10 B	Cemented carbides, steels, Cu, Cu alloys, Ni, Ni alloys	Surface brazing: suitable for induction brazing and brazing times of less than 30 seconds, for automatic brazing and for brazing vertical joints
H 28	Paste	580-940	FH10 B	Steels, Cu, Cu alloys, Ni, Ni alloys	Automatic brazing: suitable for brazing vertical joints
H 280	Paste	520-850	FH10 B	Steels, Cu, Cu alloys, Ni, Ni alloys	Surface brazing: suitable for dispenser application
N1/T	Powder	550-800	FH10 A		Universal
N2/E	Powder	550-800	FH10 A		Universal
OC/V	Powder	550-800	FH10 A	Steel, Ni, Ni alloys	Spectacles sector
RS/A	Liquid	550-700	FH10 C	Cu, Cu alloys, steels, Ni alloys	Spectacles sector
SUPER 1	Powder	550-800	FH10 A		Universal
L	Paste	490-730	FH11 B	For heavy metals containing up to 10% Al	
H 285	Paste	520-910	FH12 B	Steels, cemented carbides, Cu, Cu alloys, Ni, Ni alloys	Suitable for dispenser application and for brazing tungsten carbides
H 900	Paste	520-850	FH12 B	Cemented carbides, stainless steels	Suitable for dispenser application
SPEZIAL H	Paste	520-1030	FH12 B	Stainless steels, carbides, special materials, diamond tools for stone	
S	Paste	650-1050	FH20 B	Steels, cemented carbides, Ni, Ni alloys	Used for high temperatures
OT/A PLUS	Powder	750-1100	FH21 A	Steels, Cu, Cu alloys, Ni alloys	
GF56	Liquid	-	-	vaporized by flame	56% concentration
GF70	Liquid	-	-	vaporized by flame	70% concentration

Flux selection is determined by the base material and the alloy's working temperature. The working temperature and melting range must match the flux's active range.

L ANTI-FLUXES

ANTIFLUX BRAZETEC	STATUS	TYPES OF BRAZING	USES	HEAT SOURCE
ASV antiflux	Paste	Soldering and brazing even at high temperature	Used to contain alloy capillarity	Air, protective gas, vacuum

BrazeTec Anti Flux is used to contain alloy capillarity and to avoid, with a precise selective, the wetting of the alloy on the surface where the alloy is not requested.

BRAZING PASTES

In addition to alloys in solid form, we also offer paste brazing alloys. Brazing paste is a blend of metal brazing alloy powder, flux and binder that comes in a homogenized, ready-to-use mixture. Polymers and additives stop the liquid part separating from the solid part and give the brazing paste its fluid properties.

We can offer pastes tailored to suit the application method due to be employed. We have an extensive range of binders and brazing pastes for developing products that can be adapted to suit different processes.

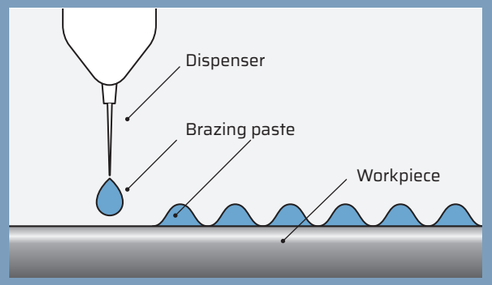
Brazing pastes are particularly suitable for automated applications as they are easy to integrate into the production process. They are versatile for both large-scale application and detail work, enabling pinpoint use.

APPLICATION PROCESSES

Pastes can be applied using different methods:

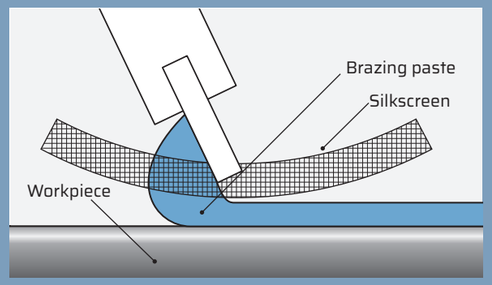
DISPENSING

It is used with high viscosity pastes, the dispensing system is formed by a compressed air piston or through worm screw. This system is very precise so it is possible to concentrate a large quantity of paste also on single points.



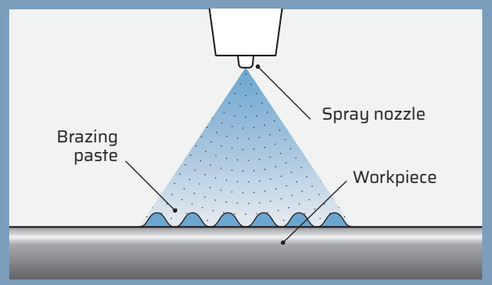
SCREEN PRINTING

It is used with high viscosity pastes, indicated for pieces of metal with geometries with accurate contours on sub metallic layer (layer thickness 30-600 µm).
This system allows to optimize the consumption of brazing paste.



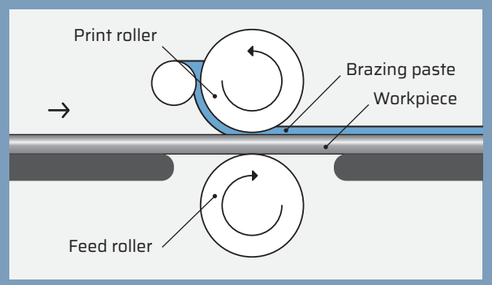
SPRAYING

It is used with low viscosity pastes. Suitable for large flat surfaces. The pre application system needs to use a normal spray gun commercially available.
The thickness of the layer of brazing alloy applied is between 15 and 75 µm, this application system is specially used for series production.



ROLLER-COATING

It is used with medium viscosity pastes. The system is used to cover flat surfaces or fins.
The thickness of the applied brazing alloy layer is between 70 and 120 µm, this application system is specially used for single pieces or rolls of base materials to be joined.



PASTE BRAZING ALLOYS

In addition to alloys in solid form, we also offer paste brazing alloys. Brazing paste is a blend of metal brazing alloy powder, flux and binder that comes in a homogenized, ready-to-use mixture.
Polymers and additives stop the liquid part separating from the solid part and give the brazing paste its fluid properties.

M NICKEL-BASED BRAZING PASTES

BRAZETEC ALLOY	%	%	%	%	%	%	melting range	working temperature	DIN EN	ISO	ATM	SOLVENT BASED	WATER BASED	AVAILABLE FORM
	Ni	Cr	Si	B	P	Fe	°C	°C	1044	17672				
BrazeTec 897 ML442	76	14	-	-	10	-	890	980	NI 107	Ni 710	A, B, C	P, S	D, S	√
BrazeTec 1002 ML4121	82,4	7	4,5	3,1	-	3	970-1000	1050	NI 102	Ni 620	A, B	P, R, S	D, S	√
BrazeTec 1080 ML4127	73,9	14	4,5	3,1	-	4,5	980-1070	1175	NI 1A1	Ni 610	A, B	P, S	-	√
BrazeTec 1090	60	30	4	-	6	-	980-1040	1090	-	-	A, B, C	R	D, S	√
BrazeTec 1130	72	18	8	-	2	-	1050-1090	1080	-	-	A, B, C	-	D	√
BrazeTec 1135 ML4116	70,9	19	10,1	-	-	-	1080-1135	1190	NI 105	Ni 650	A, B, C	P, R, S	D, S	√

A = dry hydrogen, B = vacuum, C = H_2N_2 -gas atmospheres (dew point -30°C), D = dispenser, E = exothermic atmosphere, P = screen printing, R = roller, S = spray

With their innovative composition, our Nickel-based brazing pastes lend themselves to application using any of the possible methods:
- screen-printing
- spraying
- dipping
- roller-coating
- using dispensers
- syringing

Nickel-based brazing pastes are mainly used in the production of heat exchangers (EGR coolers) in the automotive industry.

N SILVER-BASED BRAZING PASTES

BRAZETEC ALLOY	%	%	%	%	%	%	melting range	working temperature	DIN EN	ISO	APPLICATIONS	AVAILABLE FORM
	Ag	Cu	Zn	Mn	Sn	Ni	°C	°C	1044	17672		
ML572	72	28	-	-	-	-	780	780	AG 401	Ag 272	Any, Steel, Copper-Ni and Ni-Alloys	√
BrazeTec D5600	56	22	17	-	5	-	620-655	650	AG 102	Ag 156	Any, Steel, Copper-Ni and Ni-Alloys	√
BrazeTec D4900	49	16	23	7,5	-	4,5	680-705	690	AG 502	Ag 449	Cemented carbides	√

Silver-based brazing pastes can be used in the brazing of: steel, copper and its alloys, or nickel and its alloys. They can be distributed using automated systems or by means of the screen-printing process. When it comes to stainless steel brazing, zinc-containing pastes can result in corrosion issues, and hence we recommend using a zinc-free alloy. Silver-based brazing pastes usually contain flux and are thus ready to use. Nonetheless, we can also supply pastes without flux to cater to specific needs.

O COPPER-BASED BRAZING PASTES FOR FURNACE BRAZING

BRAZE-TEC ALLOY	%	%	%	melting range	working temperature	DIN EN	ISO	ATM	APPLICATIONS	AVAILABLE FORMS
	Cu	Sn	P	°C	°C	1044	17672			
ML100	99,9	-	-	1083	1120	CU 101	Cu 110	A, B, C, D	Mild steels, carbon steel, stainless steel or cemented carbides.	√
ML104	96	4	-	960-1060	1090	-	-	A, B, C, D	Non-joined and low-joined steels.	√
ML106	94	6	-	910-1040	1060	-	-	A, B, C, D	Non-joined, low-joined and mid-joined steels, as well as high-joined steels and Cr and CrNi steels. Good resistence to corrosion (e.g. seawater).	√
ML937	94	-	6	710-890	850	-	-	A, C	Copper and copper based alloys. It is not allowed to use this paste for joining steel, nickel and nickel based alloys, because of brittleness arising from phosphorus.	√
ML200	88	12	-	820-990	1040	-	-	A, B, C, D	Copper, non and low-joined steels.	√
ML986	86	7	7	650-700	840	-	-	A, C	Copper and copper based alloys. It is not allowed to use this paste for joining steel, nickel and nickel based alloys, because of brittleness arising from phosphorus.	√
ML320	80	20	-	800-890	950-1000	-	-	A, B, C, D	Copper and copper based alloy with melting point > 1000°C, as well as steel-copper and stainless steel-copper. This paste is not recommended for joining steel to steel because of brittleness.	√

A = dry hydrogen, B = vacuum, C = H_2N_2 -gas atmospheres (dew point -30°C), D = exogas

Copper-based furnace-brazing pastes offer versatile use: their distinctive trait is their easy dispensing, meaning they can be used in various protective atmospheres. They find wide application in the automotive and heat exchanger industries.

P TITANIUM-ACTIVATED BRAZING PASTES FOR BRAZING CERAMICS

BRAZETEC ALLOY	%	%	%	melting range	working temperature	DENSITY	APPLICATIONS	AVAILABLE FORM
	Ag	Cu	Ti	°C	°C	g/cm³		
CB 10	64,8	25,2	10	780-805	850-950	~3,9	Ceramic, ceramic/metal-connections, graphite, sapphire, ruby	√
CB 11	90	-	10	970	1000-1050	~3,3		√

Active brazing pastes have a very high metal content and are suitable for distribution using dispensers and by means of screen-printing.

SOLDERING ALLOYS & SOLDERING FLUXES

We supply Soldering alloys and pastes used in the installation sector. Our tin-based alloys are RoHS compliant.
Our products are made from high-purity raw materials and are required to pass strict quality controls. We have specific fluxes with impressive deoxidizing properties for fast and smooth brazing in various industrial production applications, both for manual operations and in automated stations.

APPLICATIONS

- Installations
- Plumbing
- Electronics
- Lighting
- Electrical circuits

Q SOLDERING PASTES FOR SOLDERING IN THE INSTALLATION SECTOR

BRAZETEC ALLOY	%	%	%	melting range	ISO	ISO	NOTE	AVAILABLE FORM
	Sn	Cu	Ag	°C	9454	9453		
Degufit® 3000	97	3	-	227-310	3.1.1.4	402	Use with BrazeTec 3 alloy	√
Degufit® 4000	rest	-	3,2	221-224	3.1.1.4	702	Use with BrazeTec 4 alloy	√

R SOLDERING ALLOYS FOR SOLDERING IN THE INSTALLATION SECTOR

BRAZETEC ALLOY	%	%	%	melting range	ISO	Suitable for soft soldering plumbing technology		ALTERNATIVE PROCESSING WITH FLUX DIN EN 29454-1 3.1.1/SOFT SOLDER PASTE	AVAILABLE FORMS	
	Sn	Cu	Ag	°C	9453	Tube material	Fitting material		F	B
3	97	3	-	227-310	402	Copper	Copper, Brass	Soldaflux® 7000	√	x
							Red Copper	Degufit® 3000		
4	rest	-	3,2	221-224	702	Copper	Copper, Brass	Soldaflux® 7000	√	x
							Red Copper	Degufit® 4000		
Darifix 3	97	3	-	227-310	402	Soft soldering of copper in construction plumbing (gutters, downpipes, etc.)		Soldaflux® 7000	x	√

Soldering alloys can be used for joining copper and its alloys, brass, steel and stainless steel.

S SOLDAMOLL SPECIAL SOLDERING ALLOYS

BRAZETEC ALLOY	%	%	%	%	melting range	DENSITY	shear strength in Mpa			electrical conductivity	ISO	APPLICATIONS	AVAILABLE FORMS			
	Sn	Cu	Ag	Sb	°C	g/cm³	Cu	OT	S235	m/Ωmm²	9453		F	B	N	A
Soldamoll® 210	99	1	-	-	270-290	7,3	-	-	-	7,6	-	-	√	√	x	√
Soldamoll® 210A (with acid flux core)	99	1	-	-	270-290	-	-	-	-	-	-	-	√	√	x	√
Soldamoll® 210C (with rosin flux core)	99	1	-	-	270-290	-	-	-	-	-	-	-	√	√	x	√
Soldamoll® 220	96,5	-	3,5	-	221	7,3	30	20	25	7,5	703	Excellent wettability; suitable for plumbing	√	√	√	√
Soldamoll® 220A (with acid flux core)	96,5	-	3,5	-	221	-	-	-	-	-	-	-	√	√	x	√
Soldamoll® 220C (with rosin flux core)	96,5	-	3,5	-	221	-	-	-	-	-	-	-	√	√	x	√
Soldamoll® 230	97	3	-	-	227-310	7,3	30	20	25	7,5	402	-	√	√	√	√
Soldamoll® 230A (with acid flux core)	97	3	-	-	227-310	-	-	-	-	-	-	-	√	√	x	√
Soldamoll® 230C (with rosin flux core)	97	3	-	-	227-310	-	-	-	-	-	-	-	√	√	x	√
Soldamoll® 235	95	-	-	5	230-240	7,2	30	20	25	6,2	201	-	√	√	x	√
Soldamoll® 240	95	-	5	-	220-240	7,5	30	20	25	7,5	-	-	√	√	x	√
Soldamoll® 240A (with acid flux core)	95	-	5	0	220-240	-	-	-	-	-	-	-	√	√	x	√
Soldamoll® 300	90	-	10	-	221-300	7,5	30	20	25	7,5	-	-	√	√	x	√

Soldering alloys can be used for joining copper and its alloys, brass, steel and stainless steel.

T SOLDAFLUX SOLDERING FLUXES

BRAZETEC FLUX	effective temperature range	ISO	RESIDUE TYPE	RESIDUE SOLUBILITY	APPLICATIONS
	°C	9454			
Soldaflux® 7000	150-400	3.1.1.4	Limited corrosion	Water	Carbon steel, non-ferrous metals, copper tube installation
Soldaflux® K	150-450	3.1.1.4	Highly corrosive	Water	Carbon steel, non-ferrous metals
Soldaflux® Z	150-450	3.1.1.4	Highly corrosive	Water	Stainless steel
RS/M	150-400	-	Highly corrosive	Distilled water	Carbon steel, non-ferrous metals

Soldering fluxes can be corrosive or non-corrosive, depending on the type of application.

BRAZING ALLOYS AND FLUXES FOR ALUMINIUM

BRAZING ALLOYS AND FLUXES FOR ALUMINIUM

Brazing alloys for aluminium find wide application in the Automotive and HVAC industries. In some cases, they even allow aluminium-to-copper and aluminium-to-steel joints. They can be used in furnace or torch brazing and fluxes can be corrosive or non-corrosive.

APPLICATIONS

- Heat exchangers
- Frames
- Pan bottoms
- Fittings

U BRAZING ALLOYS FOR ALUMINIUM

ALUBRAZE ALLOY	%	%	%	melting range	working temperature	DENSITY	DIN EN	ISO	AVAILABLE FORMS				
	Al	Si	Zn	°C	°C	g/cm³	1044	17672	F	B	N	A	P
L88/12	88	12	-	575-585	590-610	2,65	AL 104	Al 112	√	√	x	√	√
L98/02	<5	<7,5	Rest	400-480	450	-	-	-	√	√	x	√	x

V BRAZING PASTES FOR ALUMINIUM

ALUBRAZE PASTE	%	%	%	melting range	working temperature	DENSITY	DIN EN	ISO	AVAILABLE FORM
	Al	Si	Zn	°C	°C	g/cm³	1044	17672	
P98/02	<5	<7,5	Rest	400-480	450	-	-	-	√

Alubraze brazing alloys and pastes for aluminium can be used for torch brazing or controlled-atmosphere furnace brazing.
They can be used for joining: aluminium with aluminium, aluminium with steel, in some cases, even aluminium with copper.

W FLUXES FOR ALUMINIUM

FLUX	effective temperature range	ISO	GENERAL INFORMATION
	°C	18496	
30/70	520-660	FL10 A	Powder flux for aluminium and aluminium alloys with a 2% max of other elements. Flux residue is corrosive (to use with alloy L88/12).
32/80	570-660	FL20 A	Powder flux for aluminium and aluminium alloys with a 2% max of other elements. Flux residue is not corrosive (to use with alloy L88/12).
F32/80 CS	400-480	-	Paste flux for aluminium, aluminium alloys and mixed junctions (to use with alloy Alubraze L98/02)

Fluxes for aluminium can be corrosive or non-corrosive, depending on the specific application.

ACCESSORIES

ITALBRAS

The mat and the abrasive sponges are useful accessories for brazing and to carry out safely and with the maximum efficiency in the brazing process.

APPLICATIONS

- protection of joint parts, machinery or surfaces (mat)
- preparation of joints before the process brazing (sponges)

X BRAZETEC MAT PROTECTION

PRODUCT	DIMENSIONS in mm	NOTES ON APPLICATION
MAT carbon fibers	500x330	It can resist till the temperature of 600 °C(outer layer) of 1000°C(inner carbon fiber layer). It is used as protection from brazing flame.

BrazeTec thermal protection Mat is without osbestos, manufactured of carbon fibers of very high quality, has remarkable sealing properties.
Constituted by a double layer of carbon fibers inside with a sheet of aluminum, allows to reduce the transmission of heat.

Y BRAZETEC ABRASIVE SPONGES WITHOUT METAL CONTENT

PRODUCT	PACKAGING	APPLICATIONS
ABRASIVE SPONGES	10 pcs	Long lasting, resistant to solvents and can be used multiple times. Can be cleaned easily after use.

BrazeTec abrasive sponges are indicated to clean the surfaces of metals, in particular the ends of the copper tube before brazing.
Not contain metal, quickly abrasive cleaning without scratching.

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