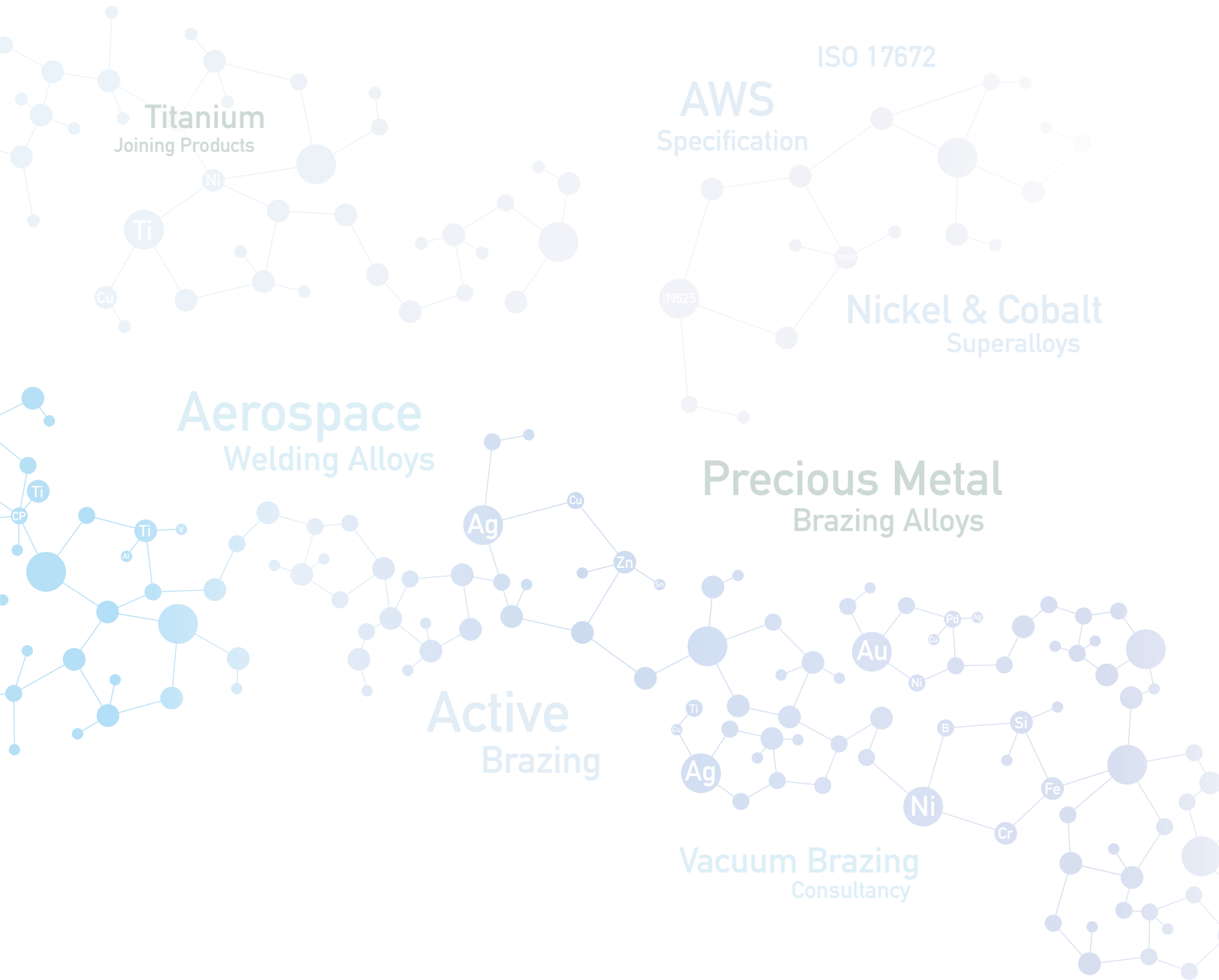


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# VBC Meta Braze™

Brazing Product Line



**Titanium**  
Joining Products

ISO 17672  
**AWS**  
Specification  
**Nickel & Cobalt**  
Superalloys

**Aerospace**  
Welding Alloys

**Precious Metal**  
Brazing Alloys

**Active**  
Brazing

**Vacuum Brazing**  
Consultancy



vbcgroup

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  - Furnace Brazing Accessories

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Application Driven  
Product Solutions

Technical Support  
& Consultancy

ISO9001 & AS 9100  
Quality Accreditations

Products Research  
& Development

# Brazing Products

Our product portfolio covers the complete range of brazing materials available today. Meta-Braze™ brazing products are VBC Group's own premium brand of brazing products. Working with long-standing supply partners, VBC Group is also able to provide technical brazing solutions for our customers. We are able to recommend leading-brand products, unique or novel products and a range of associated brazing products such as stop off compounds, binders and fluxes.

We also have manufacturing capability for bespoke brazing pastes, predominantly producing aerospace nickel brazing pastes.





## Meta-Braze™ Brazing Product Range

### Brazing Alloys

- Meta-Braze™ Nickel Brazing Alloys
- Meta-Braze™ Copper Phos Brazing Alloys
- Meta-Braze™ Gold Brazing Alloys
- Meta-Braze™ Copper Brazing Alloys
- Meta-Braze™ Palladium Brazing Alloys
- Meta-Braze™ Aluminium Brazing Alloys
- Meta-Braze™ Silver Brazing Alloys (V1 grade)
- Meta-Braze™ Titanium Brazing Alloys
- Meta-Braze™ Silver Brazing Alloys
- Meta-Braze™ Active Brazing Alloys

### Associated Brazing Products

- Metallic Honeycomb
- Paste Dispensing Consumables
- Pre-Sintered Pre-forms (PSPs)
- Furnace Brazing Accessories
- Stop off Compounds
- Meta-Braze™ Brazing Flux

### Brazing Product Forms

- Rods
- Strips
- Wire
- Foil
- Powder
- Brazing Paste
- Preforms
- Rings
- Paste
- Tapes
- Pen
- Coated Rods

\*Not all products are available in the forms shown. Check availability with VBC Group.

### Product Identification and Packaging

Special identifications such as bespoke flagging or colour coding of rods are available on brazing products.


Customised packaging options are available to ensure our customers receive the pack size they require and the product is delivered to the required quality.

# Brazing Products

## Meta-Braze™ Nickel Based Brazing Alloys



**Product Uses and Applications:** Nickel brazing products used today in the aerospace, automotive and nuclear industries. In these applications they would typically be used to join stainless steel and high temperature superalloys.

Key Products	Trade Name	Ni	Cr	Fe	B	Si	P	C	W	Melting Range °C	AMS	AWS A5.8	ISO 17672 2024	Standard Forms
Meta-Braze™ 4775	Nicrobraz® 125	Bal	14	4.5	3.1	4.5	-	0.7	-	980-1060	4775	BNi-1	Ni 600	
Meta-Braze™ 4776	Amdry™ 915	Bal	13	4.5	2.7	4.5	-	-	-	950-1127	-	-	-	
Meta-Braze™ 4776M	Nicrobraz® LC	Bal	14	4.5	3.1	4.5	-	-	-	980-1070	4776	BNi-1a	Ni 610	
Meta-Braze™ 4777	Nicrobraz® LM	Bal	7	3.0	3.1	4.5	-	-	-	970-1000	4777	BNi-2	Ni 620	
Meta-Braze™ 4778	Nicrobraz® 130	Bal	-	0.5	3.1	4.5	-	-	-	980-1040	4778	BNi-3	Ni 630	
Meta-Braze™ 4779	Nicrobraz® 135	Bal	-	1.5	1.8	3.5	-	-	-	980-1070	4779	BNi-4	Ni 631	
Meta-Braze™ 4782	Nicrobraz® 30	Bal	19	-	-	10.1	-	-	-	1080-1135	4782	BNi-5	Ni 650	
Meta-Braze™ 4310	Nicrobraz® 10	Bal	-	-	-	-	11	-	-	875	-	BNi-6	Ni 700	
Meta-Braze™ 4770	Nicrobraz® 50	Bal	14	-	-	-	10.1	-	-	890	-	BNi-7	Ni 710	
Meta-Braze™ 4795	Nicrobraz® 150	Bal	15	-	3.5	-	-	-	-	1055	-	BNi-9	Ni 612	
Meta-Braze™ 4720	Nicrobraz® 170	Bal	11.5	3.5	2.5	3.5	-	0.48	16	970-1105	-	BNi-10	Ni 670	Special Forms
Meta-Braze™ BNi-11	Nicrobraz® 171	Bal	10.4	3.5	2.5	3.8	-	0.4	12	970-1095	-	BNi-11	Ni 671	
Meta-Braze™ BNi-12	Nicrobraz® 51	Bal	25	-	-	-	10	-	-	880-950	-	BNi-12	Ni 720	
Meta-Braze™ BNi-14	Nicrobraz® 31	Bal	22	-	-	6.5	4	-	-	980-1070	-	BNi-14	Ni 741	
Meta-Braze™ BNi-15	Nicrobraz® 152	Bal	30	-	-	4	6	-	-	980-1030	-	BNi-15	Ni 740	
Meta-Braze™ BNi-16	Nicrobraz® 33	Bal	29	-	-	6.5	6	-	-	990-1105	-	BNi-16	Ni 742	
Meta-Braze™ BCo-1	Nicrobraz® 210	17	19	-	0.8	8	-	0.4	Bal-Co	1120-1150	4783	BCo-1	Co 900	

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## Meta-Braze™ Wide Gap Braze Powders and Paste Products



**Product Uses and Applications:** Wide Gap Braze Products are used today in the repair of gas turbines in industrial and aerospace applications. Products typically incorporate a powder that acts as a braze and a powder of the parent metal or of compatible metallurgical composition (often a stainless steel or high temperature super-alloy). In general these products are manufactured to customer requirements.

Key Products	Trade Name	Product Forms
Meta-Braze™ 6002	Mar M 002	
Meta-Braze™ 6001	WG1	
Meta-Braze™ 4313	Nicrogap™ 108	

## Meta-Braze™ Pre-Sintered Pre-forms (PSPs)



VBC Group supply Morgan Pre-Sintered Preforms (PSP™) used to dimensionally restore and repair cracks on worn jet engines, components for aerospace and industrial applications, such as high pressure, gas turbine vanes. PSP™ is a customized blend of superalloy and braze powders in either a plate form or specific shape which allows selective build-up of worn surfaces. Extrudable paste allows for application in difficult to reach areas and a brushable paint form is used for sealing deep or narrow cracks or even micro-cracks. PSPs™ are available in a flat plate, cut preforms, tapered and curved preforms and a 3-Dimensional bushing, which is used to restore worn holes or bores.

Typical Braze Alloys used in Pre-Sintered Preforms			
AD914	DF-3	T800	HS 188
AMS 4776	DF-4B	SA650 (GE Only)	MarM 247
AMS 4778	DF-5	Inco 939	Rene 142
DF-6	S57B	Hastelloy X	MarM 509B
IN 718B			

Trade Marks: Nicrobraz®, Nicrogap™ and Stop-off™ are trademarks of Wall Colmonoy. Amdry™ is a trademark of Oerlikon Metco. VBC Group is able to provide these and other nickel braze products. Aside from this, VBC Group also provides its own brand of this type of product for global distribution.

# Associated Brazing Products



## Meta-Braze™ Metallic Honeycomb for Gas Turbine Engine Seals

VBC Group can supply metallic honeycomb which is approved by the major aero engine OEMs. It is available in ready to braze form with pre-loaded tape applied. VBC Group offers technical consultancy in this area of brazing technology.

Key Products	Product Forms
HS214, 230 Hast-X, Hast-S Inconel, Stainless Steel	Segments and rings (straight and chamfer), annular segments, multi-stepped cross sections and net-shaped components.

## Meta-Braze™ Stop off Compounds

A variety of stop off compounds are available including Wall Colmonoy Stop-off™ and Morgan Stopyt™. They should be selected according to the parent metals being brazed and the form in which the product will be applied. These parting compounds prevent flow of molten filler metal into areas where it is not needed.

Key Products	Recommended Use	Product Forms
Green Stop-off™	General purpose for any metal or brazing process.	 
Yellow Stop-off™	Controlled atmosphere furnace work.	
White Stop-off™	As a parting compound for furnace use.	
Blue Stop-off™	High temps and vacuum. Ti, Zr and superalloys.	
Red Stop-off™	For furnace use. Chemically soluble after brazing.	
Stopyt™	Stop-off compound for Ti, Zr and superalloys.	

## Meta-Braze™ Brazing Paste Dispensing Systems and Consumables

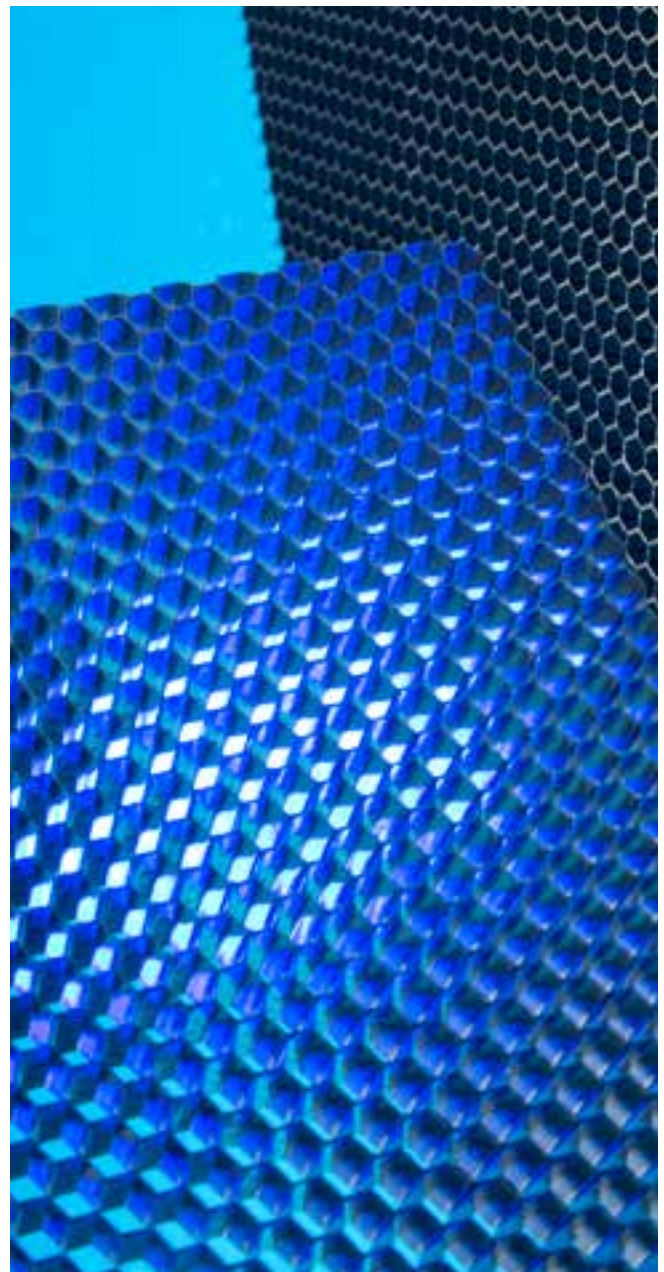
VBC Group supplies pneumatic dispensing control units that are simple to use and enable repeatable application of brazing paste deposits. The air pressure, needle gauge and pulse-time control the size of the braze paste deposit.

Key Products	Product Forms
Dispensing Unit	Supplied as a kit
Paste cartridges, needles and tips.	Packs of 10 - Bags of 200

## Meta-Braze™ Furnace Brazing Accessories

VBC Group are able to supply furnace brazing accessories such as thermal insulating paper to separate parts in a furnace and thermocouples for measuring the furnace temperature. We offer a refining service for Rh/Pt thermocouples.

Key Products	Product Forms
Fiberfrax™ 550 Paper	Supplied in rolls
Type R, Type S and Type K thermocouples	Metal sheathed / clad thermocouples manufactured to customer specifications
















# Brazing Products

## Meta-Braze™ Gold Based Brazing Alloys

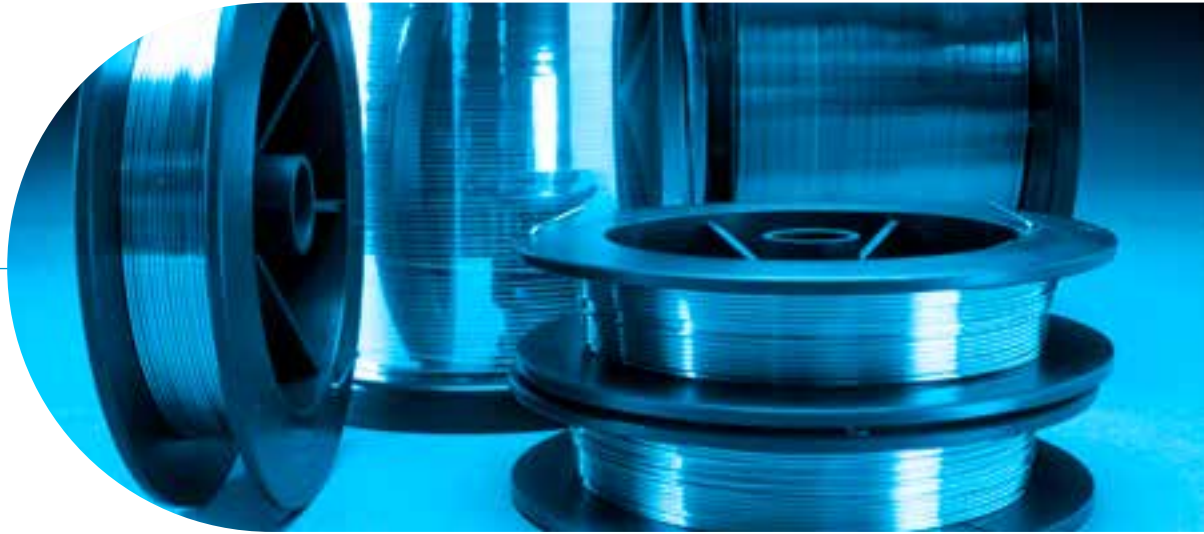


**Product Uses and Applications:** High purity gold containing brazing alloys find use in a variety of applications including electronic components, imaging equipment, aerospace, oil and gas and chemical. The alloys in this range are normally selected because of their ability to withstand chemical attack and retain strength at elevated temperature or because they can be produced in ultra pure V1 grade sometimes called 'vacuum tube grade'.

Key Products	Trade Name	Au	Cu	Ni	Ag	Pd	Mn	Melting Range °C	AMS	AWS A5.8	EN1044 1999	ISO 17672 2024	Product Forms
Meta-Braze™ Au 800	80%Au/20%Cu	80	20	-	-	-	-	890	-	BAu-2	-	Au 800	
Meta-Braze™ Au 081	Nicoro® 80	81.5	16.5	2	-	-	-	910-925	-	-	-	-	
Meta-Braze™ Au 625	62%Au/38%Cu	62.5	37.5	-	-	-	-	930-940	-	-	AU102	Au 625 V1	
Meta-Braze™ Au 827	Nioro®	82	-	18	-	-	-	950	4787	BAu-4	AU105	Au 827 V1	
Meta-Braze™ Au 503	50%Au/50%Cu	50	50	-	-	-	-	955-970	-	-	-	Au 503	
Meta-Braze™ Au 375	37.5%Au/62.5%Cu	37.5	62.5	-	-	-	-	980-998	-	BAu-1	AU103	Au 375 V1	
Meta-Braze™ Au 354	35%Au/65%Cu	35	65	-	-	-	-	990-1010	-	-	-	Au 354	
Meta-Braze™ Au 025	Palnicorum®10	25	37	10	-	15	13	970-1013	-	-	-	-	
Meta-Braze™ Au 295	30%Au/70%Cu	30	70	-	-	-	-	995-1020	-	-	AU104	Au 295 V1	
Meta-Braze™ Au 351	Nicoro®	35	62	3	-	-	-	975-1030	-	BAu-3	-	Au 351	
Meta-Braze™ Au 070	70%Au/30%Ag	70	-	-	30	-	-	1030-1040	-	-	-	-	
Meta-Braze™ Au 700	Palniro®7	70	-	22	-	8	-	1005-1045	4786	BAu-6	-	Au 700	
Meta-Braze™ Au 507	Palniro®1	50	-	25	-	25	-	1102-1121	4784	-	-	Au 507	



Ultra high purity brazing products supplied by VBC Group are used for components in medical imaging and treatment equipment



## Meta-Braze™ Palladium Bearing Brazing Alloys



**Product Uses and Applications:** High purity palladium containing brazing alloys find use in a variety of applications including electronic components for imaging, aerospace, oil and gas and chemical. The alloys in this range are often selected because they can be produced in ultra pure V1 grade, sometimes called 'vacuum tube grade', making them suitable for brazing metallised ceramics in electronic components. Palladium bearing alloys also exhibit good corrosion resistance and strength at elevated temperatures.

Key Products	Trade Name	Pd	Ag	Cu	Ni	Other	Melting Range °C	AWS A5.8	EN1044 1999	ISO 17672 2024	Product Forms
Meta-Braze™ Pd 287	Palcusil®5	5	68.5	26.5	-	-	805-810	BVAg-30	PD106	Pd 287 V1	
Meta-Braze™ Pd 388	-	10	67.5	22.5	-	-	830-860	-	PD104	Pd 388 V1	
Meta-Braze™ Pd 387	Palcusil®10	10	58	32	-	-	825-850	BVAg-31	PD105	Pd 387 V1	
Meta-Braze™ Pd 481	Palcusil®15	15	65	20	-	-	850-900	-	PD103	Pd 481 V1	
Meta-Braze™ Pd 484	Palcusil™ 20	20	52	28	-	-	875-900	-	PD102	Pd 484 V1	
Meta-Braze™ Pd 587	Palcusil®25	25	54	21	-	-	901-950	BVAg-32	PD101	Pd 587 V1	
Meta-Braze™ Pd 288	Palsil®5	5	95	-	-	-	970-1010	-	PD204	Pd 288 V1	
Meta-Braze™ Pd 483	18%Pd/ 82%Cu	18	-	82	-	-	1080-1090	-	PD203	Pd 483 V1	
Meta-Braze™ Pd 485	Palmansil™ 5	20	75	-	-	5 Mn	1000-1120	-	-	Pd 485	
Meta-Braze™ Pd 030	-	30	70	-	-	-	1150-1225	-	-	-	
Meta-Braze™ Pd 647	Palni®	60	-	-	40	-	1235	-	PD201	Pd 647 V1	
Meta-Braze™ Pd 047	Palnisi 47™	46.7	-	-	47.2	6.1 Si	851	-	-	-	
Meta-Braze™ Pd 065	Palco®	65	-	-	-	35 Co	1219	BVPd-1	-	-	

## Meta-Braze™ High Purity Silver Brazing Alloys



**Product Uses and Applications:** High purity silver containing brazing alloys find use in a variety of applications predominantly in electronic components. A major use is for joining metallised ceramics used in vacuum tube devices. The addition of nickel to Meta-Braze™ Ag 071 improves wetting on stainless steel components, whilst the indium containing Meta-Braze™ Ag 063 and Meta-Braze™ Ag 061 provide the possibility for a step brazing operation when used with Meta-Braze™ Ag 272.

Key Products	Trade Name	Ag	Cu	Ni	Other	Melting Range °C	AWS A5.8	EN1044 1999	ISO 17672 2024	Product Forms
Meta-Braze™ Ag 272	Cusil®	72	28	-	-	780	BVAg-8	AG401	Ag 272 V1	
Meta-Braze™ Ag 071	Nicusil® 3	71.15	28.1	0.75	-	780-795	BAG-8b	-	-	
Meta-Braze™ Ag 063	Incusil®10	63	27	-	10 In	685-730	-	-	-	
Meta-Braze™ Ag 061	Incusil®15	61.5	23.5	-	15 In	605-725	BVAg-29	-	-	

\*Not all alloys are available in these forms. Check availability with VBC Group.

Morgan Trade Marks: Through its longstanding association with Morgan Advanced Materials, Wesgo Metals, VBC Group is able to provide Morgan branded products in certain territories. Aside from this VBC Group also provides its own brand of this type of product for global distribution.

# Brazing Products

## Meta-Braze™ Range of Silver Brazing Alloys



**Product Uses and Applications:** These products can be used to join most of the common metals used in industry such as copper, copper alloys (brass, bronze, nickel silver etc.), nickel alloys, carbon steel, stainless steel and tungsten carbide. Meta-Braze™ 155 is the most widely used brazing alloy combining low brazing temperatures with a short melting range making it free flowing and easy to use. Meta-Braze™ 140 is a popular general-purpose product with medium melt and flow characteristics.

Key Products	Ag	Cu	Zn	Sn	Si	Melting Range °C	AWS A5.8	EN1044 1999	ISO 17672 2024	Product Forms
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### Silver Brazing Alloys - High Silver Content with Low Melting Temperatures and Free Flowing Characteristics

Meta-Braze™ 060	60	26	14	-	-	695-730	-	AG202	-	
Meta-Braze™ 156	56	22	17	5	-	620-655	BAG-7	AG102	Ag 156	
Meta-Braze™ 155	55	21	22	2	-	630-660	-	AG103	Ag 155	
Meta-Braze™ 145	45	27	25.5	2.5	-	640-680	-	AG104	Ag 145	
Meta-Braze™ 145 Si	45	27	25.3	2.5	0.2	640-680	-	-	Ag 145 Si	
Meta-Braze™ 045 Si	45	25	26.8	3	0.2	640-680	-	-	-	

### Silver Brazing Alloys - Medium and Low Silver Content With Medium Melting and Flow Characteristics

Meta-Braze™ 140	40	30	28	2	-	650-710	BAG-28	AG105	Ag 140	
Meta-Braze™ 140 Si	40	30	27.8	2	0.2	650-710	-	-	Ag 140 Si	
Meta-Braze™ 138	38	32	28	2	-	650-720	BAG-34	-	Ag 138	
Meta-Braze™ 130	30	36	32	2	-	665-755	-	AG107	Ag 130	
Meta-Braze™ 125	25	40	33	2	-	680-760	BAG-37	AG108	Ag 125	
Meta-Braze™ 024	24	43	33	-	-	740-800	-	-	-	
Meta-Braze™ 220	20	44	35.8	-	0.2	690-810	-	AG206	Ag 220	



## Meta-Braze™ Standard Silver Brazing Fluxes



**Product Uses and Applications:** The use of low temperature (LT) brazing flux is necessary for brazing operations undertaken in air. VBC Group is able to offer a range of silver brazing fluxes with different brazing characteristics to suit a range of applications.

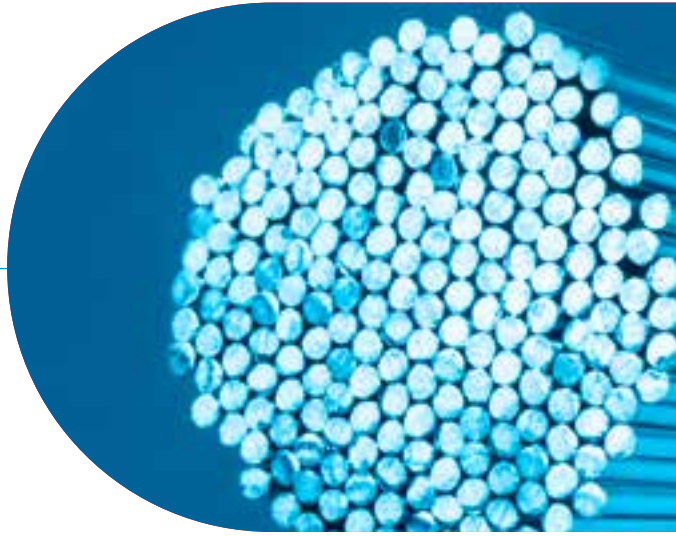
Key Products	Working Range °C	ISO 18496 EN1045	Key Points
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### Low Temperature Silver Brazing Flux

Meta-Braze™ LT 21 Flux Powder	550-800	FH10	A general purpose silver brazing flux powder
Meta-Braze™ LT 025 Flux Powder	550-800	FH10	A highly active general purpose silver brazing flux powder that flows easily
Meta-Braze™ LT 41 Flux Paste	550-800	FH10	A general purpose silver brazing flux paste
Meta-Braze™ LT 51 Flux Paste	590-850	AMS 3410	A white silver brazing flux paste that conforms to AMS 3410
Meta-Braze™ LT 21 Liquid Flux	550-750	FH10	A dilute liquid flux for small components
Meta-Braze™ AB 21 Flux Paste	550-775	FH11	A special purpose silver brazing flux paste for aluminium bronze
Meta-Braze™ ZBA Flux Paste	550-880	-	A boric acid free flux paste

### Medium Temperature Brazing Flux

Meta-Braze™ MT 21 Flux Powder	600-900	FH10	A silver brazing flux powder for low silver content alloys and prolonged heating
Meta-Braze™ BM 51 Flux Paste	590-950	AMS 3411	A 'Black' silver brazing flux paste that conforms to AMS 3411



## Meta-Braze™ Silver Brazing Alloys for Tungsten Carbide and PCD Segments



**Product Uses and Applications:** These silver brazing alloys are used for brazing cemented tungsten carbide and tungsten carbide faced PCD tips. The manganese and/or nickel in them improves wetting of the filler metal. Meta-Braze™ 449 and Meta-Braze™ 450 are widely used for small/medium carbides whilst Meta-Braze™ 450 Trifoil and Meta-Braze™ 049 Trifoil are special laminate products used for larger carbide segments protecting against cracking.

Key Products	Ag	Cu	Zn	Ni	Mn	In	Melting Range °C	AMS	AWS A5.8	EN1044 1999	ISO 17672 2024	Product Forms
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### Silver Brazing Alloys - For Tungsten Carbide and PCD Segments

Meta-Braze™ 064	64	26	-	2	2	6	730-780	-	-	-	-	
Meta-Braze™ 450	50	20	28	2	-	-	660-705	4788	BAG-24	-	Ag 450	
Meta-Braze™ 449	49	16	23	4.5	7.5	-	680-705	-	BAG-22	AG502	Ag 449	
Meta-Braze™ 440	40	30	28	2	-	-	670-780	-	BAG-4	-	Ag 440	



### Silver Brazing Alloys - Trifoil Products for Tungsten Carbide Segments

Meta-Braze™ 049 Trifoil	49	27.5	20.5	0.5	2.5	-	670-690	-	-	-	-	
Meta-Braze™ 450 Trifoil	50	20	28	2	-	-	660-705	4788	BAG-24	-	Ag 450	

## Meta-Braze™ Silver Brazing Fluxes for Tungsten Carbide and PCD Segments



**Product Uses and Applications:** Special brown boron modified (BM) fluxes are recommended for brazing grades of tungsten carbide which prove difficult for the brazing alloy to wet. Standard silver brazing fluxes are often preferred where wetting isn't an issue and where use of a white flux is preferable to allow the joint to be seen during brazing.

Low Temperature Silver Brazing Flux	Working Range °C	ISO 18496 EN1045	Key Points
Meta-Braze™ BM 21 Flux Powder	550-800	FH12	A boron-modified flux powder for tungsten carbide and PCD
Meta-Braze™ BM 41 Flux Paste	550-800	FH12	A boron-modified flux paste for tungsten carbide and PCD
Meta-Braze™ BM 81 Dispensable Flux Paste	550-800	FH12	A boron-modified dispensable flux paste for tungsten carbide and PCD
Meta-Braze™ LT 21 Flux Powder	550-800	FH10	A general purpose silver brazing flux powder
Meta-Braze™ LT 41 Flux Paste	550-800	FH10	A general purpose silver brazing flux paste

## Meta-Braze™ Silver Brazing Alloys for Special Applications



**Product Uses and Applications:** Meta-Braze™ 463 and Meta-Braze™ 456a are designed to prevent interfacial (crevice) corrosion in 400-Series stainless steel and Meta-Braze™ 450 in 300-Series joints when exposed to water in damp or wet service environments.

Key Products	Ag	Cu	Ni	Sn	Other	Melting Range °C	AMS	AWS A5.8	EN1044 1999	ISO 17672 2024	Product Forms
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### Silver Brazing Alloys - For Stainless Steel Joints Exposed to Aqueous Service Conditions

Meta-Braze™ 463	63	28.5	2.5	6	-	690-800	4774	BAG-21	-	Ag 463	
Meta-Braze™ 160	60	30	-	10	-	600-730	4773	BAG-18	AG402	Ag 160	
Meta-Braze™ 456a	56	27.25	2.25	-	14.5 In	600-710	-	-	AG403	Ag 456a	
Meta-Braze™ 450	50	20	2	-	28 Zn	660-705	4788	BAG-24	-	Ag 450	

### Silver Brazing Alloys - For Aerospace and Miscellaneous Applications

Meta-Braze™ 456	56	42	2	-	-	770-895	4765	BAG-13a	-	Ag 456	
Meta-Braze™ 454	54	40	1	-	5 Zn	720-855	4772	BAG-13	-	Ag 454	
Meta-Braze™ 445	45	30	-	-	25 Zn	665-745	-	BAG-5	-	-	



# Brazing Products









## Meta-Braze™ Range of Silver / Copper Phosphorus Brazing Alloys



**Product Uses and Applications:** Principally used for HVAC&R applications where they are recommended for the flux-less brazing of copper pipes and tubes. Meta-Braze™ 284 can be supplied as a foil which is widely used for electrical engineering applications involving copper. The phosphorus in these alloys imparts a self-fluxing characteristic but also affects the ductility and flow of the product. The products in this range provide different ductility and flow characteristics. They should not be used on nickel or iron containing metals, including all grades of steel, because a brittle joint will result.

Key Products	Ag	Cu	P	Other	Melting Range °C	EN1044 1999	ISO 17672 2024	Standard Forms	Special Forms
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### Silver Copper Phos Brazing Alloys

Meta-Braze™ 286	18	75	7	-	645	CP101	CuP 286	       
Meta-Braze™ 284	15	80	5	-	645-800	CP102	CuP 284	
Meta-Braze™ 283	6	86.75	7.25	-	645-720	-	CuP 283	
Meta-Braze™ 281	5	89	6	-	645-815	CP104	CuP 281	
Meta-Braze™ 279	2	91.7	6.3	-	645-825	CP105	CuP 279	

### Copper Phos Brazing Alloys

Meta-Braze™ 179	-	93.8	6.2	-	710-890	CP203	CuP 179
Meta-Braze™ 180	-	93	7	-	710-820	CP202	CuP 180
Meta-Braze™ 182	-	92.2	7.8	-	710-770	CP201	CuP 182
Meta-Braze™ 386	-	86.2	6.8	7 Sn	640-680	CP302	CuP 386
Meta-Braze™ 389	-	92	6	2 Sb	690-825	CP301	CuP 389



VBC Group provides silver copper phos braze alloys for use in HVACR applications. The quality of Meta-Braze™ alloys ensures customers can be confident of repeatable flow and reliable joint quality.



## Meta-Braze™ Brazing Fluxes for Use on Copper Alloys with Silver / Copper Phosphorus Brazing Alloys

**Product Uses and Applications:** The use of brazing flux is not necessary when brazing copper to copper using a silver-/copper-phos brazing product because the phosphorus in the alloy imparts a self-fluxing characteristic. However for brazing copper alloys, such as brass or bronze, this self-fluxing mechanism is not effective and use of a brazing flux is necessary.

Key Products	Working Range °C	ISO 18496 EN1045	Key Points
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### Low Temperature Silver Brazing Flux


Meta-Braze™ LT 21 Flux Powder	550-800	FH10	A general purpose silver brazing flux powder
Meta-Braze™ LT 025 Flux Powder	550-800	FH10	A highly active general purpose silver brazing flux powder that flows easily
Meta-Braze™ LT 41 Flux Paste	550-800	FH10	A general purpose silver brazing flux paste
Meta-Braze™ AB 21 Flux Paste	550-775	FH11	A special purpose silver brazing flux paste for aluminium bronze

### Medium Temperature Silver Brazing Flux

Meta-Braze™ MT 21 Flux Powder	600-900	FH10	A silver brazing flux powder for low silver content alloys and prolonged heating
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## Meta-Braze™ Aluminium Brazing Alloys

**Product Uses and Applications:** Meta-Braze™ Al filler metals are intended for joining aluminium alloys – the 1000 series (e.g. 1100), 3000 series (e.g. 3003, 3004), 5000 series and some 6000 series alloys (eg.6061, 6031, 6951). They are used in the manufacture of automotive components and aluminium heat exchangers.

Key Products	Al	Si	Cu	Zn	Melting Range °C	AWS A5.8	EN1044 1999	ISO 17672 2024	Standard Forms
Meta-Braze™ Al 112	88	12	-	-	575-585	BAISI-4	AL104	Al 112	
Meta-Braze™ Al 013	22	-	-	78	441-471	-	-	-	
Meta-Braze™ Al 002	2	-	-	98	377-385	-	-	-	

## Meta-Braze™ Aluminium Brazing Fluxes

**Product Uses and Applications:** When brazing aluminium alloys in air it is necessary to use a brazing flux. VBC can supply both fluoride based non-corrosive fluxes and chloride based corrosive fluxes.

Aluminium Brazing Flux	Working Range °C	ISO 18496 EN1044	Key Points
Meta-Braze™ ALC 31 Flux Powder	550-660	FL10	A general purpose aluminium brazing flux powder with corrosive residues
Meta-Braze™ ALC 31 Flux Paste	550-660	FL10	A general purpose aluminium brazing flux paste with corrosive residues
Meta-Braze™ ALNC 31 Flux Powder/Paste	570-660	FL20	A general purpose aluminium brazing flux with non-corrosive residues
Meta-Braze™ ALNC 32 Flux Powder/Paste	570-660	FL30	A cesium containing aluminium brazing flux with non-corrosive residues



## Nickel Brazing

## Aluminium Brazes & Weld Alloys

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## Braze Pastes

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