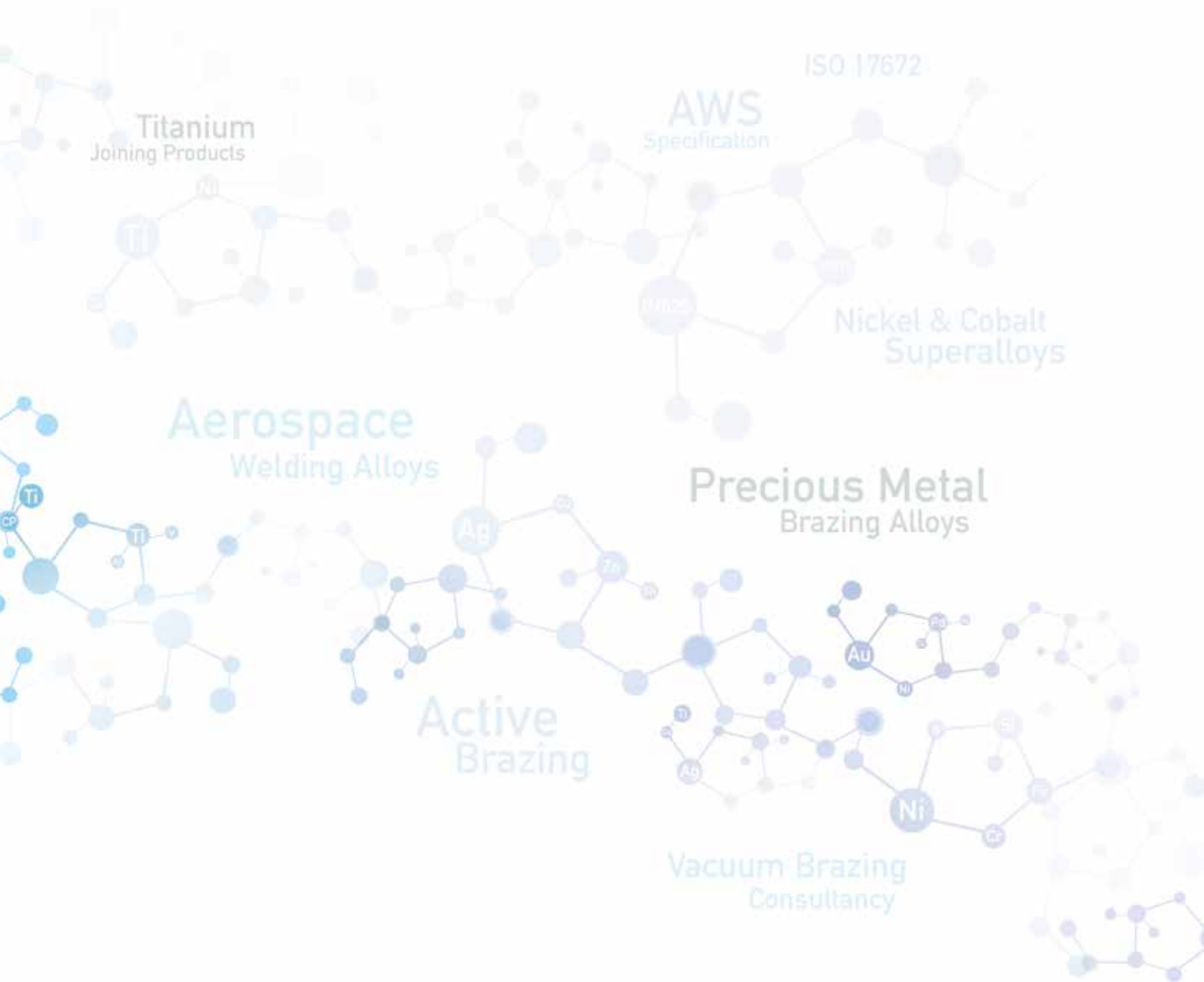


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# Welding & Brazing Solutions

For High-Tech and Quality-Critical Applications



vbcgroup

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# Welding & Brazing Solutions



## Our Heritage and Global Presence

Established in 1985 as **Vacuum Brazing Consultants Ltd**, VBC Group is headquartered in Loughborough, East Midlands, at the heart of the UK's aerospace industry. VBC Group's scope of supply now covers a **worldwide customer base** in the field of welding, brazing and allied technologies.



## Specialists in Advanced Welding and Brazing

VBC Group is a global supplier of **premium quality** welding wire, brazing alloys and associated products. We are specialists in supporting **quality-critical** and **high-tech** applications such as aerospace, electronic imaging components, oil and gas, power generation as well as emerging technologies.



## Our Mission Statement

We are committed to providing complete and bespoke **joining solutions** for advanced materials. We aim to meet our customers' individual needs with attention to detail and quality products. At VBC Group we strive to **positively influence our industry**, the environment and wider community.

Individualised  
Customer Service



Specialists in the Supply of Products for  
High-Tech and Quality-Critical Applications

## Market Sectors

### Aerospace Components



### Aviation MRO



### Hard Materials



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## Our Key Benefits



### Welding and Brazing Products

VBC Group holds a unique position as a supplier of both **welding and brazing** products. We have in-depth knowledge and expertise in the use of these materials. This enables our customers to buy their joining products from a **single specialist source** and make **efficiency savings**.



### Industry Leading Quality

VBC Group carries **Aerospace Standard AS9100** approval. Our quality system is based on this demanding standard which underpins all of our activities. Our customers can be confident that VBC Group has the **quality credentials** to meet their requirements.



### Expert Technical Support

VBC Group has the expertise to provide technical support for our products and the processes they are used in. Our customers can be certain that if they need **advice** on techniques, more detailed technical support or a full **consultancy package** then VBC Group can provide it.

## Power Generation



## Medical & Scientific



## Emerging Technologies



### Individualised Customer Service

Whether your requirement is for a single box of welding rods or a complex portfolio of 100s of products VBC Group's customer service team will provide you with individualised customer support. With an **on-time delivery** rate of **above 99.5%** you can be sure of excellent service.



### Knowledge of Critical Applications

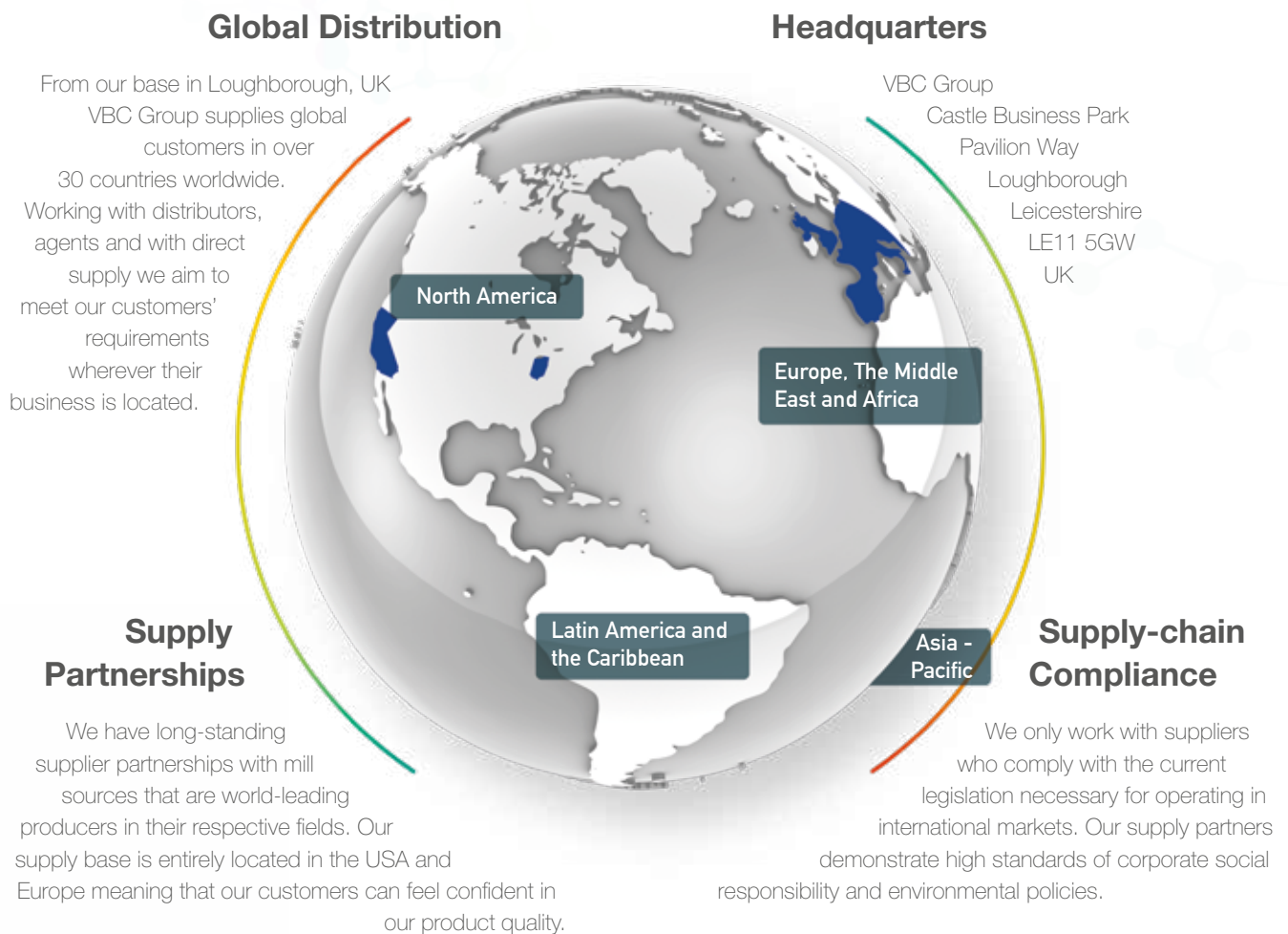
We can help customers in many areas of joining technology including **welding metallurgy, vacuum brazing** processes (including honeycomb brazing), precious metal filler metals, brazing of man-made hard materials such as WC, PCD, CBN and diamond and brazing of ceramics using **active metal brazing** filler materials and techniques.



### Bespoke Products and Services

VBC Group is flexible and responsive in its approach to customer requirements. We can provide services around our core product range such as **flagging of rods**, wire drawing, straightening and cutting, photo-etching, refining and pre-form manufacture. We also **manufacture** bespoke aerospace-grade **brazing pastes**.

# Global Supply Capability



## Supply Chain Compliance





Continuous  
Improvement of QMS

Full Product  
Traceability

Quality  
Verification

Customer Focused,  
Quality Orientated

Global  
Supply

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## Quality Credentials



### Quality Management System

VBC Group operates a mature quality system (approved since 1994). We are certified to ISO 9001:2015 and AS 9100 (Rev D).

AS 9100 provides a global aerospace manufacturing standard with a strong emphasis on **regulatory compliance**, **product traceability** and **continuous improvement** of the quality management system.



### Customer Approvals

We release welding and brazing products to **AMS, AWS and ISO standards**. In addition we hold numerous customer approvals and can release products to aerospace specifications.

VBC Group is tier 1 supplier to Rolls-Royce OEM. We are listed for new build under MSRR9500 and for repair in the OMat (Rolls-Royce Overhaul Materials) and repair manual as authorised vendor UK 314.



### Our Commitment to Quality

We understand the importance of continuous improvement and are committed to satisfying our customers' quality expectations.

Our quality system is based on the demanding standards of aerospace and we apply these standards for all of our customers regardless of their size, market sector or location.



# Welding Products

VBC Group is a provider of premium-quality welding rods and associated products. Our welding products meet the requirements of the most stringent aerospace quality approvals giving superior performance in the most demanding of applications.

In addition to our own Pura-Weld™ brand we can provide premium brand products from our supply partners. Consequently we have the capability to supply over 200 different types of welding wire. A wide range of welding wires from the various product families are held in stock at our facility.

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## Pura-Weld™ Welding Product Range





### Welding Alloys

- Pura-Weld™ Titanium Welding Alloys
- Pura-Weld™ Cobalt Welding Alloys
- Pura-Weld™ Aluminium Welding Alloys
- Pura-Weld™ Nickel Welding Alloys
- Pura-Weld™ Stainless Steel Welding Alloys
- Welding Alloys for ALM / SMD / WAAM

### Associated Welding Products

- Other Welding Alloy Product Types
- Weld Inserts
- Tungsten Electrodes
- Deep-Penetration Welding Flux
- Micro Laser Welding Wire
- Locking Wire

### Welding Product Forms

-  Rods / Straight Lengths
-  Wire on Spools
-  Weld Inserts
-  Welding Electrodes

### Welding Wire Forms

Rods / Straight lengths, Wire on Spools

### Auxiliary Product forms

Weld Inserts: Rings from Shaped Section, Electrodes

### Product Identification and Packaging

Special identifications such as bespoke flagging or colour coding of rods are available on all welding wire products. Specialised cleaning and packaging options ensure the highest commercial cleanliness standards for welding wire are maintained.


## Welding Wire Products

There are over 200 welding alloy references in VBC Group's product portfolio. Some of the most commonly requested alloys are shown in this section.

### Pura-Weld™ Titanium Welding Alloys




**Product Uses and Applications:** These products are generally used in gas shielded welding processes (TIG, MIG and plasma-TIG) when joining titanium components. Titanium is used extensively in chemical processing, offshore and aerospace applications as well as in specialised areas such as motorsport and power generation.

Key Products	Trade Name	AWS A5.16	AMS	MSRR	OMAT	Key Points	Forms
Pura-Weld™ 0070	CP Ti	ER Ti-2	AMS 4951	9500/70	366	There are approximately 15 alloys in VBC Group's range of ultra-pure titanium welding filler metals.	
Pura-Weld™ 0073	6Al-4V Ti	ER Ti-5	AMS 4954	9500/73	3/145A		
Pura-Weld™ 0074	6-2-4-2 Ti	-	AMS 4952	9500/74	3/250		
Pura-Weld™ 0075	Titanium 829	-	-	9500/75	3/217		
Pura-Weld™ 0076	Titanium 685	-	-	9500/76	3/200		
Pura-Weld™ 0078	6Al-4V Ti ELI	ER Ti-23	AMS 4956	9500/78	3/145A		
Pura-Weld™ 9007	TiPd – ERTi 7	ER Ti-7	-	-	-		

### Pura-Weld™ Aluminium Welding Alloys



**Product Uses and Applications:** Aluminium alloys 1, 3, 5, 6 and some 7 series alloys can be welded using TIG, MIG and oxyfuel processes. Aluminium is used in pipe and tube fittings in chemical plant, heat exchanger, aerospace and structural applications.

Key Products	Trade Name	AWS A5.10	AMS	MSRR	OMAT	Key Points	Forms
Pura-Weld™ 0031	4047 / 4047A	ER 4047	AMS 4185	9500/31	-	VBC Group's premium quality aluminium welding products provide a reliable solution for welding lightweight aluminium alloys in a range of applications.	
Pura-Weld™ 0032	4043 / 4043A	ER 4043	AMS 4190	9500/32	310		
Pura-Weld™ 0033	3103, NG3	-	-	9500/33	3/361A		
Pura-Weld™ 0035	4145	ER 4145	AMS 4184	9500/35	3/337		
Pura-Weld™ 0038	5356A	ER 5356	-	9500/38	3/61		
Pura-Weld™ 0045	2319	ER 2319	AMS 4191	9500/45	3/264		
Pura-Weld™ 9110	1100	ER 1100	AMS 4180	-	-		
Pura-Weld™ 9464	4643	ER 4643	AMS 4189	-	-		

### Pura-Weld™ Other Welding Alloy Product Groups



Product Type	Typical Alloys	Standard	MSRR	OMAT	Key Points
Mild Steel Welding Alloys	Mild / carbon steel and ferrous alloys	Various – over 45 alloy types	-	-	VBC Group is able to supply the complete range of welding filler materials including iron, copper, magnesium and zirconium welding materials.
Copper Welding Alloys	Bronze and brass alloys	Various	-	-	
Magnesium Welding Alloys*	Pura-Weld™ 0050 Pura-Weld™ 0051	A5.19 EZ33A A5.19 AZ92A	9500/50 9500/51	308 3/58	
Zirconium Welding Alloys	Pura-Weld™ 9702	A5.24 ER Zr 2	-	-	

\*There are minimum economic order quantities for these products, please contact VBC Group for more information.



VBC Group's welding wires undergo precise processing and rigorous testing to ensure they are pure, ultra-clean and dimensionally accurate

## Pura-Weld™ Welding Alloys for Additive Layer Manufacturing





Key Products	Typical Alloys	AWS	AMS	MSRR	Key Points
Titanium Alloys	Pura-Weld™ 0073 6Al-4V Ti	A5.16 ER Ti-5	AMS 4954	9500/73	VBC Group supplies products that are suitable for Additive Layer Manufacturing (ALM) processes such as Shape Metal Deposition (SMD) and wire+arc Additive Manufacturing (WAAM). SMD and WAAM have been pioneered by the aerospace industry. VBC Group is able to supply precision ultra-pure welding wires for these advanced processes. Products are supplied in bulk packs layer wound with a tightly controlled helix and cast for ALM applications
Nickel Superalloys	IN625	A5.14 ERNiCrMo-3	AMS 5837	9500/237	
Aluminium Alloys	Pura-Weld™ 0045	A5.10 ER2319	AMS 4191	9500/45	
	Pura-Weld™ 9554 Pura-Weld™ 0031	A5.10 ER5554 A5.10 ER4047	- AMS 4185	- 9500/31	
Stainless Steel	420 316L	A5.9 ER420 A5.9 ER316L	AMS 5621 AMS 5692	- -	

# Welding Wire Products

## Pura-Weld™ Cobalt Welding Alloys





**Product Uses and Applications:** These cobalt welding, casting and hard facing alloys are for use on cobalt superalloys. Many applications can be found in gas turbines where high temperature strength, resistance to oxidation and wear resistance are required.

Key Products	Trade Name	AMS	Other Specifications	MSRR	OMAT	Key Points	Forms
Pura-Weld™ 0015	PMET 913, Alloy 12H, Stellite 12, HS12	-	-	9500/15	311	Cobalt alloys can be used for hardfacing, welding of gas turbine engine blades and hot section components as well as for repair of high or low pressure turbine blades.	 
Pura-Weld™ 0019	PMET 906, Alloy 6, Stellite 6, HS 6	5788	-	9500/15	358		
Pura-Weld™ 0023	PMET 905, L-605, Stellite 25, HS 25	5796	-	9500/23	-		
Pura-Weld™ 0025	PMET 931, HS31 / Stellite 31	5789	-	9500/25	-		
Pura-Weld™ 0226	PMET 994, CM64, PWA694, Stellite 694	-	-	9500/226	-		
Pura-Weld™ 0228	PMET 912, HS 12 (ECoCr-B)	-	-	9500/228	-		
Pura-Weld™ 0248	PMET 972, Merl 72	-	PWA 795	9500/248	-		
Pura-Weld™ 9018	PMET 918, Mar M 918	5814	-	-	-		
Pura-Weld™ 9414	PMET 914, FSX414	-	-	-	-		
Pura-Weld™ 9509	PMET 909, Mar M 509	-	PWA1185, GE B50TF89	-	-		
Pura-Weld™ 9800	PMET 980, T-800, Triballoy 800	-	GE B50TF193	-	-		
Pura-Weld™ 9210	PMET 921	5819	-	-	-		

## Pura-Weld™ Nickel Welding Alloys



**Product Uses and Applications:** VBC Group's nickel superalloy welding wires are used in high temperature and strength applications such as for gas and land based turbine engine components. There are around 50 alloy references in the range, the most commonly specified are listed below.

Key Products	Trade Name	AMS	Other Specifications	MSRR	OMAT	Key Points	Forms
Pura-Weld™ 0003	NC 80/20	5676	AWS A5.14 ERNiCr-6	9500/3	305D	These high temperature nickel alloys are used on gas turbine engine components subject to hot gas flow, such as blades, vanes, combustors, frames and castings.	 
Pura-Weld™ 0004	Nimonic™ 90	5829	ISO 18274 NiCr20Co18Ti3	9500/4	312		
Pura-Weld™ 0009	FM 92	5675	AWS A5.14 ERNiCrFe-6	9500/9	314		
Pura-Weld™ 0016	PMET863, Nimonic™ C263	5966	GE B50A783	9500/16	3/62		
Pura-Weld™ 0202	PMET865, Waspalloy™	5828	-	9500/202	3/99		
Pura-Weld™ 0213	PMET870, Hastelloy™W	5786	AWS A5.14 ERNiMo-3	9500/213	3/33		
Pura-Weld™ 0216	FM82	5836	AWS A5.14:2005 ERNiCr-3	9500/216	3/170		
Pura-Weld™ 0215	PMET 875, Hastelloy™X	5798	AWS A5.14 ERNiMo-2	9500/215	3/165		
Pura-Weld™ 0220	PMET 818, IN 718	5832	-	9500/220	3/206		
Pura-Weld™ 0227	IN 901	5830	-	9500/227	3/203		
Pura-Weld™ 0237	PMET 860 Inco™ 625	5837	AWS A5.14 ERNiCrMo-3	9500/237	3/172		
Pura-Weld™ 0247	PMET 842, Rene™142	-	GE B50TF274	9500/247	-		
Pura-Weld™ 9247	PMET 847, Mar M 247	-	EMS 55447	-	-		
Pura-Weld™ 9738	PMET 838, Inco 738	-	PWA 1451, GE B50TF191	-	-		
Pura-Weld™ 9080	PMET 880, Rene 80	-	GE B50TF259	-	-		






## Pura-Weld™ Stainless Steel Welding Alloys



**Product Uses and Applications:** These stainless steel welding alloys find use in a wide range of industries. VBC Group is able to provide commercial grades as well as grades for aerospace and power generation.

Key Products	Trade Name	AMS	Other Specifications	MSRR	OMAT	Key Points	Forms
Pura-Weld™ 0002	18-8Nb	-	MSRR 6677	9500/2	306	With 45 alloys in VBC Group's stainless steel welding wire range we offer one of the broadest ranges of products on the market today	
Pura-Weld™ 0005	FV520, FIW	-	-	-	-		
Pura-Weld™ 0010	JETHETE M190	5822	Special Purity Grade	9500/10	3/54		
Pura-Weld™ 9240	17-4PH	5825	AWS A5.9 ER630	9500/240	-		
Pura-Weld™ 0212	312	5784	AWS A5.9 ER312	9500/212	3/163		
Pura-Weld™ 9309	309L	-	AWS A5.9 ER 309LMo	-	-		
Pura-Weld™ 9316	316L	5692	AWS A5.9 ER316L	9500/208	-		
Pura-Weld™ 0205	410	5776	AWS A5.9 ER410	9500/205	-		

Whether specifying or using VBC Group products you can be confident that they will produce superior quality welded joints



## Associated Welding Products

VBC Group offers a range of associated welding products, some of which are detailed here. Please refer to our sales team for more details or for other welding products.

### Weld Inserts



Weld inserts provide the highest quality root pass for welds that require radiography and have also gained acceptance in commercial applications. They are available as rings supplied in standard pipe sizes or as wire on coil, to AWS style A, B or C.



### Deep-Penetration Welding Flux



We are able to offer a range of weld catalysts for structural steels, stainless steels and nickel alloys. These fluxes are specially formulated to enhance weld bead penetration.



### Tungsten Electrodes



We are able to source the seven types and five industry-standard diameters. Our tungsten electrodes will meet the AWS (American Welding Society) specifications and package labels feature important safety information.



### Locking Wire



Locking Wire is extensively used to secure components which are subject to vibration in critical environments. Manufactured from a wide range of materials and certified to international specifications.



### Micro Laser Welding Wire



VBC Group provides ultra fine diameter welding wire, typically between 0.3 - 0.6mm diameter, in a wide range of alloys







VBC Group supplies both welding and brazing filler metals used to manufacture critical components in jet engine applications



# 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.

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## Meta-Braze™ Brazing Product Range

### Brazing Alloys

Meta-Braze™ Nickel Brazing Alloys

Meta-Braze™ Gold Brazing Alloys

Meta-Braze™ Palladium Brazing Alloys

Meta-Braze™ Silver Brazing Alloys (V1 grade)

Meta-Braze™ Silver Brazing Alloys

Meta-Braze™ Copper Phos Brazing Alloys

Meta-Braze™ Copper Brazing Alloys

Meta-Braze™ Aluminium Brazing Alloys

Meta-Braze™ Titanium Brazing Alloys

Meta-Braze™ Active Brazing Alloys

### Associated Brazing Products

Metallic Honeycomb

Pre-Sintered Pre-forms (PSPs)

Stop off Compounds

Paste Dispensing Consumables

Furnace Brazing Accessories

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: 2016	Standard Forms
Meta-Braze™ 4775	Microbraz® 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	Microbraz® LC	Bal	14	4.5	3.1	4.5	-	-	-	980-1070	4776	BNi-1a	Ni 610	
Meta-Braze™ 4777	Microbraz® LM	Bal	7	3.0	3.1	4.5	-	-	-	970-1000	4777	BNi-2	Ni 620	
Meta-Braze™ 4778	Microbraz® 130	Bal	-	0.5	3.1	4.5	-	-	-	980-1040	4778	BNi-3	Ni 630	
Meta-Braze™ 4779	Microbraz® 135	Bal	-	1.5	1.8	3.5	-	-	-	980-1070	4779	BNi-4	Ni 631	
Meta-Braze™ 4782	Microbraz® 30	Bal	19	-	-	10.1	-	-	-	1080-1135	4782	BNi-5	Ni 650	Special Forms
Meta-Braze™ 4310	Microbraz® 10	Bal	-	-	-	-	11	-	-	875	-	BNi-6	Ni 700	
Meta-Braze™ 4770	Microbraz® 50	Bal	14	-	-	-	10.1	-	-	890	-	BNi-7	Ni 710	
Meta-Braze™ 4720	Microbraz® 170	Bal	11.5	3.5	2.5	3.5	0.01	0.48	16	970-1105	-	BNi-10	Ni 670	

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





# 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

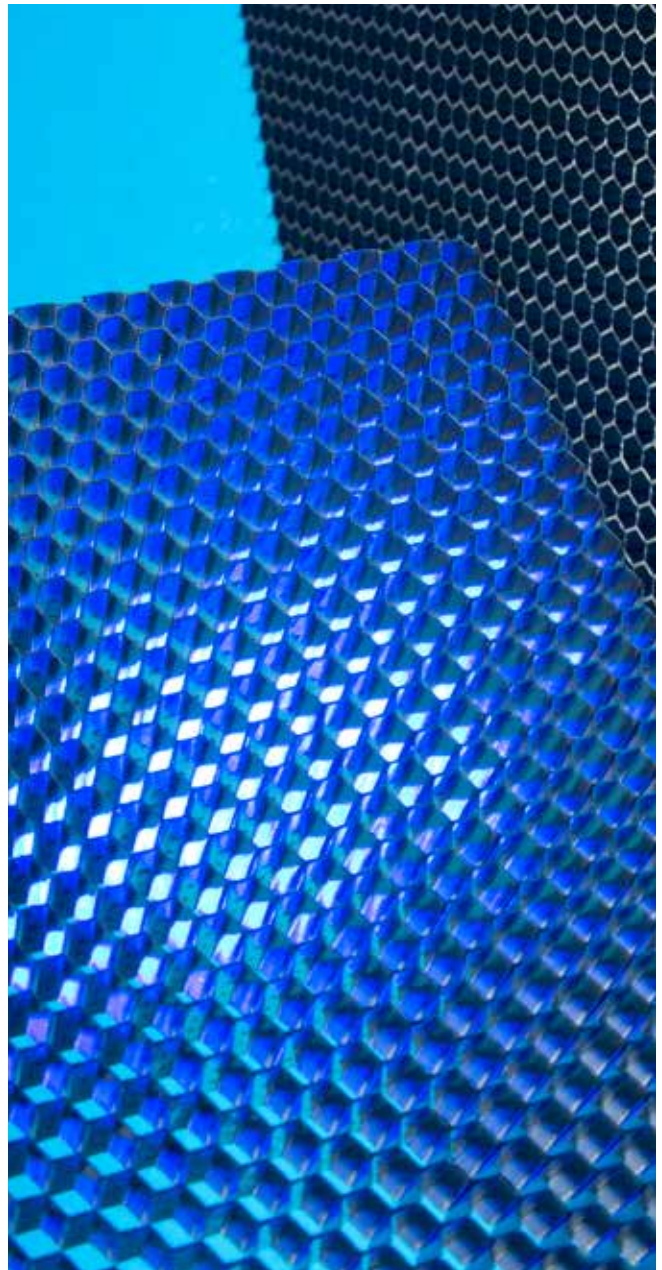
## Meta-Braze™

### 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



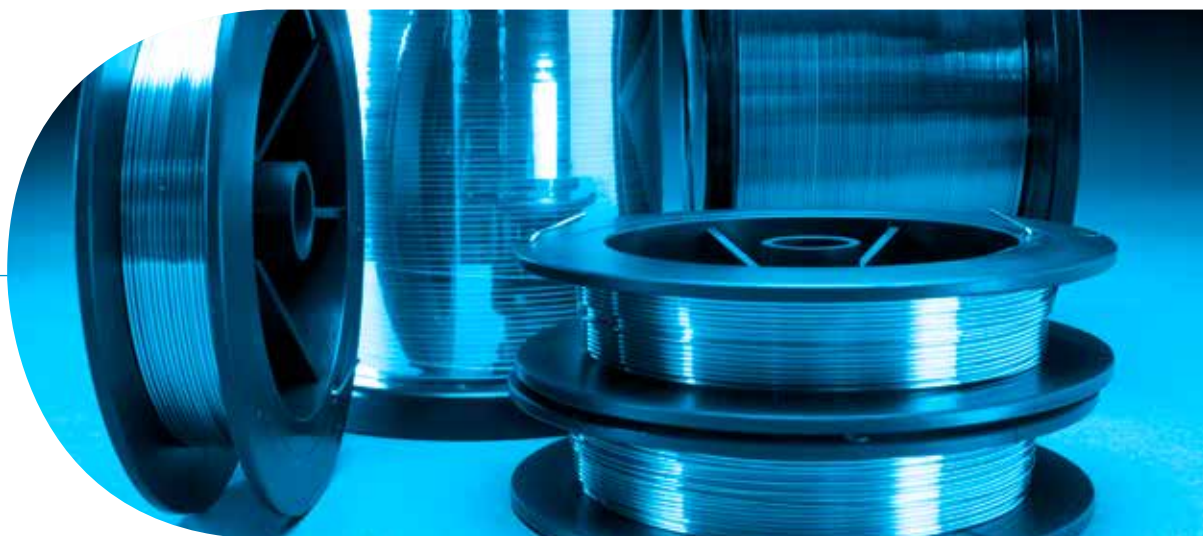
**Product Uses and Applications:** High purity gold containing brazing alloys find use in a variety of applications including electronic components, imaging equipment, aerospace, oil and gas and chemical. The alloys in this range are normally selected because of their ability to withstand chemical attack 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: 2016	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	Nicoro®	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: 2016	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	-	-	

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## 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: 2016	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 17672:2016	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™ 020	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.

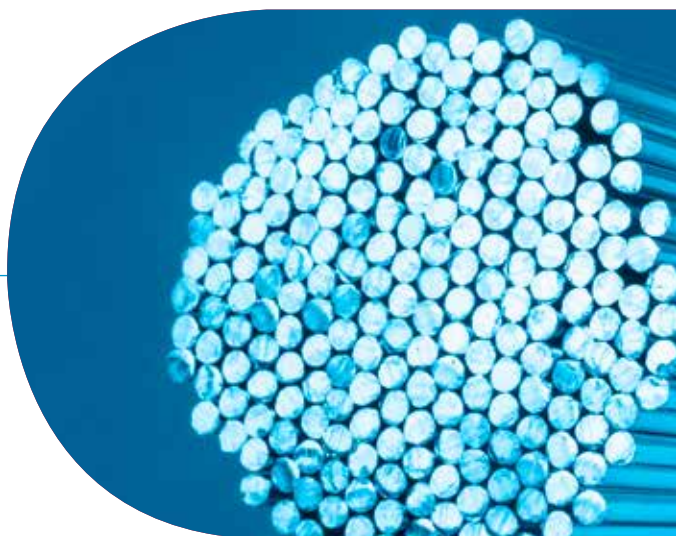
Key Products	Working Range °C	EN1045	Key Points
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### Low Temperature Silver Brazing Flux

Meta-Braze™ LT 21 Flux Powder	550-800	FH10	A general purpose silver brazing flux powder
Meta-Braze™ LT 22 Flux Powder	550-750	FH10	A general purpose silver brazing flux powder for high silver content alloys only
Meta-Braze™ LT 41 Flux Paste	550-800	FH10	A general purpose silver brazing flux paste
Meta-Braze™ LT 23 Flux Paste	550-825	FH10	A general purpose silver brazing flux paste with extra life at higher temperatures
Meta-Braze™ LT 24 Flux Paste	550-750	FH10	A low viscosity silver brazing flux paste good for induction and application by dipping
Meta-Braze™ AB 21 Flux Paste	550-775	FH11	A special purpose silver brazing flux paste for aluminium bronze
Meta-Braze™ Z-BAB Flux Paste	550-880	-	A boric acid and borate 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
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## 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: 2016	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	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 stainless steel silver-brazed joints that are exposed to water in damp or wet service environments. Meta-Braze™ 160 has been used for the same applications.

Key Products	Ag	Cu	Ni	Sn	Other	Melting Range °C	AMS	AWS A5.8	EN1044: 1999	ISO 17672: 2016	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



### 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™ 025	25	52.5	-	-	22.5 Zn	675-855	-	-	-	-

## 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 17672:2016	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™ 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	EN1045	Key Points
<b>Low Temperature Silver Brazing Flux</b>			
Meta-Braze™ LT 21 Flux Powder	550-800	FH10	A general purpose silver brazing flux powder
Meta-Braze™ LT 22 Flux Powder	550-750	FH10	A general purpose silver brazing flux powder for high silver content alloys only
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
<b>Medium Temperature Silver Brazing Flux</b>			
Meta-Braze™ MT 21 Flux Powder	600-900	FH10	A silver brazing flux powder for low silver content alloys and prolonged heating

## 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: 2016	Standard Forms
Meta-Braze™ Al 112	88	12	-	-	575-585	BA5Si-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	EN1045	Key Points
Meta-Braze™ ALC Flux Powder	550-660	FL10	A general purpose aluminium brazing flux powder with corrosive residues
Meta-Braze™ ALC Flux Paste	550-660	FL10	A general purpose aluminium brazing flux paste with corrosive residues
Meta-Braze™ ALNC Flux Powder	570-660	FL20	A general purpose aluminium brazing flux powder with non-corrosive residues
Meta-Braze™ ALNC Flux Paste	570-660	FL20	A general purpose aluminium brazing flux paste with non-corrosive residues

# Brazing Products

## Meta-Braze™ Copper Based Furnace Brazing Alloys



**Product Uses and Applications:** These copper based filler metals are a range of special products designed for high temperature brazing of steel and carbide components. The Meta-Braze™ Cu products which contain nickel and or manganese can show improved wetting on tungsten carbide. Copper can be used as a filler metal in its own right. It can be supplied in a variety of forms and is used for aerospace, automotive and electronic applications.

Key Products	Cu	Ni	Mn	Sn	Others	Melting Range °C	EN1044: 1999	ISO 17672: 2016	Standard Forms
Meta-Braze™ Cu 110	99.9	-	-	-	-	1085	CU101	Cu 110	
Meta-Braze™ Cu 102	99.95	-	-	-	-	1085	CU102	Cu 102	
Meta-Braze™ Cu 186	97	3	-	-	0.03 B	1085-1100	CU105	Cu 186	
Meta-Braze™ Cu 092	91.75	-	-	8	0.25 P	882-1027	-	-	
Meta-Braze™ Cu 595	84.25	3.25	12.5	-	-	965-995	-	Cu 595	


## Meta-Braze™ Copper Based Brazing Alloys for High Temperature Brazing in Air with Flux




**Product Uses and Applications:** These copper based filler metals are a range of special products designed for high temperature brazing of steel and carbide components. The Meta-Braze™ Cu products which contain nickel and / or manganese can show improved wetting on tungsten carbide. When brazing in air it is necessary to use a Meta-Braze™ brazing flux that is suitable for use at high temperatures.

Key Products	Cu	Zn	Ni	Mn	Sn	Co	Si	Melting Range °C	EN1044: 1999	ISO 17672: 2016	Standard Forms
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### Copper Brazing Alloys – For Brazing of Tungsten Carbide Drills, Tools and Wear Parts

Meta-Braze™ Cu 058	58	38	-	2	-	2	-	890-930	-	-	
Meta-Braze™ Cu 052	52.5	-	9.5	38	-	-	-	880-920	-	-	
Meta-Braze™ Cu 067	67.5	-	9	23.5	-	-	-	925-955	-	-	

### Copper Alloys – For Brass Brazing or Bronze Welding of Steel Components

Meta-Braze™ Cu 470a	60	Bal	-	-	-	-	0.3	875-895	CU301	Cu 470a	
Meta-Braze™ Cu 670	60	Bal	-	0.15	0.2	-	0.3	870-900	CU303	Cu 670	

## Meta-Braze™ High Temperature Brazing Fluxes for Use with Copper Based Brazing Alloys



**Product Uses and Applications:** The use of brazing flux is necessary for brazing operations using copper based brazing alloys when brazing in air.

Key Products	Working Range °C	EN1045	Key Points
<b>High Temperature Brazing Flux</b>			
Meta-Braze™ HT 21 Flux Powder	750-1200	FH21	A general purpose brazing flux powder for copper brazing alloys
Meta-Braze™ HT 21 Flux Paste	750-1200	FH21	A general purpose brazing flux paste for copper brazing alloys
<b>Medium Temperature Silver Brazing Flux</b>			
Meta-Braze™ MT 22 Flux Powder	750-1000	FH21	A general purpose brazing flux powder for brass brazing/bronze welding



## Meta-Braze™ Active Brazing Alloys



**Product Uses and Applications:** Active brazing alloys are used for joining a variety of ceramic and cermet components. They eliminate the need for metallising providing savings in time and cost. Active brazing alloys are available in silver, titanium and copper based materials. These products are used in specialised electronic components and tooling applications.

Key Products	Trade Name	Ag	Cu	Ti	In	Other	Melting Range °C	Standard Forms
Meta-Braze™ Cu 93Ti	Copper-ABA™	-	92.75	2.25	-	2 Al, 3 Si	958-1024	
Meta-Braze™ Ag 93Ti	Silver-ABA™	92.75	5	1.25	-	1 Al	860-912	
Meta-Braze™ Ag 69Ti	Ticusil™	68.8	26.7	4.5	-	-	780-900	
Meta-Braze™ Ag 63Ti	Cusil ABA™	63	35.25	1.75	-	-	780-815	
Meta-Braze™ Ag 59Ti	Incusil ABA™	59	27.25	1.25	12.5	-	605-715	



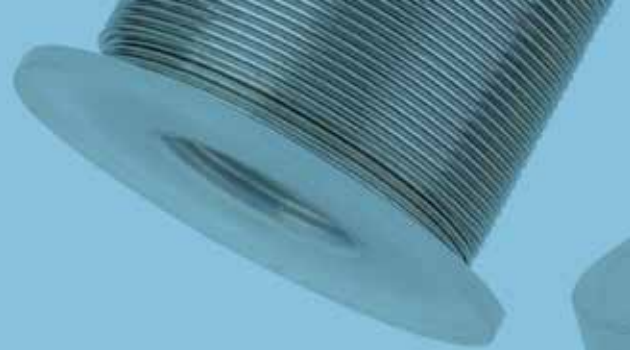
VBC Group specialises in supplying products for active brazing of a wide range of ceramic and cermet materials. This highly specialised area of brazing technology requires technical support and process development that can also be provided by VBC Group.

## Meta-Braze™ Titanium Brazing Alloys



**Product Uses and Applications:** Meta-Braze™ titanium brazing alloys are designed for titanium alloys and superalloys. Typical applications include space and aerospace components where the properties of titanium alloys are necessary.

Key Products	Trade Name	Ti	Ni	Cu	Zr	Other	AWS A5.8	Melting Range °C	Standard Forms
Meta-Braze™ BTi-1	Ticuni™	70	15	15	-	0.3% max	BTi-1	910-960	
Meta-Braze™ BTi-2	Ticuni™ 60	60	25	15	-	-	BTi-2	890-940	
Meta-Braze™ BTi-3	TicuniZr™ 38	37.5	10	15	37.5	-	BTi-3	835-850	



# Soldering Products

Advice on joining techniques, alloy selection and heating methods

**vbc**  
group

Lead free solders for improved environmental impact

High strength solders for elevated service temperatures

VBC Group's Solda-Met™ range of solders and soldering fluxes are designed for industrial soldering operations. The products have been selected to complement the Meta-Braze™ Brazing alloys for use in components where there is a need for a low temperature joining process.

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## Solda-Met™

## Lead-Free Soft Solders



**Product Uses and Applications:** Lead-free solders are widely specified for their elevated strength and resistance to creep at temperature. They are also obligatory for components where compliance with EU RoHS, EVL, WEEE Directives and other environmental regulations are a factor.

Key Products	Sn	Ag	Cu	Sb	Melting Range °C	EN29453	ISO 9453: 2014	Standard Forms	Other Forms
Solda-Met™ 100	100	-	-	-	232	-	-	Solid	Sticks, strip, pieces and paint
Solda-Met™ 96S	96	4	-	-	221-228	Alloy No.28	Alloy No.701	Solid / A- or RA-Flux Cored	Strip, Rings, Foil, Preforms
Solda-Met™ 965S	96.5	3.5	-	-	221	-	Alloy No.703	Solid / A- or RA-Flux Cored	Strip, Rings, Foil, Preforms
Solda-Met™ 96SA	96.15	3.5	-	0.35	221	-	-	-	Paste
Solda-Met™ 975S	97.5	-	2.5	-	221-225	-	-	Solid	Strip, Rings, Foil, Preforms
Solda-Met™ 97C	97	-	3	-	230-250	Alloy No.24	Alloy No.402	Solid / A- or RA-Flux Cored	Strip, Rings, Foil, Preforms
Solda-Met™ 99C	99.3	-	0.7	-	230-240	Alloy No.23	Alloy No.401	Solid / A- or RA-Flux Cored	Strip, Rings, Foil, Preforms
Solda-Met™ 95A	95	-	-	5	230-240	Alloy No.18	Alloy No.201	Solid / RA-Flux Cored	Strip, Rings, Foil, Preforms
Solda-Met™ 87SC	87	10	3	-	214-275	-	-	Solid	Strip, Rings, Foil, Preforms



# Solda-Met™

## vbcgroup

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### Solda-Met™ Lead-Bearing Soft Solders



**Product Uses and Applications:** Lead-bearing solders still find use in certain applications where regulations permit. They melt at lower temperatures than lead free alloys and depending on the formulation can provide a range of flow and joint filling characteristics.

Key Products	Sn	Pb	Ag	Melting Range °C	EN 29453	ISO 9453: 2014	Standard Forms	Other Forms
Solda-Met™ 62LS	62	36	2	178-190	Alloy No.30	Alloy No.171	Solid / A- or RA-Flux Cored	Strip, Rings, Foil, Preforms
Solda-Met™ 5LS	5	93.5	1.5	296	Alloy No.34	Alloy No.191	Solid	Strip, Rings, Foil, Preforms
Solda-Met™ L95S	-	95	5	304-370	Alloy No.33	Alloy No.182	Solid	Strip, Rings, Foil, Preforms
Solda-Met™ 63L	63	37	-	183	Alloy No.1	Alloy No.102	Solid / A- or RA-Flux Cored	Strip, Rings, Foil, Preforms
Solda-Met™ 60L	60	40	-	183-190	Alloy No.2	Alloy No.103	Solid / A- or RA-Flux Cored	Strip, Rings, Foil, Preforms
Solda-Met™ 50L	50	50	-	183-215	Alloy No.3	Alloy No.112	Solid / A- or RA-Flux Cored	Strip, Rings, Foil, Preforms

### Solda-Met™ Soft Solder Fluxes



**Product Uses and Applications:** Solda-Met™ soft soldering fluxes are designed to cover fluxing requirements for industrial soldering operations. Solda-Met™ 1C and 3C are highly active fluxes and are corrosive in nature. Solda-Met™ 2C is a mildly active flux with non-corrosive 'no-clean' flux residues.

Key Products	Recommended for Use On	Working Range °C	Flux Residues	Residue Removal	Packaging
Solda-Met™ 1C Liquid Flux	Carbon Steel / Stainless /Copper/ Brass	180-350	Corrosive	Warm water wash	250ml & 1 Litre
Solda-Met™ 2C Liquid Flux	Copper/ Brass	180-300	Intermediate	No-clean/water wash	250ml & 1 Litre
Solda-Met™ 3C Flux Paste	Carbon Steel / Stainless /Copper/ Brass	180-350	Corrosive	Warm water wash	1 Litre

# Technical Services

VBC Group has its origins in providing technical consultancy in brazing and welding projects. Today we both support our product sales technically and provide technical consultancy where customers require more in-depth support or assistance with a project.

Consultancy projects can range from providing a few hours of support remotely in order to solve a particular issue to spending a week on site with a customer working through their joining processes and training their staff. Some customers prefer to purchase a set number of days which can be used on an ad hoc basis as their product development projects progress.







## Join-Tec™ Training



### Reasons for training

- New to brazing
- Introduction to new materials
- Adopting new products or projects
- Refresher Training
- Staff Training

### Training topics

- The fundamental principals of a joining process
- Joining techniques and heating methods
- Vacuum brazing training both theoretical and practical
- How to do a joining audit
- Problem solving in joining

### What is involved?

Before quoting for training a detailed brief is taken to ensure that both parties understand the objectives of the training and agree what needs to be delivered in order to achieve the desired outcome.

Training is often conducted at a customer's premises although VBC Group's Loughborough site and external training frequently form part of a training package.

## Join-Tec™ Consultancy



### Reasons for consultancy

- Undertaking a new project
- No in-house knowledge
- External support required
- Shortcut the learning curve
- Solving difficult problems

### Consultancy topics

- Vacuum brazing processes
- Honeycomb brazing
- Wide gap brazing and gas turbine component repairs
- Brazing of PCD and other man-made hard materials
- Active brazing of ceramics

### What is involved?

Before quoting for a consultancy a detailed brief is taken to ensure that both parties understand the objectives of the consultancy and agree what needs to be delivered in order to achieve the desired outcome.

Consultancy can be delivered remotely by phone, email or video conference, or on selected days over the life of a project or in a block of days.



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Brazing

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Brazes & Weld Alloys

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