



Hangzhou Hua Guang Advanced Welding Materials Co., Ltd.





ABOUT US

Founded in 1995, Hua Guang Advanced Welding Materials Co., Ltd. specializes in the research and fabrication of a broad range of welding materials as well as providing the customers with comprehensive supportive solutions. As a leading enterprise in the field of welding industry in China, the company mainly produces copper-based and silver-based materials in the forms of rods, rings, wires, strips, foils, powder, paste, flux-cored and flux-coated with over 6,000 specifications. The products are widely applied to the industry of refrigeration, household appliances, machinery, electric appliances, aeronautics, petrochemical, automobiles, tools, hard alloys, measurements, new energy equipment, bathroom facilities, railroad systems, etc.

Hua Guang possesses a high productivity level with quality products and the capability of customizing the products according to the specific needs of the customers. The company endeavors to make technical innovations to promote the research and manufacturing of advanced materials in the related industries.

Hua Guang has established its Key Enterprise Research Institute,

R&D Centre, Technology Centre and Post-Doctoral Workstation at the provincial level successively. It has also participated in several key national and provincial projects. Moreover, the company has engaged in the drafting and revision of 3 national standards and 7 industrial standards on "Silver-Based Brazing Filler Metals" and "Copper-Based Brazing Filler Metals". In all, Hua Guang owns 24 patents and 39 utility model patents. The company has been awarded the second prize of "National Science and Technology Progress" and two honors at the provincial level.

The major customers of Hua Guang include well-known enterprises both at home and abroad. They are: Gree, Midea, Danfoss, Panasonic, Mitsubishi, York, Hitachi, Daikin, Siemens, Galanz, Sanhua, CRRC, Dongfang Electric, Shanghai Electric, GE, EPCOS, BOE Technology and Baoguang, just to name a few.

Hua Guang has become the leading enterprise in China's

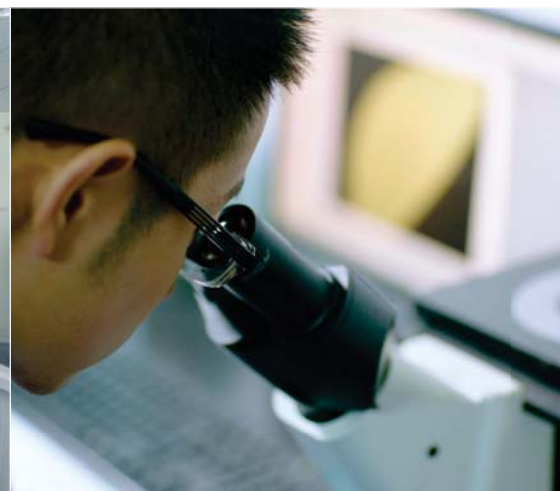
welding industry through over 20 years' development.

OUR VISIONS

To improve the standard for industrial connections, and to create win-win solutions in the industrial chain.

ENTERPRISE SPIRIT

Honesty	Confidence
Diligence	Self-Knowledge
Innovation	Self-Control
Devotion	



LEADING INNOVATION & TECHNOLOGY

Hua Guang has always focused on the importance of technological innovation and development. The company is very experienced in applying the technology to the specific needs of the clients and provide them with timely comprehensive solutions through customized and optimized services.

STRENGTH IN MANUFACTURING & DESIGN

Hua Guang is highly concerned about environmental protection, intellectualization and refined management through more than 20 years of growth. The company has been tirelessly researching the core technologies and eco-friendly products by means of upgrading its equipment and improving its engineering to reach the advanced world level.

QUALITY ASSURANCE

Hua Guang's refined management has led to its passing of ISO 9001 (quality management system), ISO 14001 (environmental management system) and OHSAS18001 (occupational health and safety management system) successively. The company applies the international standard of ISO/TS16949 to its quality management.

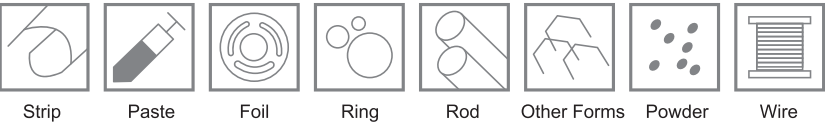
The company makes great efforts to guarantee the quality of its products through the inspection of advanced testing devices in the whole production process. The quality of its products is highly recognized by the customers both internationally and domestically. The company has been granted the honors of "outstanding supplier" by many of its customers.

PRODUCTS

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LEGEND

Manufacturing Capacities



Element Symbols

Cu	Copper	Zn	Zinc	In	Indium
P	Phosphorus	Ni	Nickel	Sn	Tin
Ag	Silver	Mn	Manganese	Si	Silicon





































SUPPLEMENTARY SPECIFICATION:

The above models and products are for examples only, and we can tailor products with different parameters requested by customers. Moreover, the parameters are just for reference and the actual product performances are subject to contracts.

SILVER BRAZING FILLER METALS

Silver brazing filler metals have low melting point, good wettability and filling performances. They also have features of high mechanical strength, fine plasticity, electrical conductivity and corrosion resistance. The filler metals are used in the brazing of stainless steel, carbon steel, hard alloys, copper and copper alloys, etc. In order to meet some specific needs in the brazing process, indium, tin or nickel can be added to compose quaternary alloys or complex alloys. Flux is usually applied to achieve the desired joints.

C	F	C
Copper alloy	Ferrous metal	Cemented carbide




























Code		Description					Base Metal	Product Forms	Introduction
		Specification /wt.%							
HUAGUANG	BAg21CuZnMnSn	Ag	Cu	Zn	Sn	Mn	C	 	The product is used to weld copper and brass with ferrous metals. It can be applied in the industries of air-conditioning and valves.
GB/T 10046	-	20~22	35~39	rem.	1.5~2.5	6~8	F	 	
AWS A5.8	-	Melting Range/°C			Joint Gap/mm		C	 	
ISO 17672	-	680~780			0.07~0.25				
HUAGUANG	BAg26CuZnInSn	Ag	Cu	Zn	In	Sn	C	 	The product is used to weld copper and brass with ferrous metals, and has the features of low melting temperature. It can be applied in the industries of air-conditioning and valves.
GB/T 10046	-	25.5~27	rem.	32~36	2.2~2.8	0.9~1.5	F	 	
AWS A5.8	-	Melting Range/°C			Joint Gap/mm		C	 	
ISO 17672	-	620~760			0.07~0.25				
HUAGUANG	BAg30CuZnSnNi	Ag	Cu	Zn	Sn	Ni	C	 	The product is used to weld copper and brass with ferrous metals. It has the feature of corrosion resistance and can be applied to the production of air-conditioners, valves and compressors.
GB/T 10046	-	29~31	34~36	rem.	1.8~2.5	0.8~1.2	F	 	
AWS A5.8	-	Melting Range/°C			Joint Gap/mm		C	 	
ISO 17672	-	650~780			0.05~0.25				
HUAGUANG	BAG34CuZnSn	Ag	Cu	Zn	Sn	-	C	 	The product is used to weld copper and brass with ferrous metals. It can be applied to the production of air-conditioners, valves and compressors.
GB/T 10046	BAG34CuZnSn	33~35	35~37	rem.	2~3	-	F	 	
AWS A5.8	-	Melting Range/°C			Joint Gap/mm		C	 	
ISO 17672	Ag 134	630~730			0.05~0.25				
HUAGUANG	BAG37CuZnSn	Ag	Cu	Zn	Sn	-	C	 	The product is used to weld copper and brass with ferrous metals. It can be applied to the production of air-conditioners, valves and compressors.
GB/T 10046	-	36~38	30~32	rem.	0.8~1.5	-	F	 	
AWS A5.8	-	Melting Range/°C			Joint Gap/mm		C	 	
ISO 17672	-	660~740			0.07~0.20				
HUAGUANG	BAG38CuZnSn	Ag	Cu	Zn	Sn	-	C	 	The product is used to weld copper and brass with ferrous metals and has the features good fluidity. It can be applied to the production of air-conditioners, valves and compressors.
GB/T 10046	-	37~39	31~33	26~30	1.5~2.5	-	F	 	
AWS A5.8	BAG-34	Melting Range/°C			Joint Gap/mm		C	 	
ISO 17672	Ag 138	649~721			0.07~0.20				





















COPPER-PHOSPHORUS BRAZING FILLER METALS

Copper and phosphorus are the two major elements in the copper-phosphorus brazing alloys. The alloys have good fluidity, low melting temperature and the ability to self-flux. They are used in the brazing of copper and copper alloys in resistance brazing, flame brazing and induction brazing without the addition of brazing flux. As phosphorus is likely to form compounds with iron, the brazing alloys are rarely used in the brazing of ferrous metals.

C Copper **B** Brass

Code		Description				Base Metal	Product Forms		Introduction
		Specification /wt.%							
HUAGUANG	BCu93P	Cu	P	-	-	C			The product is used in copper and copper welding and widely applied in air-conditioning and refrigeration industries.
GB/T 6418	BCu93P-B	rem.	6.6~7.4	-	-	B			
AWS A5.8	-	Melting Range/°C		Joint Gap/mm					
ISO 17672	CuP 180	710~820		0.05~0.17					
HUAGUANG	BCu90PSn	Cu	P	Sn	-	C			The product is mainly used in welding between copper and copper, brass and brass, and has the features of low melting temperature and good fluidity.
GB/T 6418	-	rem.	6.3~7.0	2~4	-	B			
AWS A5.8	-	Melting Range/°C		Joint Gap/mm					
ISO 17672	-	650~740		0.03~0.15					
HUAGUANG	BCu92PAg	Cu	P	Ag	-	C			The product is used in copper and copper welding and widely applied in air-conditioning and refrigeration industries.
GB/T 6418	-	rem.	6.8~7.2	0.8~1.2	-	B			
AWS A5.8	-	Melting Range/°C		Joint Gap/mm					
ISO 17672	-	650~800		0.03~0.15					
HUAGUANG	BCu93P	Cu	P	-	-	C			The product is used in copper and copper brazing, and it is widely applied in air-conditioning and refrigeration industries.
GB/T 6418	BCu93P	rem.	7.0~7.5	-	-	B			
AWS A5.8	BCuP-2	Melting Range/°C		Joint Gap/mm					
ISO 17672	CuP 181	710~793		0.05~0.17					
HUAGUANG	BCu89AgP	Cu	P	Ag	-	C			The product is used to braze copper and brass, and can braze joints with wide gaps. It is widely applied in air-conditioning and refrigeration industries.
GB/T 6418	BCu89AgP	rem.	5.8~6.2	4.8~5.2	-	B			
AWS A5.8	BCuP-3	Melting Range/°C		Joint Gap/mm					
ISO 17672	CuP 281	645~815		0.03~0.10					

Code		Description					Base Metal	Product Forms	Introduction
		Specification /wt.%							
HUAGUANG	BAG40CuZnNi	Ag	Cu	Zn	Ni	-	C		The product is used to weld copper alloy with ferrous metals. It has features of good corrosion resistance and wettability on hard alloys.
GB/T 10046	BAG40CuZnNi	39~41	29~31	26~30	1.5~2.5	-	F		
AWS A5.8	BAG-4	Melting Range/°C			Joint Gap/mm		C		
ISO 17672	Ag 440	670~780			0.10~0.25				
HUAGUANG	BAG40CuZnSn	Ag	Cu	Zn	Sn	-	C		The product is used to weld copper and brass with ferrous metals. It has narrow melting range and good welding performance, and can be used in the production of air-conditioners, valves and compressors.
GB/T 10046	BAG40CuZnSn	39~41	29~31	26~30	1.5~2.5	-	F		
AWS A5.8	BAG-28	Melting Range/°C			Joint Gap/mm		C		
ISO 17672	Ag 140	650~710			0.07~0.20				
HUAGUANG	BAG45CuZn	Ag	Cu	Zn	-	-	C		The product is used to weld copper and brass with ferrous metals. It has good adaptability to brass brazing and can be used in the production of air-conditioners, valves, compressors and motors.
GB/T 10046	BAG45CuZn	44~46	29~31	23~27	-	-	F		
AWS A5.8	BAG-5	Melting Range/°C			Joint Gap/mm		C		
ISO 17672	Ag 245	665~745			0.07~0.20				
HUAGUANG	BAG50CuZn	Ag	Cu	Zn	-	-	C		The product is used to weld non-ferrous metal with ferrous metals and has the feature of good fluidity. It can be applied to the production of air-conditioners, valves and compressors.
GB/T 10046	BAG50CuZn	49~51	33~35	14~18	-	-	F		
AWS A5.8	BAG-6	Melting Range/°C			Joint Gap/mm		C		
ISO 17672	Ag 250	690~775			0.05~0.15				
HUAGUANG	BAG55ZnCuSn	Ag	Cu	Zn	Sn	-	C		The product is used to weld non-ferrous metal with ferrous metals and has the features of low melting temperature and good fluidity.
GB/T 10046	BAG55ZnCuSn	54~56	20~22	20~24	1.5~2.5	-	F		
AWS A5.8	-	Melting Range/°C			Joint Gap/mm		C		
ISO 17672	Ag 155	630~660			0.05~0.15				
HUAGUANG	BAG56CuZnSn	Ag	Cu	Zn	Sn	-	C		The product is used in the welding of ferrous metals with non-ferrous metals. It is good in fluidity and wettability which can replace Cd-containing brazing materials and applied in food industry.
GB/T 10046	BAG56CuZnSn	55~57	21~23	15~19	4.5~5.5	-	F		
AWS A5.8	BAG-7	Melting Range/°C			Joint Gap/mm		C		
ISO 17672	Ag 156	620~655			0.05~0.15				

































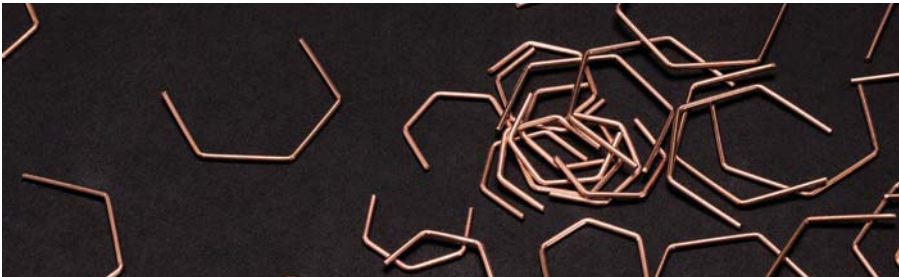


































HIGH COPPER BRAZING FILLER METALS

High copper brazing filler metals are usually applied in reducing atmosphere, inert atmosphere, or vacuum. It can braze low carbon steels, low carbon steel alloys, tungsten, molybdenum, iron, and nickel alloys. It has a wide range of applications due to its high fluidity, wettability and joint filling ability. The brazed joints have excellent electrical conductivity, thermal conductivity and plasticity.

F Ferrous metal **C** Cemented carbide

Code		Description			Base Metal	Product Forms		Introduction
		Specification /wt. %						
HUAGUANG	BCu100-A	Cu	-	Total Impurities	F			The product can braze ferrous metals and cemented carbide. It is suitable for machinery, electromechanical, refrigeration, automotive parts and other fields.
GB/T 6418	BCu100-A	≥99.95	-	≤0.03	C			
AWS A5.8	BCu-3	Melting Range/°C		Joint Gap/mm				
ISO 17672	Cu 102	1083~1083		0~0.07				
HUAGUANG	BCu100-B	Cu	-	Total Impurities	F			The product can braze ferrous metals and cemented carbide. It is suitable for machinery, electromechanical, refrigeration, automotive parts and other fields.
GB/T 6418	BCu100-B	≥99.9	-	≤0.04	C			
AWS A5.8	BCu-1b	Melting Range/°C		Joint Gap/mm				
ISO 17672	Cu 110	1083~1083		0~0.07				
HUAGUANG	BCu100(P)	Cu	P	Total Impurities	F			The product can braze ferrous metals and cemented carbide. It is suitable for machinery, electromechanical, refrigeration, automotive parts and other fields.
GB/T 6418	BCu100(P)	≥99.9	0.015~0.04	≤0.15	C			
AWS A5.8	BCu-1	Melting Range/°C		Joint Gap/mm				
ISO 17672		1083~1083		0~0.07				
HUAGUANG	BCu99(Ag)	Cu	Ag	Total Impurities	F			The product can braze ferrous metals and cemented carbide. It is suitable for machinery, electromechanical, refrigeration, automotive parts and other fields.
GB/T 6418	BCu99(Ag)	rem.	0.8~1.2	≤0.15	C			
AWS A5.8	-	Melting Range/°C		Joint Gap/mm				
ISO 17672		1070~1080		0~0.07				
HUAGUANG	BCu97Ni (B)	Cu	Ni	Total Impurities	F			The product can braze ferrous metals and cemented carbide. It is suitable for machinery, electromechanical, refrigeration, automotive parts and other fields.
GB/T 6418	BCu97Ni	rem.	2.5~3.5	≤0.15	C			
AWS A5.8	-	Melting Range/°C		Joint Gap/mm				
ISO 17672	Cu186	1083~1100		0~0.07				











































Code		Description				Base Metal	Product Forms		Introduction
		Specification /wt.%							
HUAGUANG	BCu87PAg	Cu	P	Ag	-	C			The product is used to weld copper and brass, brass and brass. It can be used in automatic brazing and is widely applied in air-conditioning and refrigeration industries.
GB/T 6418	BCu87PAg	rem.	7.0~7.5	5.8~6.2	-	B			
AWS A5.8	BCuP-4	Melting Range/°C		Joint Gap/mm					
ISO 17672	CuP 283	643~724		0.03~0.10					
HUAGUANG	BCu80AgP	Cu	P	Ag	-	C			The product is used to weld copper and brass, brass and brass. It is widely applied in motors and sanitary ware industries.
GB/T 6418	BCu80AgP	rem.	4.8~5.2	14.5~15.5	-	B			
AWS A5.8	BCuP-5	Melting Range/°C		Joint Gap/mm					
ISO 17672	CuP 284	645~800		0.03~0.15					
HUAGUANG	BCu91PAg	Cu	P	Ag	-	C			The product is used to weld copper and brass, and can braze wide gaps. It is widely applied in air-conditioning and refrigeration industries.
GB/T 6418	BCu91PAg	rem.	6.8~7.2	1.8~2.2	-	B			
AWS A5.8	BCuP-6	Melting Range/°C		Joint Gap/mm					
ISO 17672	CuP 280	643~788		0.03~0.15					
HUAGUANG	BCu80SnPAg	Cu	P	Ag	Sn	C			The product is mainly used in welding between copper and brass and has the features of low melting temperature and good fluidity.
GB/T 6418	BCu80SnPAg	rem.	4.8~5.8	4.5~5.5	9.5~10.5	B			
AWS A5.8	-	Melting Range/°C		Joint Gap/mm					
ISO 17672	-	560~650		0.03~0.15					

COPPER-ZINC BRAZING FILLER METALS

Copper-zinc brazing filler metals are mainly used in fast-heating brazing processes such as flame brazing, high-frequency induction brazing and resistance brazing. It is used to braze copper, copper alloys, steels, cast iron, and cemented carbide. Contaminantes on the surface, such as grease and oxides must be removed thoroughly before brazing. Addition of flux is necessary during brazing in order to obtain optimal brazed joints.





















C Copper **F** Ferrous metal **C** Cemented carbide

Code		Description							Base Metal	Product Forms		Introduction
		Specification /wt.%										
HUAGUANG	RCuZn-A	Cu	Zn	Si	Sn	Fe	-	-	C			The product contains Sn and Si, which can improve the wettability of the brazing alloy and prevent the volatilization of Zn during brazing.
GB/T 6418	-	56~64	rem.	< 0.5	< 1.0	< 0.25	-	-	F			
AWS A5.8	-	Melting Range/°C			Joint Gap/mm		-	-	C			
ISO 17672	-	870~900			0.05~0.25		-	-				
HUAGUANG	RCuZn-C	Cu	Zn	Si	Mn	Sn	Fe	-	C			The product contains Fe and Mn, which can improve the strength and hardness of the brazing joints. It can be used in the applications which require high brazing performance and joint strength.
GB/T 6418	BCu58ZnFeSn (Si, Mn)	56~64	rem.	0.01~0.5	0.01~0.5	0.75~1.105	0.25~1.25	-	F			
AWS A5.8	C68100	Melting Range/°C			Joint Gap/mm		-	-	C			
ISO 17672	Cu681	870~900			0.05~0.25		-	-				
HUAGUANG	RCuZn-D	Cu	Zn	Si	Mn	Sn	Fe	Ni	C			The product contains relatively high level of Ni, which can improve the plasticity of the alloy and the wettability of the brazing filler metal on cemented carbide. It is especially suitable for brazing cemented carbide, and can be used for brazing applications with high corrosion requirements, such as the brazing of steels and nickel alloys.
GB/T 6418	-	46~50	rem.	0.04~0.15	< 0.5	< 0.5	< 0.5	9~11	F			
AWS A5.8	C77300	Melting Range/°C			Joint Gap/mm		-	-	C			
ISO 17672	-	920~940			0.05~0.25		-	-				
HUAGUANG	BCu60Zn(Si)	Cu	Zn	Si	-	-	-	-	C			The product is relatively simple. Si element is used to prevent the volatilization of Zn.
GB/T 6418	BCu60Zn(Si)	58.5~61.5	rem.	0.2~0.4	-	-	-	-	F			
AWS A5.8	-	Melting Range/°C			Joint Gap/mm		-	-	C			
ISO 17672	Cu470a	875~895			0.05~0.25		-	-				
HUAGUANG	BCu59Zn(Sn)	Cu	Zn	Sn	-	-	-	-	C			The product contains Sn, and has good wettability.
GB/T 6418	BCu59Zn(Sn)	57~61	rem.	0.2~0.5	-	-	-	-	F			
AWS A5.8	-	Melting Range/°C			Joint Gap/mm		-	-	C			
ISO 17672	Cu470	875~895			0.05~0.25		-	-				

ALUMINUM BRAZING FILLER METALS

Aluminum brazing alloys have relatively low melting points, good wettability and joint filling performance, and sound anti-corrosion properties. Among these products, aluminum-silicon solder and zinc-aluminum solder are more commonly used. Zn-Al solder is usually combined with CsAlF4 eutectic flux to make flux-cored brazing alloys, which are widely used to braze aluminum-copper joints in transformer and refrigeration industries. Al-Si eutectic-based brazing filler metal is mainly used for brazing of aluminum and aluminum alloys. When brazing copper, nickel is usually plated on the copper surface to reduce the effect of brittle compounds between aluminum and copper. It can be used in flame brazing, induction brazing, furnace brazing etc., and it can form joints with high corrosion resistance.

C Copper **A** Aluminum Alloy





























Code		Description				Base Metal	Product Forms		Introduction
		Specification /wt.%							
HUAGUANG	4047	Al	Si	-	-	C			It is mainly used for brazing aluminum and aluminum alloy. It can be used in flame brazing, induction brazing, furnace brazing, vacuum brazing, etc.
GB/T 13815	BAI88Si	rem.	11~13	-	-	A			
AWS A5.8	BAISi-4	Melting Range/°C		Joint Gap/mm					
ISO 17672	Al112	575~585		-					
HUAGUANG	ZnAl22	Al	Zn	-	-	C			The product weld copper alloy and aluminum alloy, and is suitable for transformer, refrigeration industries and other fields.
GB/T 13815	-	22	78	-	-	A			
AWS A5.8	-	Melting Range/°C		Joint Gap/mm					
ISO 17672	-	410~485		-					
HUAGUANG	ZnAl2	Al	Zn	-	-	C			The product weld copper alloy and aluminum alloy, and is suitable for transformer, refrigeration industries and other fields.
GB/T 13815	-	2	98	-	-	A			
AWS A5.8	-	Melting Range/°C		Joint Gap/mm					
ISO 17672	-	385~405		-					



FILLER METALS FOR VACUUM SERVICE

Vacuum brazing filler metals have appropriate melting point, excellent wettability and filling performances. They also have high mechanical strength, good plasticity and electrical conductivity. The products are applied to the brazing of copper alloys, titanium alloys, stainless steel, carbon steel and hard alloys. Silver flux can be added in order to achieve desirable brazing joints.

C F NC
Copper Ferrous metal Nickel plated ceramics
















Code		Description				Base Metal	Product Forms		Introduction
		Specification /wt.%							
HUAGUANG	BAg50Cu	Ag	Cu	-	-	C			The product has low silver content and is suitable for the production of vacuum welding products, such as vacuum interrupters, magnetrons, electron emission tubes, discharge tubes, etc.
GB/T 10046	-	49~51	rem.	-	-	F			
AWS A5.8	BVAg-6b	Melting Range/°C		Joint Gap/mm		NC			
ISO 17672	-	750~860		0.02~0.20					
HUAGUANG	BAg70CuNi	Ag	Cu	Ni	-	C			The product has better wettability and higher welding strength. It is suitable for the production of vacuum welding products, such as vacuum interrupters, magnetrons, electron emission tubes, discharge tubes, etc.
GB/T 10046	-	rem.	27~29	1.5~2.5	-	F			
AWS A5.8	-	Melting Range/°C		Joint Gap/mm		NC			
ISO 17672	-	780~820		0.03~0.25					
HUAGUANG	BAg72Cu	Ag	Cu	-	-	C			The product has low melting temperature and is suitable for the production of vacuum welding products, such as vacuum interrupters, magnetrons, electron emission tubes, discharge tubes, etc.
GB/T 10046	BAg72Cu	71~73	27~29	-	-	F			
AWS A5.8	BVAg-8	Melting Range/°C		Joint Gap/mm		NC			
ISO 17672	Ag 272	779~779		0.02~0.20					
HUAGUANG	BAG72CuNi	Ag	Cu	Ni	-	C			The product has good wettability and is suitable for the production of vacuum welding products, such as vacuum interrupters, magnetrons, electron emission tubes, discharge tubes, etc.
GB/T 10046	-	70~72	rem.	0.5~1.0	-	F			
AWS A5.8	-	Melting Range/°C		Joint Gap/mm		NC			
ISO 17672	-	770~830		0.03~0.20					



FLUX-CORED FILLER METALS

The flux-cored filler metals are composed of outer metal skin and inner brazing flux, and can be fabricated into various shapes such as rods, wires and preforms according to customers' requests. The products have the advantages of enhancing brazing automation and efficiency, reducing and controlling the usage of flux as well as improving the quality stability. They can be used with automatic shrink-ring and induction brazing equipment to raise productivity.













C F C
Copper alloy Ferrous metal Cemented carbide

Code		Description						Base Metal	Product Forms	Introduction
		Specification /wt.%								
HUAGUANG	HGYX	Cu	Zn	Sn	Si	Mn	Ni	C		The product has higher strength and relatively higher melting temperature. It is suitable for the welding of high-strength ferrous metals as well as that of copper alloys.
GB/T 6418	-	56~62	rem.	0.5~1.5	0.1~0.5	0.2~1.0	0.2~1.5	F		
AWS A5.8	-	Melting Range/°C		Joint Gap/mm		Flux Code		C		
ISO 17672	Cu 671	870~890		0.05~0.25		HGQJ-1				
HUAGUANG	BAG30CuZn	Ag	Cu	Zn	-	-	-	C		The product can be used in the welding of copper and brass with ferrous metals. It is applied in the production of air-conditioners and valves.
GB/T 10046	BAG30CuZn	29~31	37~39	30~34	-	-	-	F		
AWS A5.8	BAG-20	Melting Range/°C		Joint Gap/mm		Flux Code		C		
ISO 17672	Ag 230	680~765		0.05~0.25		HGQJ-2				
HUAGUANG	BAG34CuZnSn	Ag	Cu	Zn	Sn	-	-	C		The product can be used in the welding of copper and brass with ferrous metals. It is applied in the production of air-conditioners and valves.
GB/T 10046	BAG34CuZnSn	33~35	35~37	25.5~29.5	2.0~3.0	-	-	F		
AWS A5.8	-	Melting Range/°C		Joint Gap/mm		Flux Code		C		
ISO 17672	Ag 134	630~730		0.05~0.20		HGQJ-2				
HUAGUANG	BAG45CuZn	Ag	Cu	Zn	-	-	-	C		The product can be used in the welding of copper and brass with ferrous metals. It is applied in the production of air-conditioners and valves.
GB/T 10046	BAG45CuZn	44~46	29~31	23~27	-	-	-	F		
AWS A5.8	BAG-5	Melting Range/°C		Joint Gap/mm		Flux Code		C		
ISO 17672	Ag 245	663~743		0.05~0.25		HGQJ-2				
HUAGUANG	BAG56CuZnSn	Ag	Cu	Zn	Sn	-	-	C		The product can be used in the welding of copper and brass with ferrous metals. It is applied in the production of air-conditioners and valves.
GB/T 10046	BAG56CuZnSn	55~57	21~23	15~19	4.5~5.5	-	-	F		
AWS A5.8	BAG-7	Melting Range/°C		Joint Gap/mm		Flux Code		C		
ISO 17672	Ag 156	620~655		0.05~0.25		HGQJ-2				

FLUX-COATED FILLER METALS

The flux-coated filler metals are composed of the preformed filler metals and coated flux. The products are similar to flux-cored filler metals in terms of improving brazing automation and efficiency as well as the quality stability. A variety of flux-coated filler metals with different functions can be selected by the customers.

C B F C
Copper Brasses Ferrous metal Cemented carbide

Code		Description					Base Metal	Product Forms	Introduction
		Specification /wt.%							
HUAGUANG	BCu92PAg	Cu	P	Ag	-	-	C		Flux-coated brazing rings are mainly used in the high frequency brazing of copper and brass. They have good fluidity and are widely applied in the industries of air-conditioning and refrigeration.
GB/T 6418	-	rem.	6.8~7.2	0.8~1.2	-	-	B		
AWS A5.8	-	Melting Range/°C			Joint Gap/mm				
ISO 17672	-	650~800			0.05~0.13				
HUAGUANG	BCu91PAg	Cu	P	Ag	-	-	C		Flux-coated brazing rings are mainly used in the high frequency welding of copper and brass. They have good fluidity and are widely applied in the industries of air-conditioning and refrigeration.
GB/T 10046	BCu91PAg	rem.	6.8~7.2	1.8~2.2	-	-	B		
AWS A5.8	BCuP-6	Melting Range/°C			Joint Gap/mm				
ISO 17672	CuP 280	643~788			0.05~0.13				
HUAGUANG	BAg21CuZnMnSn	Ag	Cu	Zn	Sn	Mn	B		Flux-coated brazing rods with high silver content are mainly used in the welding of brass and ferrous metal in the industries of air-conditioning and valves.
GB/T 10046	-	20~22	35~39	rem.	1.5~2.5	6~8	F		
AWS A5.8	-	Melting Range/°C			Joint Gap/mm				
ISO 17672	-	680~780			0.07~0.15				
HUAGUANG	BAg40CuZnSn	Ag	Cu	Zn	Sn	-	C		Flux-coated brazing rods with high silver content are mainly used in the welding of brass and ferrous metal in the industries of air-conditioning and valves.
GB/T 10046	BAg40CuZnSn	39~41	29~31	26~30	1.5~2.5	-	F		
AWS A5.8	BAG-28	Melting Range/°C			Joint Gap/mm		C		
ISO 17672	Ag 140	650~710			0.07~0.20				



FLUX

The melting point of the brazing flux should be lower than that of the brazing alloys, and it should possess good interfacial activity. Brazing flux can effectively destroy or dissolve the oxide film on the surface of the base metals and the brazing alloys, which enhances the wettability and spreading of the liquid brazing metal on the surface, thus improving the joint quality. Flux must be used in most brazing applications. This series of products can be widely applied with copper- and silver-based brazing alloys.

Code		Description				Powder	Introduction
		Specification /wt.%					
HUAGUANG	FB101	H ₃ BO ₃	KBF ₄	-	-	Powder	The product has low moisture absorption and is not prone to agglomerate. It is suitable for various copper-based and silver-based brazing filler metals with different melting points.
JB/T 6045	-	29~31	69~71	-	-		
AWS A5.8	-	Suitable Temperature/°C					
ISO 17672	-	550~850					
HUAGUANG	FB102	KF	KBF ₄	B ₂ O ₃	-	Powder	The product is highly active, and has a wide active range. It is suitable for various copper-based and silver-based brazing filler metals with different melting points.
JB/T 6045	-	41~43	22~24	34~36	-		
AWS A5.8	-	Suitable Temperature/°C					
ISO 17672	-	600~850					
HUAGUANG	FB103	KBF ₄	K ₂ CO ₃	-	-	Powder	The product has a relatively low melting point and active temperature. It is suitable for brazing filler metals with lower melting points.
JB/T 6045	-	94~96	4~6	-	-		
AWS A5.8	-	Suitable Temperature/°C					
ISO 17672	-	550~750					
HUAGUANG	FB105G	H ₃ BO ₃	KF	KBF ₄	-	Paste	The product is in liquid form, and has good fluidity. It can be used with silver, copper phosphorus, and copper phosphorus silver brazing alloys, but it is not suitable for brass brazing alloys.
JB/T 6045	-	< 50	> 20	> 25	-		
AWS A5.8	-	Suitable Temperature/°C					
ISO 17672	-	550~750					
HUAGUANG	QJ501Y	Boric acid, methyl borate, methanol, active agent, etc.				Liquid	The product will leave no residue, and requires no cleaning. It is widely used with copper-based and silver-based brazing alloys.
JB/T 6045	-						
AWS A5.8	-	Suitable Temperature/°C					
ISO 17672	-	650~850					
HUAGUANG	QJ403	Methyl borate, methanol, active agent, etc.				Liquid	Put the product into a welding torch, and use it in flame brazing. The product leaves no residue, and is highly active.
JB/T 6045	-						
AWS A5.8	-	Suitable Temperature/°C					
ISO 17672	-	> 450					





SERVICES & SUPPORT

SOLUTIONS

Hua Guang is highly experienced in providing the customers with supportive services and solutions. As an outstanding supplier for many prestigious corporations, including several Global 500, the company is customer-oriented by giving its customers comprehensive solutions in various aspects for mutual benefits.

CUSTOMER SERVICE

Hua Guang will continue to focus on the demands of the market and the needs of the customers and we welcome you to contact us for further information.

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