



SilBRAZE™

CADMIUM FREE BRAZING PRODUCTS



SILVER BRAZING ALLOYS

SilBRAZE Product Group	SilBRAZE Product	Previous Description	Ag %	Composition	Melting Range	AS1167.1 Designation & Color	Application	Replaces
Copper and Copper Based Alloys for Plumbing and HVAC&R	SilBRAZE P	TECFOS	0	Cu, P**	705 - 800°C	B1	Refrigeration heat exchangers - Economical. Least Ductile.	
	SilBRAZE 2P	AMFOS 2	2	Ag, Cu, P**	645 - 820°C	B2	Flows well. Suitable for domestic and industrial plumbing.	
	SilBRAZE 5P	SILFOS 5	5	Ag, Cu, P**	645 - 810°C	B3	More ductile, good flow. Popular for plumbing applications.	
	SilBRAZE 15P	SILFOS 15	15	Ag, Cu, P**	645 - 800°C	B4	Excellent flow and ductility. Suitable for higher vibration applications. R410A Preferred**	
Engineering Materials Cadmium Free	SilBRAZE 30	SILVERFLO 302	30	Ag, Cu, Zn, Sn*	665 - 755°C	A16	Slower flow, forms fillets which can be useful for joint filling.	Argoswift 30, Silverflo 30
	SilBRAZE 34	SILVERFLO 34	34	Ag, Cu, Zn, Sn*	630 - 730°C	A18†	Economical general purpose alloy.	Mattibraze 34, Silverflo 35
	SilBRAZE 39	SILVERFLO 39	39	Ag, Cu, Zn, Sn*	650 - 705°C	A15	General purpose alloy.	Easyflo 42
	SilBRAZE 45	SILVERFLO 45	45	Ag, Cu, Zn, Sn*	640 - 680°C	A19†	Universal general purpose alloy for refrigeration and engineering. Fluxcoat Available.	Easyflo 45, Easyflo 50
	SilBRAZE 55	SILVERFLO 55	55	Ag, Cu, Zn, Sn*	630 - 660°C	A22†	Universal general purpose alloy with lower melting point.	Easyflo 45, Easyflo 50
Tungsten carbide	SilBRAZE 40	ARGOBRAZE 40	40	Ag, Cu, Zn, Ni	660 - 780°C	A8	Economical. Good wetting. Suitable for food applications.	Easyflo 50 trifolds
	SilBRAZE 49	ARGOBRAZE 49	49	Ag, Cu, Zn, Ni, Mn	680 - 705°C	A20†	Manganese addition assists in wetting on difficult carbides.	Easyflo 503
	SilBRAZE 49LM	ARGOBRAZE 49LM	49	Ag, Cu, Zn, Ni, Mn	670 - 690°C	A21†	Lower manganese content than SilBRAZE 49. Suitable for larger carbide segments.	Easyflo 45, Easyflo 503
Stainless Steel	SilBRAZE 56	MATTIBRAZE 56	56	Ag, Cu, Zn, Sn*	620 - 650°C	A2	Food and beverage applications. Good stainless steel colour match. Fluxcoat Available.	
	SilBRAZE 56IN	ARGOBRAZE 56	56	Ag, Cu, Ni, In	600 - 710°C	A23†	Prevents crevice corrosion cracking in stainless steel joints exposed to water.	



* **Caution!** Quenching of SilBRAZE Alloys containing Tin (Sn): These alloys may be prone to cracking if quenched from high temperatures (in excess of 300C). They should not be quenched when used to braze components with widely differing coefficients of expansion.

** **Caution!** Contains phosphorous, not suitable for joining alloys containing nickel or iron. Suitable for fluxless brazing of copper. Brasses require a suitable flux.

† Pending approval to AS1167.1

BRONZE GAS WELDING ALLOYS

Product Name	Joining Process	Suitable Materials	Composition	Melting Range	Spec	Features	Comments
Mang-Bronze	Braze Welding	Steel Cast Iron Malleable Iron	Cu,Zn,Sn,Si, Mn & Fe	870 - 900°C	AWS RBCuZn-C	Low Fume High Strength	Due to dezincification, not suitable for copper pipes carrying hot water or sea water. Use Tenacity 20 Flux.
Mang Coat	Braze Welding	Steel Cast Iron Malleable Iron	Cu,Zn,Sn,Si, Mn & Fe	870 - 900°C	AWS RBCuZn-C	Low Fume High Strength Self fluxing	Due to dezincification, not suitable for copper pipes carrying hot water or sea water.
Nickel-Bronze	Braze Welding, Fusion Welding	Steel Cast Iron Malleable Iron	Cu,Zn,Ni & Si	920 - 940°C	AWS RBCuZn-D	High Strength Wear Resistant	Fusion welding of similar copper alloys Brazing of Nickel based alloys Build up of worn ferrous components. Use Tenacity 20 Flux.
Nickel Coat	Braze Welding, Fusion Welding	Steel Cast Iron Malleable Iron	Cu,Zn,Ni & Si	920 - 940°C	AWS RBCuZn-D	High Strength Wear Resistant Self fluxing	Fusion welding of similar copper alloys Brazing of Nickel based alloys.
Tobin-Bronze	Braze Welding, Fusion Welding	Brass & Bronzes, Mild Steel, Ferrous Materials	Cu, Zn	870 - 900°C	DIN L-CuZn40	Low Fume	With mild steel, low strength applications only e.g. car panel filling. Use Tenacity 20 Flux.

BRAZING FLUXES

Product Name	Working Range	Flux Type	Remarks	Residual Removal
Easyflo	575-825	Paste	General purpose flux with good fluxing activity and long life at temperature.	Residues are generally soluble in hot water. Where difficulty is encountered immersion in 10% caustic soda is suggested.
Silflux 2	600-800	Paste	Similar to Easyflo, but with a higher degree of durability for use with difficult brazing positions.	Residues are generally soluble in hot water. Where difficulty is encountered immersion in 10% caustic soda is suggested.
Tenacity 4A	600-850	Paste	A general purpose flux with good resistance to overheating, used with higher melting temperature Silver Brazing Alloys (eg liquidus between 700 and 850C).	When components are heavily oxidised, cleaning and flux removal maybe accomplished in 10% sulphuric acid.
Tenacity 5	600-900	Powder	Recommended for stainless steel assemblies where flux exhaustion is likely to occur due to prolonged heating, and also for large assemblies in steel or copper which may require prolonged heating.	When components are heavily oxidised, cleaning and flux removal maybe accomplished in 10% sulphuric acid.
Tenacity 6	550-800	Paste	Recommended for Tungsten Carbide refractory metals and stainless steel. This flux is unsuitable for use on stainless steel where crevice corrosion is likely to be a hazard in service.	Residues are virtually insoluble in water. Immersion in 10% caustic soda or mechanical removal is recommended.
Tenacity 20	750-1100	Powder	For Copper, Brass braze welding and steel brazing using bronze rods. Suitable for higher temperatures and extended cycle times. Not recommended for use with silver brazing alloys with liquidus less than 750°C mix with water to form a paste.	Immersion in 10% caustic soda or mechanical removal is recommended.

www.SilBRAZE.com

SilBRAZE is an AGR Matthey brand, Trademark pending



339 Settlement Road, Thomastown Victoria 3074 Australia
Tel: +613 9465 2111, Free call 1800 071 781, Email: silbraze@agrmatthey.com.au