



brazing & soldering **MATERIALS**

LucasMilhaupt
A Handy & Harman Company
Global Brazing Solutions



Handy & Harman's Precious Metals Group is an industry leader in the supply of precious metals and specialty alloys to Original Equipment Manufacturers (OEM's) throughout the world. The Group focuses on value-added products, and specializes in the fabrication of these materials to provide engineered solutions for their customers in the electrical/electronic, appliance, automotive, aerospace and construction industries.

Handy & Harman ranks prominently among the world's leading producers and marketers of brazing and soldering materials and technology. Over 75 years ago, Handy & Harman developed and patented many of the standard brazing products that are still in use today. These alloys are used to join most common metals as well as some specialty metals and ceramic components with strong, hermetic joints.

Lucas-Milhaupt, Inc. a wholly owned subsidiary of Handy & Harman, offers a wide variety of these metal-joining products including silver, gold, palladium, copper, nickel and aluminum based materials. The company creates value by fabricating these brazing and soldering materials into a variety of engineered forms. These specialty materials enable their customers to improve their metal joining operations by reducing overall metal-joining costs and improving productivity and quality.

Handy & Harman of Canada, Ltd., our Canadian operation, provides manufacturing, sales, and technical support for the Canadian market as well as materials for the other Group locations. Products and services include: precious metal alloys, high purity VTG alloys for critical joining applications, and refining operations to reclaim precious metals from scrap.

Our North American aluminum operation, Omni Technologies, is a manufacturer of innovative products for specialized brazing and soldering applications including aluminum cored and coated materials used in the automotive and HVAC/R industries.

Internationally, Protechno s.a. is a manufacturer of specialty brazing and soldering materials (including flux cored and coated products) and a technical resource for European industry. Lucas-Milhaupt Brazing Materials (Suzhou) Co., Ltd. provides technical services and brazing materials for the Asian market.



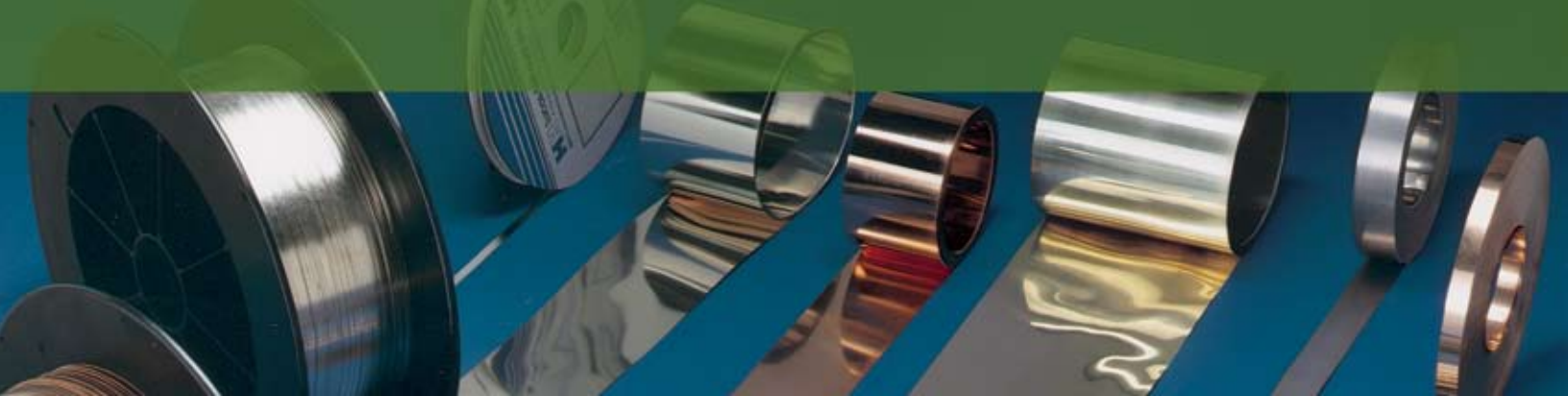
Brazing and Soldering Filler Metals

The following brazing and soldering materials are available in a wide variety of forms including wire, rod, preformed rings and foil. They are also available in atomized powder for blending with binder systems for making pastes. If you have questions, please contact your Sales Representative, or send us an email at info@lucasmilhaupt.com

CADMIUM-FREE BRAZING ALLOYS

Filler Metal	AWS Classifications	AMS	Temperatures				Composition (Wt.%)				Comments
			Solidus		Liquidus		Ag	Cu	Zn	Other	
			F°	C°	F°	C°					
Braze™ 051			1545	840	1615	879	5.0	58.0	37.0		Good for combining heat treating and brazing of ferrous materials.
Braze 071			1225	662	1805	984	7.0	85.0		8.0 Sn	Economical alloy, very sluggish.
Braze 202			1315	712	1500	815	20.0	45.0	35.0		For steel when combining brazing and heat treating.
Braze 252	BAg-26		1305	707	1475	801	25.0	38.0	33.0	2.0 Mn, 2.0 Ni	Economical material for tungsten carbide, stainless steel and steel.
Braze 300	BAG-20		1250	676	1410	765	30.0	38.0	32.0		For steel and non-ferrous alloys.
Braze 351	BAG-35		1265	684	1390	754	35.0	32.0	33.0		Intermediate temperature, moderate flow. Cd-free replacement for EF 35.
Braze 380	BAG-34	4761	1200	648	1330	720	38.0	32.0	28.0	2.0 Sn	Ductile, free flowing alloy, for iron and Cu base metals with small gaps.
Braze 401		4762	1245	673	1340	726	40.0	30.0	30.0		For copper based alloys, mild steel, Ni and Monel.
Braze 402	BAG-28		1200	648	1310	709	40.0	30.0	28.0	2.0 Sn	Free flowing filler metal for ferrous, non-ferrous and dissimilar metals.
Braze 403	BAG-4		1240	670	1435	779	40.0	30.0	28.0	2.0 Ni	For tungsten carbides and stainless food handling equipment.
Braze 450	BAG-5		1225	662	1370	743	45.0	30.0	25.0		For band instruments (copper alloys), brass lamps.
Braze 452	BAG-36		1195	643	1251	677	45.0	27.0	25.0	3.0 Sn	Low temperature, free flowing, Cd-free alloy.
Braze 495	BAG-22		1260	682	1290	698	49.0	16.0	23.0	7.5 Mn, 4.5 Ni	For low temperature brazing of tungsten carbides and stainless steels.
Braze 502 (503 VTG)	BVAg-6b		1435	779	1600	870	50.0	50.0			For electrical components where Cd and Zn are not desired.
Braze 505	BAG-24	4788	1220	659	1305	707	50.0	20.0	28.0	2.0 Ni	For Ni and Fe base alloys – 300 SS. Retards interface corrosion.
Braze 541	BAG-13	4772	1325	718	1575	856	54.0	40.0	5.0	1.0 Ni	Furnace brazing; for stainless steels used at elevated temperatures.
Braze 559	BAG-13a	4765	1420	770	1640	892	56.0	42.0		2.0 Ni	Atmosphere brazing for high temperature applications (contains no Zn).
Braze 560	BAG-7	4763	1143	618	1205	651	56.0	22.0	17.0	5.0 Sn	Lowest temperature, Cd-free silver brazing alloy.
Braze 580			1120	604	1345	729	57.5	32.5		7.0 Sn, 3.0 Mn	For brazing steels that are to be Ti-nitrided. Zn free
Braze 600			1245	673	1325	718	60.0	25.0	15.0		For Monel and other nickel alloys.
Braze 604	BVAg-18 Gr2		1115	601	1325	718	60.0	30.0		10.0 Sn	Low temperature seals on vacuum assemblies.
Premabrazo® 616	BVAg-29 Gr2		1155	623	1305	707	61.5	24.0		14.5 In	For ferrous and non-ferrous in moderate temperature vacuum.
Braze 630	BAG-21	4774	1275	690	1475	801	63.0	28.5		6.0 Sn, 2.5 Ni	Stainless steel food equipment – Good corrosion resist.
Braze 650	BAG-9		1240	670	1325	718	65.0	20.0	15.0		For silverware, Fe and Ni alloys.
Braze 700	BAG-10		1275	690	1360	737	70.0	20.0	10.0		For silverware when subsequent joints are made with BR 650.
Braze 716	BVAg-8b Gr2		1435	779	1463	794	71.5	28.0		.5 Ni	For use in atmosphere or vacuum brazing of Ni and Fe based alloys.
Lithobrazo 720	BAG-8a		1400	759	1400	759	71.7	28.0		.3 Li	For brazing in dry hydrogen or inert atmosphere. Good for thin section SS.
Braze 721	BVAg-8 Gr2		1435	779	1435	779	72.0	28.0			For non-ferrous electronic components; moderate vacuum.
LM 721 Grade 1	BVAg-8 Gr1		1435	779	1435	779	72.0	28.0			Same as Braze 721 – highest purity for vacuum application.
Braze 750			1365	740	1450	787	75.0	22.0	3.0		Joining Fe and Ni base alloys (furnace brazing).
Braze 852	BAG-23	4766	1760	959	1780	970	85.0			15.0 Mn	For stainless steels, Stellite, Inconel, chromium and titanium carbides.
Lithobrazo 925	BAG-19	4767	1400	759	1635	890	92.5	7.3		.2 Li	For furnace brazing of stainless steels without flux. Stainless honeycomb.
Fine Silver (BR999)	BVAg-0 Gr2		1761	960	1761	960	99.0				Pure silver alloy.





COPPER-PHOSPHORUS BRAZING ALLOYS For Brazing Copper and Copper Based Alloys

Filler Metal	AWS Classifications	AMS	Temperatures				Composition (Wt.%)					Comments	
			Solidus		Liquidus		Ag	Cu	P	Other			
			F°	C°	F°	C°							
Sil-Fos® 18			1190	643	1190	643	18.0	74.5	7.25				Low melting point. Good flow for tight fitting joints.
Sil-Fos	BCuP-5		1190	643	1300*	704	15.0	80.0	5.0				For joints with large clearances; slow flow.
Sil-Fos 6	BCuP-4		1190	643	1275*	690	6.0	86.7	7.3				Very fluid filler metal for tight fitting joints.
Sil-Fos 6M			1190	643	1300*	704	6.0	88.0	6.0				Ability to fill gaps and form fillets; slow flow.
Sil-Fos 5	BCuP-3		1190	643	1325*	718	5.0	89.0	6.0				Same as Sil Fos.
Sil-Fos 2	BCuP-6		1190	643	1325*	718	2.0	91.0	7.0				Slow flow; for joints where good fit-up is not maintained.
Sil-Fos 2M			1190	643	1350*	731	2.0	91.4	6.6				Will fill moderate gaps in poorly fit joints; slow flow.
Fos Flo® 7	BCuP-2		1310	709	1350*	731		92.7	7.3				Low cost filler metal for copper and copper alloys. Needs good fit-up.
Fos Flo 6			1310	709	1375*	745		94.0	6.0				Moderate flow, able to bridge large gaps, more ductile joints.
Fos Flo 670			1215	657	1270	687		87.0	6.0		7.0 Sn		Very free flowing alloy for tight fit-us. Paste and Powder Only.
Fos Flo 671			1134	612	1260	682		85.3	6.2		7.0 Sn, 1.5 Ni		Low temperature Silver-free alloy; very free flowing. Paste and Powder Only.

* The true liquidus is higher, however, the alloy will flow freely and make strong joints at the indicated temperature.

HIGH TEMPERATURE BRAZING ALLOYS

Filler Metal	AWS Classifications	AMS	Temperatures				Composition (Wt.%)					Comments	
			Solidus		Liquidus		Ni	Cu	Mn	Zn	Other		
			F°	C°	F°	C°							
Hi-Temp® 095		4764	1615	879	1700	926	9.5	52.5	38.0				High strength, for joining carbides, steel and heat resistant alloys.
Hi-Temp 080			1575	856	1675	912	8.0	54.8	12.0	25.0		0.2 Si	High strength alloy for joining carbides and steels.
Hi-Temp 548			1615	879	1685	917	6.0	55.0	4.0	35.0			Low melting copper-based filler metal for carbides, etc.

Nickel (BNi) FILLER METALS

Filler Metal	AWS Classifications	AMS	Temperatures				Composition (Wt.%)						Comments
			Solidus		Liquidus		Ni	Cr	Si	B	Fe	Other	
			F°	C°	F°	C°							
Hi-Temp 720	BNi-1	4775	1790	977	1900	1038	73.65	14	4	3.1	4.5	0.75 C	For S.S., Ni & Co alloys. High strength, heat resistant.
Hi-Temp 820	BNi-2	4777	1780	971	1830	999	82.34	7	4.5	3.1	3	0.06 C	Furnace brazing aircraft, medical and food equipment.
Hi-Temp 910	BNi-3	4778	1800	982	1900	1038	91.84		4.5	3.1	1.5	0.06 C	Same as Hi-Temp 720, but better in marginal atmosphere.
Hi-Temp 930	BNi-4	4779	1800	982	1950	1066	93.09		3.5	1.85	1.5	0.06 C	For S.S., Ni & Co based alloys with thin sections.
Hi-Temp 932	BNi-6		1610	877	1610	877	89.0					11.0 P	Cr-free. Good corrosion resistance & high temp properties.
Hi-Temp 933	BNi-7		1630	888	1630	888	75.9	14.0				10.1 P	Honeycomb and thin walled structures. Contains Cr.

ALUMINUM ALLOYS

Filler Metal	AWS Classifications	AMS	Temperatures				Composition (Wt.%)					Comments	
			Solidus		Liquidus		Al	Cu	Si	Zn	Other		
			F°	C°	F°	C°							
Al 716	BAISi-3	4184	970	521	1085	584	86.0	4.0	10.0			1.0 Fe	Long melting range; brazing of Al alloys using a fast heat.
Al 718	BAISi-4	4185	1070	576	1080	582	88.0		12.0				Brazing alloy for furnace, dip and torch brazing of Al base metals.
Al 719			960	516	1040	559	75.0	4.0	10.0	10.0			Lower melting with reduced flow and corrosion resistance.
Al 802			710	376	725	385	2.0			98.0			Used in automotive applications.
													Solder for joining aluminum and aluminum alloys.

GOLD/PALLADIUM/ELECTRONIC ALLOYS*

Filler Metal	AWS Classifications	AMS	Temperatures				Composition (Wt.%)					Comments
			Solidus		Liquidus		Au	Ni	Pd	Cu	Other	
			F°	C°	F°	C°						
Premabraz® 051	BAu-3		1625	884	1643	894	75.0			20.0	5.0 Ag	Narrow melting range, low temperature filler metal.
Premabraz 127			1785	973	1885	1028	35.0	3.0		62.0		For Ni, Mo, SS, Kovar and Mo/Mn metallized ceramic; low base metal penetration.
Premabraz 131	BVAu-4 Gr-1	4787	1740	948	1740	948	82.0	18.0				For SS, Inconel, Kovar, etc., oxidation resistance to 1500°F., for vacuum applications.
Premabraz 180	BAu-1		2245	1228	2255	1234			65.0		35.0 Co.	High temperature filler metal; low penetration of substrates.
Premabraz 265			1562	849	1652	899			15.0	20.0	65.0 Ag	Good for SS, Cu, Kovar, Mo/Mn metallized ceramic.
Premabraz 399			1815	990	1860	1015	37.5			62.5		For Cu, Ni, Kovar and Mo/Mn metallized ceramic.
Premabraz 402			1751	954	1778	969	50.0			50.0		For Cu, Ni, Kovar and Mo/Mn metallized ceramic.
Premabraz 407			1814	989	1850	1009	35.0			65.0		For Cu, Ni, Kovar and Mo/Mn metallized ceramic.
Premabraz 408			1535	834	1553	844	60.0			20.0	20.0 Ag	Narrow melting range. Useful for step-brazing.
Premabraz 409			1670	909	1697	924	81.5	2.0		16.5		For Cu, Ni, Mo/Mn coated ceramics; remains ductile.
Premabraz 500			BVAu-7 Gr1	4784	2015	1101	2050	1120	50.0	25.0	25.0	
Premabraz 540	BVAg-32 Gr1		1650	898	1740	948			25.0	21.0	54.0 Ag	For SS, Inconel, Kovar®, etc. Lower cost and density than gold alloys.
Premabraz 580	BVAg-31 Gr1		1515	823	1565	851			10.0	32.0	58.0 Ag	For Cu, Ni, Kovar and Mo/Mn metallized ceramic. Excellent for vacuum tight joints.
Premabraz 680	BVAg-30 Gr1		1485	806	1490	809			5.0	27.0	68.0 Ag	Good for Kovar and Mo/Mn seals.
Premabraz 700	BAu-6	4786	1845	1006	1915	1045	70	22	8			For Super alloys and SS. High ductility and strength.

*NOTE: While generally available, inventory levels may be limited due to the high precious metal content. Please check with your customer service representative for specific delivery. Kovar is a registered trademark of CRS Holdings.

LOW TEMPERATURE BRAZING ALLOYS**

Filler Metal	AWS Classifications	AMS	Temperatures				Composition (Wt.%)					Comments	
			Solidus		Liquidus		Ag	Cu	Zn	Cd	Other		
			F°	C°	F°	C°							
Easy-Flo®	BAG-1a	4770	1160	626	1175	634	50.0	15.5	16.5	18.0		3.0 Ni	Joining of ferrous, non-ferrous, dissimilar metals and alloys.
Easy-Flo 3	BAG-3	4771	1170	632	1270	687	50.0	15.5	15.5	16			High strength material for brazing carbide, Ni and Fe alloys. Recommended for SS.
Easy-Flo 45	BAG-1	4769	1125	607	1145	618	45.0	15.0	16.0	24.0		18.0	Versatile alloy; used for most ferrous and non-ferrous metals.
Easy-Flo 35	BAG-2	4768	1125	607	1295	701	35.0	26.0	21.0				General purpose alloy for ferrous and non-ferrous metals; fills larger gaps.
Easy-Flo 30	BAG-2a		1125	607	1310	709	30.0	27.0	23.0	20.0			For joining ferrous, non-ferrous and dissimilar metals; slow flow.
Braze™ 053 (TEC)			640	337	740	393	5.0			95.0		1.0 P	High strength, high temperature solder filler metal.
Braze 056			480	249	600	315	5.0		16.6	78.4			High strength, high temperature solder filler metal.
Braze 440			1100	590	1220	659	44.0	27.0	13.0	15.0			For molybdenum brazing and electrical contacts.

**SAFETY NOTE: While Cadmium bearing alloys have been extremely popular and versatile filler for decades, we are aware of the potential hazards associated with them. These alloys should only be used in well ventilated areas. Lucas-Milhaupt is prepared to assist you in the proper and safe use of these alloys. For additional information contact our Technical Service Team.





COPPER ALLOYS

Filler Metal	AWS Classifications	AMS	Temperatures				Composition (Wt.%)						Comments	
			Solidus		Liquidus		Cu	Zn	P	Sn	Other			
			F°	C°	F°	C°								
OFHC Certified Copper	BVCu-1x		1981	1082	1981	1082	99.99							For furnace brazing of steel, SS and Ni-based alloys.
CDA 102	BCu-1		1981	1082	1981	1082	99.95							Joining of ferrous, Ni-based and Cu-Ni alloys. Free Flowing. Joining of ferrous, Ni-based and Cu-Ni alloys. Free Flowing. Use on steels where brazing temperatures lower than Cu are needed.
CDA 110			1981	1082	1981	1082	99.9							
CDA 510			1750	953	1920	1048	95.0		0.3	4.7				
CDA 521			1620	881	1882	1026	92.0		0.3	7.7			Use on steels where brazing temperatures lower than Cu are needed.	
CDA 681	RBCuZn-C		1595	865	1620	887	58.0	40.0		1.0		1.0 Fe	Joining of ferrous, copper and nickel alloys. Fluid alloy.	

SOLDER ALLOYS

Filler Metal	AWS Classifications	AMS	Temperatures				Composition (Wt.%)						Comments	
			Solidus		Liquidus		Sn	Pb	Ag	Sb	Other			
			F°	C°	F°	C°								
63 Sn/37 Pb			361	183	361	181	63.0	37.0						Eutectic – highest strength of tin/lead alloy series.
60 Sn/40 Pb			361	183	374	190	60.0	40.0						Electronic and general purpose alloy.
50 Sn/50 Pb			361	183	421	216	50.0	50.0						Good general purpose alloy.
40 Sn/60 Pb			361	183	460	238	40.0	60.0						Long melting range solder, will fill larger gaps.
96.5 Sn/3.5 Ag			430	221	430	221	96.5		3.5					Eutectic alloy. Wets Cu, brass, steel and stainless steel.
95 Sn/5 Sb			452	233	464	240	95.0				5.0			For Cu and Fe based alloys; good creep strength. Not for brass.
97.5 Pb/2.5 Ag			579	304	579	304		97.5	2.5					High temperature eutectic alloy.
97.5 Pb/1.5 Ag/1 Sn			588	309	588	309	1.0	97.5	1.5					Good corrosion resistance in humid atmospheres.

HANDY ONE® FAMILY OF FLUX CORED BRAZING MATERIALS

Filler Metal	AWS Classifications	AMS	Temperatures				Composition (Wt.%)						Comments	
			Solidus		Liquidus		Ag	Cu	Zn	Sn	Other			
			F°	C°	F°	C°								
Braze™ 300	BAG-20		1250	675	1410	765	30.0	38.0	32.0					General purpose filler metal for joining ferrous and non-ferrous metals. Sluggish flow, enables filling large gaps. Not recommended for stainless.
Braze 380	BAG-34		1200	648	1330	720	38.0	32.0	28.0	2.0				A free flowing filler metal used with ferrous and non-ferrous base metals.
Braze 505	BAG-24		1220	659	1305	707	50.0	20.0	28.0			2.0 Ni		Excellent general purpose alloy. Joins Ni and Fe based alloys, and Stainless Steel.
Braze 560	BAG-7		1145	618	1205	651	56.0	22.0	17.0	5.0				Lowest temperature, Cd-free, silver brazing filler metal. Good color match for Stainless Steel.

TRIMET® ALLOYS FOR JOINING CARBIDES

Filler Metal	AWS Classifications	AMS	Temperatures				Composition (Wt.%)						Comments	
			Solidus		Liquidus		Ag	Cu	Zn	Ni	Other			
			F°	C°	F°	C°								
Trimet® 258			1170	632	1270	687								Easy-Flo 3 on both sides of copper in 1-2-1 ratio. Braze 505 on both sides of copper, Cd-free with higher strength and better flow qualities than Trimet 258. 1-2-1
Trimet 259			1220	659	1305	707								

Brazing and Soldering Pastes

Paste products consist of an atomized filler metal powder, a flux (when necessary) and a binder to hold the components together in suspension. Pastes, like preforms, are advantageous because with the correct dispensing equipment, tight control can be made on material usage. This can reduce your unit costs and yield consistent high quality joints. And because pastes are essentially formless in nature, one paste product could be suitable for a wide variety of joint configurations.

Additional advantages of pastes include the ability to control so many of the performance characteristics. For example, the viscosity or thickness of the paste can be modified for your particular dispensing requirements. Another characteristic that can be adjusted is the size of the filler metal powder, and we offer a range of particle sizes to provide the best balance between cost and performance. Paste can also be formulated to behave differently during the heating cycle. This is referred to as the “slump” or restrictiveness of the product.

Because we offer so many different options, it is recommended that a Lucas-Milhaupt Application Engineer is involved in the selection of the paste. Discussion on the specifics of your operation enables us to recommend the most suitable paste formulation.

Lucas-Milhaupt offers a number of flux-binder systems for most brazing and soldering applications including:

Brazing and Soldering Pastes

Flux Binder System	Active Range for Flux	Applications and Uses
Handy Flo® 100 Series	550°C – 900°C 1100°F – 1650°F	General purpose flux binder systems for use with most common brazing alloys in torch, induction and resistance brazing operations.
Handy Flo 200 Series	800°C – 1200°C 1500°F – 2200°F	Designed for higher temperature brazing applications in the 1500° to 2200° F Range. For use in torch, induction, resistance brazing operations.
Handy Flo 300 Series	Flux Free	Exceptionally clean-burning system for controlled atmosphere and vacuum brazing operations. For use with High Purity or VTG brazing alloys.
Handy Flo 400 Series	Flux Free	High temperature furnace binder system for brazing in exothermic, dissociated ammonia and vacuum. Typically used with Ni, Cu and bronze brazing alloys.
Handy Flo 600 Series	550°C – 900°C 1100°F – 1650°F	The Handy Flo 600 series is a clean-burning, furnace brazing binder system for use with the CuproBraze® alloys for joining copper and brass radiators.
Handy Flo 700 Series	500°C – 600°C 930°F – 1100°F	Flux binder series for use with aluminum brazing alloys in open-air (torch, induction) operations. Available in both corrosive and non-corrosive formulations.
Handy Flo 800 Series	150°C – 315°C 300°F – 600°F	Low temperature, flux binder systems for soldering applications under 450°C / 840°F. For use in open-air applications including torch, induction, resistance, infrared and oven. Easy clean up with a water rinse.

These flux binder systems are blended with an appropriate filler metal powder to form a completed paste product. Please see the list of brazing and soldering filler metals to select the proper alloy for your application. For additional information or assistance in selecting the correct combination of flux binder and filler materials, please contact your Sales Representative or our Technical Services Department at info@lucasmilhaupt.com

CuproBraze is a registered trademark of the International Copper Association, Ltd.





A Flux for Every Brazing Need.

Flux is critical to the brazing and soldering process because it minimizes the oxidation that may form on both the brazing filler metal and the materials being joined. Numerous formulations of flux are available for virtually all metal joining operations.

The majority of common brazing applications are readily met by Handy Flux®, the general purpose flux that has remained an industry standard for over 70 years. It is a powerful general purpose flux that protects your parts up to 1600°F (871°C).

For low temperature brazing, Sure Flo Flux is a creamy and smooth composition that provides excellent adhesion to parts. Its consistent blend will not spatter or run during a rapid heating cycle. Sure Flo offers excellent fluxing action and oxide removal and will not crystallize under normal conditions.

We also offer fluxes for virtually every specialized application including formulations for high and low temperature applications, furnace and induction brazing, as well as those for automatic flux dispensers.

For more information on any of these fluxes, or a recommendation on which flux to use, contact our Technical Services Department.

Brazing and Soldering Fluxes

Name of Flux and Form	Application	Description	Availability
Handy Flux® Paste	All purpose, low temperature flux for use in brazing both ferrous and nonferrous metals and alloys.	Handy Flux is an active fluoride/borate-type flux which begins to melt and dissolve oxides at 600°F (320°C). Fully molten at 1100°F (600°C), it provides excellent protection of parts up to 1600°F (870°C). Cleanup should be with hot water.	1/2, 1 and 5 lb. (227, 454 g. and 2.27 kg.) jars. Also 25 and 50 lb. (11.34 and 22.68 kg.) pails. (870°C).
Sure Flo Flux Paste	General purpose, low temperature brazing flux which provides excellent adhesion and creamy smooth consistency. For brazing ferrous and non-ferrous alloys.	Same as Handy Flux. Sure Flo Flux dissolves the oxides that form on copper brass, nickel, monel, steel and stainless steel during heating. Will not crystallize.	1 and 5 lb. (454 g. and 2.27 kg.). Also 25 and 50 lb. (11.34 and 22.68 kg.) pails.
Handy Flux Type Slurry	For automatic dispensing as controlled dabs or sprays.	This flux has the same combination of salts as Handy Flux, with additives to provide a lower (pourable) viscosity. Type DB has an additional boron formulation for use with more refractory oxides, such as in automated brazing of carbides.	50 lb. (22.68 kg.) pails and 12.5 lb. (5.67 kg.) bottles.
Sure Flo D & DB Slurry	For automatic dispensing as controlled deposits from applicator guns.	Same as Handy Flux Type D. Same fluxing salts formulated with a viscosity to allow dispensing from pneumatic equipment—provides excellent protection.	1 and 5 lb. (454 g. and 2.27 kg.). Also 25 and 50 lb. (11.34 and 22.68 kg.) pails.
Handy Flux Type B-1 Paste	For brazing high chromium stainless steels, tungsten and chromium carbides, and molybdenum alloys.	Particularly in applications where a larger amount of refractory oxides may form, use Handy Flux Type B-1 (boron modified). Its temperature range is 1100° to 1700°F (600°-925°C). It is valuable where local overheating may occur, as in fast induction heating.	1 and 5 lb. (454 g. and 2.27 kg.) jars. Also 25 and 50 lb. (11.34 and 22.68 kg.) pails.
Sure Flo Black Paste	Same as Handy Flux B-1. Ideally suited for induction heating where localized over-heating, or longer heating cycles may occur.	Same as Handy Flux B. Ideally suited where refractory oxides may form (chromium tungsten, etc.). Better brushability and excellent adhesion – will not spatter.	1 and 5 lb. (454 g. and 2.27 kg.). Also 25 and 50 lb. (11.34 and 22.68 kg.) pails.



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