

The New Standard in Brazing

# EcoBraze®



**Castolin Eutectic®**  
**Eutectic Castolin**

## EcoBraz 38230

EcoBraz 38230 is a good general purpose, intermediate temperature brazing alloy for use on copper, brass, nickel-silver, bronze, mild steel, and other nonferrous base metals melting above 1500°F (816°C). This light yellow color (as brazed) cadmium-free filler metal is used in brazing nickel-silver hollow knife handles and electrical equipment. The long melting range of this filler metal make it useful when wide gap joints are brazed and in producing large joint fillets to reduce the notch effect on stressed assemblies. Where higher brazing temperatures are permissible, the lower silver content of this filler metal affords savings.

Nominal Composition					Solidus	Liquidus	Recommended Brazing Range	AWS A 5.8	Fed. Spec. QQ-B-654A	SAE/Aeronautical Mat'l Spec.	Density	Approximate Wire Length (In / Troy Oz)		
Ag	Cu	Zn	Sn	Ni								1/16"	3/32"	1/8"
30	38	32	0	0	1250°F (676°C)	1410°F (765°C)	1410° - 1520°F (765° - 826°C)	B-Ag-20	NA	NA	4.547 Tr Oz/in <sup>3</sup>	71.7	31.9	17.9

## EcoBraz 38233

A special brazing alloy developed by Eutectic Corporation to afford the economy of a 30 % silver, copper, zinc alloy but the performance of the other silver, copper, zinc brazing alloys containing higher silver contents (up to 45 %). Its' balanced copper / zinc content provide good ductility and fluid flow, yet the joint gapping capabilities of EcoBraz 38233 are beyond .005". This brazing alloy is excellent for use on commercial tubing and fittings (HVAC), brass lamps, band instruments, and electrical components. EcoBraz 38233 works well on steels and stainless steels, copper, brass, bronze, and nickel silver.

Nominal Composition					Solidus	Liquidus	Recommended Brazing Range	AWS A 5.8	Fed. Spec. QQ-B-654A	SAE/Aeronautical Mat'l Spec.	Density	Approximate Wire Length (In / Troy Oz)		
Ag	Cu	Zn	Mn	Ni								1/16"	3/32"	1/8"
33	34	33	0	0	1292°F (700°C)	1364°F (740°C)	1364° - 1440°F (740° - 782°C)	NA	NA	NA	4.6 Tr Oz/in <sup>3</sup>	71.1	31.6	17.8

## EcoBraz 38235

EcoBraz 38235 is a good general purpose, intermediate temperature brazing alloy for use on copper, brass, bronze, mild steel, stainless steel, nickel alloys or combinations of these alloys. This light yellow color (as brazed) cadmium-free brazing alloy is useful in bridging gaps where poor fit-up and non-uniform clearances cannot be avoided. Used in the assembly of tubes for the refrigeration industry.

Nominal Composition					Solidus	Liquidus	Recommended Brazing Range	AWS A 5.8	Fed. Spec. QQ-B-654A	SAE/Aeronautical Mat'l Spec.	Density	Approximate Wire Length (In / Troy Oz)		
Ag	Cu	Zn	Sn	Ni								1/16"	3/32"	1/8"
35	32	33	0	0	1265°F (685°C)	1390°F (754°C)	1390° - 1500°F (754° - 815°C)	B-Ag-35	NA	NA	4.568 Tr Oz/in <sup>3</sup>	70	31.4	17.7

## EcoBraz 38240NI

EcoBraz38240NI is a cadmium-free intermediate temperature brazing alloy for use on small tungsten carbides, stainless steels, mild steels, cast and malleable irons and various non-ferrous alloys. This light yellow color (as brazed) brazing alloy is useful for brazing stainless steel food containers and food handling equipment. Since it has a fairly long melting range (195°F), it is preferable to use this filler metal where the assembly joint can be rapidly heated. This nickel containing filler metal offers added joint corrosion resistance compared to other non-nickel containing cadmium-free filler metals.

Nominal Composition					Solidus	Liquidus	Recommended Brazing Range	AWS A 5.8	Fed. Spec. QQ-B-654A	SAE/Aeronautical Mat'l Spec.	Density	Approximate Wire Length (In / Troy Oz)		
Ag	Cu	Zn	Sn	Ni								1/16"	3/32"	1/8"
40	30	28	0	2	1240°F (671°C)	1435°F (779°C)	1435° - 1540°F (779° - 837°C)	B-Ag-4	NA	NA	4.658 Tr Oz/in <sup>3</sup>	70	31.1	17.5

## EcoBraz 38245

EcoBraz 38245 is an excellent intermediate temperature brazing alloy with a good temperature range. This yellow white color (as brazed) brazing alloy is used to braze joints within the range of fits encountered in commercial tubing and fittings. EcoBraz 38245 has found considerable application in pipe brazing in the ship construction industry and for such items as band instruments, brass lamps, aircraft engine coolers, plus other applications where a high strength, ductile joint is required. The corrosion resistance of this alloy is similar to cartridge brass. This type of alloy will permit corrosion in flux brazed joints on stainless steels.

Nominal Composition					Solidus	Liquidus	Recommended Brazing Range	AWS A 5.8	Fed. Spec. QQ-B-654A	SAE/Aeronautical Mat'l Spec.	Density	Approximate Wire Length (In / Troy Oz)		
Ag	Cu	Zn	Sn	Ni								1/16"	3/32"	1/8"
45	30	25	0	0	1250°F (676°C)	1369°F (743°C)	1369° - 1500°F (743° - 815°C)	BAG-5	BAG-5	NA	4.728 Tr Oz/in <sup>3</sup>	69	30.7	17.3

## EcoBraz 38245SN

EcoBraz 38245SN is a general purpose, low temperature filler metal used in cadmium-free brazing. This pale yellow color (as brazed) brazing alloy offers an excellent compromise between low temperature brazing and moderate silver content. EcoBraz 38245SN behaves similar to EcoBraz 38256SN - except for color - and is suitable for narrow gap applications. It is excellent for dissimilar base metals and is used for numerous applications in the refrigeration and air conditioning industries..

Nominal Composition					Solidus	Liquidus	Recommended Brazing Range	AWS A 5.8	Fed. Spec. QQ-B-654A	SAE/Aeronautical Mat'l Spec.	Density	Approximate Wire Length (In / Troy Oz)		
Ag	Cu	Zn	Sn	Ni								1/16"	3/32"	1/8"
45	27	25	3	0	1184°F (640°C)	1256°F (680°C)	1256° - 1400°F (680° - 760°C)	BAG-36	NA	NA	4.696 Tr Oz/in <sup>3</sup>	69.4	30.9	17.4

## EcoBraz 38249

A cadmium - free low temperature brazing alloy filler metal used extensively for brazing tungsten carbide inserts to cutting tools and rock drills. It can be used for joining all types of steels and stainless steels. It exhibits excellent wetting on tungsten carbide or tungsten carbide with moderate additions of titanium carbide, tantalum carbide, and niobium carbide in a cobalt or nickel binder. Because of its high manganese content, it may tend to liquate (separate into low and high melting constituents), which can be mitigated by rapidly heating the joint assembly through its melting point. In furnace brazing, EcoBraz 38249 works best when it is pre - placed in the joint area in the form of a shim. Carbide brazing test results using this alloy are excellent. In equivalent destructive tests, EcoBraz 38249 yields the same results as the old traditional 50%silver, cadmium / nickel alloy.

Nominal Composition					Solidus	Liquidus	Recommended Brazing Range	AWS A 5.8	Fed. Spec. QQ-B-654A	SAE/Aeronautical Mat'l Spec.	Density	Approximate Wire Length (In / Troy Oz)		
Ag	Cu	Zn	Sn	Ni								1/16"	3/32"	1/8"
49	16	23	7.5	4.5	1260°F (682°C)	1290°F (699°C)	1290° - 1400°F (699° - 760°C)	BAG-22	NA	NA	4.7 Tr Oz/in <sup>3</sup>	69.5	31	17.5

## EcoBraz 38250NI

EcoBraz 38250NI readily wets nickel and iron. This white color (as brazed) brazing alloy is recommended for joining 300 series stainless steel and will retard interface corrosion. The presence of nickel aids in the joining of small tungsten carbide inserts in cutting tools. Because EcoBraz 38250NI is a cadmium-free alloy, it can be safely used on food handling equipment and medical and dental utensils. This nickel containing filler metal offers added joint corrosion resistance compared to other non-nickel containing cadmium-free filler metals.

Nominal Composition					Solidus	Liquidus	Recommended Brazing Range	AWS A 5.8	Fed. Spec. QQ-B-654A	SAE/Aeronautical Mat'l Spec.	Density	Approximate Wire Length (In / Troy Oz)		
Ag	Cu	Zn	Sn	Ni								1/16"	3/32"	1/8"
50	20	28	0	2	1220°F (660°C)	1305°F (707°C)	1305° - 1445°F (707° - 785°C)	BAG-24	NA	AMS 4788	4.96 Tr Oz/in <sup>3</sup>	69	30.7	17.2

## EcoBraz 38255SnSi

A special brazing alloy developed by Eutectic Corporation. It represents an improvement over the 56 % silver BAg-7 brazing alloy. It is cadmium free, and capable of quickly filling long, narrow joints. EcoBraz 38255SnSi offers improved joint strength and gapping capability over BAg-7, without sacrificing working temperature and corrosion resistance. It is excellent when low temperature brazing, joint fits of (.001" to .005"), and rapid uniform fluid flow is required. It works well on stainless steels, nickels, steels, brasses, coppers, and small carbides.

Nominal Composition					Solidus	Liquidus	Recommended Brazing Range	AWS A 5.8	Fed. Spec. QQ-B-654A	SAE/Aeronautical Mat'l Spec.	Density	Approximate Wire Length (In / Troy Oz)		
Ag	Cu	Zn	Sn	Ni								1/16"	3/32"	1/8"
55	21	22	2	0.1	1165°F (629°C)	1220°F (660°C)	1220° - 1340°F (660° - 727°C)	NA	NA	NA	4.81 Tr Oz/in <sup>3</sup>	67	29.5	16

## EcoBraz 38256SN

EcoBraz 38256SN is excellent when low temperature brazing, snug fits (.001" to .002"), and rapid fluid flow are required. This white color (as brazed) brazing alloy has good corrosion properties and color match to stainless steel. It is used in low temperature carbide brazing, as a maintenance-brazing alloy for thin section steel products, and in other areas where strength and low temperature joining serves an advantage. It works well on stainless, nickels, and steels. Because of its' white color, it is not typically used on brasses or bronzes unless joint color is not a problem.

Nominal Composition					Solidus	Liquidus	Recommended Brazing Range	AWS A 5.8	Fed. Spec. QQ-B-654A	SAE/Aeronautical Mat'l Spec.	Density	Approximate Wire Length (In / Troy Oz)		
Ag	Cu	Zn	Sn	Ni								1/16"	3/32"	1/8"
56	22	17	5	0	1145°F (618°C)	1205°F (651°C)	1205° - 1345°F (651° - 729°C)	BAg-7	BAg-7	AMS 4763	4.85 Tr Oz/in <sup>3</sup>	67.2	29.9	16.8

## ECOBRAZE FLUXES

### EcoBraz White Flux

EcoBraz White Flux is a creamy, water base general purpose silver brazing paste flux for use on all metals except aluminum, magnesium or titanium. It is formulated for use with torch, induction, furnace, resistance, dip and other heating methods.

**Active temperature range:** 1100°F-1600°F (approx. 593°C - 871°C)  
**Specifications:** AWS Brazing Flux FB3-A, OF499c Type B and AMS 3410.

### EcoBraz Black Flux

EcoBraz Black Flux is a creamy, boron modified water base silver brazing paste flux for use on all metals except aluminum, magnesium or titanium. It is formulated for use with torch, induction, furnace, resistance, dip and other heating methods.

**Active temperature range:** 1100°F-1750°F (approx. 593°C - 954°C)  
**Specifications:** AWS Brazing Flux FB3-C, OF499c Type B and AMS 3411.

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