

Castolin Eutectic Brazing Technology

*Stronger, with
Castolin Eutectic*



OEM Catalogue



Solutions for OEM

Boric Acid & Borax free

Keen to follow the current and future REACH legislation and to find answers to environmental constraints applied to our sector, Castolin Eutectic developed a Brazing product range containing no CMR properties (Carcinogen, Mutagen, Reprotoxic). This means no boric acid or borax.

The new line is called GreenBraz and is composed of powder fluxes, paste fluxes and brazing rods.



What is REACH?

REACH is a new European Community Regulation on chemicals and their safe use.



It deals with the Registration, Evaluation, Authorisation and Restriction of Chemical substances. The aim of REACH is to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances. At the same time, innovative capability and competitiveness of the EU chemicals industry should be enhanced.

Cadmium free

Cadmium is considered eco-toxic and so this is the first reason why Castolin Eutectic developed cadmium-free products. Cadmium is used in batteries, plastics, pigments and metal coatings. Cadmium can enter into the environment through landfills, poor waste disposal methods, when burning coal for energy, etc. The particles can travel far before falling to the ground or water and each year many tons of cadmium are discharged into our seas and oceans.

Environmental pressures to eliminate the use of cadmium in industrial goods have been growing and the European Union created several directives to prevent the

use of such hazardous substances. Furthermore, cadmium has already been banned from Aerospace, Automotive, Medical and Potable Water applications.



RoHS



The Directive on the Restriction of the use of certain Hazardous substances in electrical and electronic equipment was adopted in February 2003 by the European Union. This directive restricts the use of six hazardous materials in the manufacture of various types of electronic and electrical equipment. It is closely linked with the Waste Electrical and Electronic Equipment Directive which sets collection, recycling and recovery targets for electrical goods and is part of a legislative initiative to solve the problem of huge amounts of toxic waste. Castolin Eutectic products are certified to comply with this directive.

Solutions for OEM

CadFree™ Silver Alloys

Typical Applications include

Piping, air-conditioning, food industry, automotive, medical instruments, cutting tools, refrigeration, spectacles, etc

EcoBraz Alloy	Composition [weight.%]					Melting range [°C]	Brazing temp. [°C]	Density [g/cm³]	Mechanical resistance [MPa]	EN 1044	DIN 8513	AWS A5.8	ISO 17672
	Ag	Cu	Zn	Sn	Other								
38212	12	48	40	-	0,2% Si	800-830	830	8.5	410	AG 207	L-Ag12	-	Ag212
38220	20	44	36	-	0,2% Si	690-810	810	8.7	330	AG 206	L-Ag20	-	-
38225	25	41	31,5	2,5	-	680-760	780	8.8	420	AG 108	L-Ag25	BAG-37	Ag125
38230	30	38	32	-	-	680-765	740	8.8	505	AG 204	L-Ag30	BAG-20	Ag230
38233	33	34	33	-	-	700-740	730	8.9	535	-	~ L-Ag33	-	-
38234	34	36	27	3	-	630-730	710	9.0	420	AG 106	L-Ag34Sn	-	Ag134
38235	35	32	33	-	-	680-750	740	9.0	430	-	-	BAG-35	Ag235
38238	38	31	29	2	-	650-720	710	8.8	430	-	-	BAG-34	Ag138
38240	40	30	28	2	-	650-710	690	9.1	430	AG 105	L-Ag40Sn	BAG-28	Ag140
38240 Ni	40	30	28	-	Ni 2	670-780	780	8.9	350	-	-	BAG-4	Ag440
38244	44	30	26	-	-	675-735	730	9.1	545	AG 203	L-Ag44	-	Ag244
38245	45	27	25	3	-	640-680	670	9.2	350	AG 104	L-Ag45Sn	BAG-36	Ag145
38249	49	16	23	-	Mn 7,5; Ni 4,5	685-705	690	8.9	350	AG 502	L-Ag49	BAG-22	Ag449
38249 A	49	27.5	20.5	-	Mn 2,5 Ni 0,5	670-690	690	9.0	350	~ AG 502	~ L-Ag49	BAG-26	-
38250 Ni	50	20	28	-	Ni 2	660-750	740	9.0	450	-	-	BAG-24	Ag450
38255	55	21	22	2	-	630-660	660	9.4	390	AG 103	L-Ag55Sn	-	Ag155
38256	56	22	17	5	-	620-655	650	9.5	410	AG 102	L-Ag55Sn	BAG-7	Ag156
38260	60	30		10	-	600-720	710	9.8	420	AG 402	-	BAG-18	Ag160
38265	65	20	15	-	-	670-720	710	9.6	400	-	-	BAG-9	Ag265
38272	72	28	-	-	-	779	779	10.0	350	AG 401	L-Ag72	BAG-8	Ag272

Note: According to the RoHS standard, only CadFree™ alloy should be used in specific industries. Castolin Eutectic products are certified to be RoHS compliant.

*All silver alloys can be coated with wide range of fluxes and percentage of coating:
Available coatings: 12%, 20%, 25%, 30%
Available fluxes: With boric acid, Greenflux
Types of coating: No flexible, semi-flexible, flexible.*



Solutions for OEM

XuperPhos range

NEW RANGE includes XuperPhos technology where we have three different alloys. These alloys have three different properties but with a distinct advantage of being able to control the melting of the alloy during brazing whilst clearly being able to see the alloy during brazing.

Xuper CuP/CuPAg This composition gives you a lower fluidity of the three alloys. These exceptional properties are ideal when trying to control the wetting on smaller joint areas.

Xuper PLUS CuP/CuPAg This alloy combination allows for the highest fluidity. This alloy is ideal for brazing joints with a larger surface area.

Xuper PREMIUM CuP/CuPAg The highest quality of the alloys in the CuP range. The unique properties allow for a lower fluidity that is not dense affording the operator ease of use. The alloy is easy to work with a very smooth wetting effect which is especially ideal for use on difficult to access and problematic joints.

XuperPhos

XuperPhos Reference	Composition [weight.%]			Melting range [° C]	Brazing temp. [° C]	Density [g/cm ³]	Mechanical resistance [MPa]	EN 1044	DIN 8513	AWS A5.8	ISO 17672
	Ag	Cu	P								
38006 B	-	94	6	710-890	760	8.1	250	CP 203	--	--	CuP 179
38007 B	-	93	7	710-820	720	8.1	250	CP 202	L-CuP7	BCuP-2	CuP 180
38008 B	-	92	8	710-770	720	8.1	250	CP 201	--	--	CuP 182
38102 B	2	91.8	6.2	645-825	710	8.1	250	CP 105	L-Ag2P	BCuP-6	CuP 279
38105 B	5	88.8	6.2	643-771	710	8.2	250	CP 104	L-Ag5P	BCuP-3	CuP 282
38115 B	15	80	5	645-800	710	8.4	250	CP 102	L-Ag15P	BCuP-5	CuP 284

XuperPhos Plus

XuperPhos Plus Reference	Composition [weight.%]			Melting range [° C]	Brazing temp. [° C]	Density [g/cm ³]	Mechanical resistance [MPa]	EN 1044	DIN 8513	AWS A5.8	ISO 17672
	Ag	Cu	P								
38006 BHF	-	94	6	710-890	760	8.1	250	CP 203	--	--	~CuP 179
38007 BHF	-	93	7	710-820	730	8.1	250	CP 202	L-CuP7	BCuP-2	~CuP 180
38008 BHF	-	92	8	710-770	720	8.1	250	CP 201	--	--	~CuP 182
38102 BHF	2	91.8	6.2	645-825	710	8.1	250	CP 105	L-Ag2P	BCuP-6	~CuP 279
38105 BHF	5	88.8	6.2	643-771	710	8.2	250	CP 104	L-Ag5P	BCuP-3	~CuP 282
38115 BHF	15	80	5	645-800	710	8.4	250	CP 102	L-Ag15P	BCuP-5	~CuP 284

XuperPhos Premium

XuperPhos Premium Reference	Composition [weight.%]			Melting range [° C]	Brazing temp. [° C]	Density [g/cm ³]	Mechanical resistance [MPa]	EN 1044	DIN 8513	AWS A5.8	ISO 17672
	Ag	Cu	P								
38007 BNS	-	93	7	710-820	720	8.1	250	CP 202	L-CuP7	BCuP-2	CuP 180
38102 BNS	2	91.8	6.2	645-825	710	8.1	250	CP 105	L-Ag2P	BCuP-6	CuP 279
38105 BNS	5	88.8	6.2	643-771	710	8.2	250	CP 104	L-Ag5P	BCuP-3	CuP 282

Solutions for OEM

Standard CuP Alloys

Standard	Composition [weight.%]			Melting range [°C]	Brazing temp. [°C]	Density [g/cm³]	Mechanical resistance [MPa]	EN 1044	DIN 8513	AWS A5.8	ISO 17672
	Ag	Cu	P								
38006 BS	-	94	6	710-880	730	8.1	250	CP 203	L-CuP6	-	CuP 179
38007 BS	-	93	7	710-820	720	8.1	250	CP 202	L-CuP7	BCuP-2	CuP 180
38008 BS	-	92	8	710-750	710	8.0	250	CP 201	L-CuP8	-	CuP 182
38102 BS	2	91.8	6.2	645-825	710	8.1	250	CP 105	L-Ag2P	BCuP-6	CuP 279
38105 BS	5	88.8	6.2	643-771	710	8.2	250	CP 104	L-Ag5P	BCuP-3	CuP 281
38115 BS	15	80	5	645-800	710	8.4	250	CP 102	L-Ag15P	BCuP-5	CuP 284
38118 BS	18	75	7	645-670	660	8.6	250	CP 101	~ L-Ag18P	-	CuP 286

Brass Alloys

Bicycle- and motorcycle-industry, frame- and body construction, steel-pipe furniture and frames, fittings, apparatus engineering, tools etc..

Product	Composition [weight.%]						Melting range [°C]	Brazing temp. [°C]	Density [g/cm³]	Mechanical resistance [MPa]	EN 1044	DIN 8513	AWS A5.8	ISO 17672
	Ag	Cu	Zn	Sn	Ni	Other								
38401	1	60	39	-	-	-	890-900	900	8.3	350	-	-	-	-
38405	5	55	40	-	-	-	820-870	860	8.4	350	AG 208	L-Ag5	-	Ag 205
38438 BMN	--	59	38	1	0,8	Mn0,6 Si0,15	880-900	900	8,4	300	--	--	--	Cu 670
38439 BSM	--	59	39	0,8	--	Si0,15 Mn 0,8	880-900	900	8,4	300	CU303	BCu60ZnSiMn	--	Cu 670
38440	-	59.5	40.25	-	-	Si 0,25	890-900	900	8.4	370	CU 301	L-CuZn40	-	Cu 470a
38440 SN	-	59	39.75	1	-	Si 0,25	890-900	900	8.4	400	CU 302	-	RBCuZn-A	Cu 470
38441 BMN	-	53	40.3	-	6,3	Mn0,2 Si0,2	870-910	910	9	420	-	-	-	-
38442 BN	-	48	41.8	-	10	Si 0,2	890-920	935	8.7	480	CU 305	L-CuNi10Zn42	RBCuZn-D	Cu 773

Ask your Castolin contact person to know available dimensions and shapes.



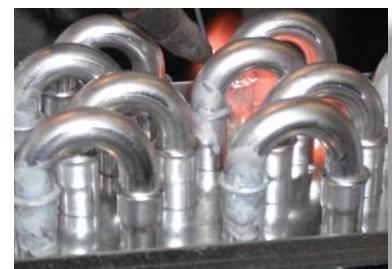
Solutions for OEM

Aluminium range

EcoBraz	Composition [weight.%]				Melting range [°C]	Brazing temp. [°C]	Density [g/cm³]	Mechanical resistance [MPa]	EN 1044	DIN 8513 1707	AWS A5.8	ISO 17672
	Ag	Si	Zn	Others								
38512	88	12	-	-	575 - 585	590	2.65	160	AL 104	L-ALSi 12	BAISi-12	Al 112
38522	22	-	78	-	440 - 470	475	ca. 6.1	ca. 80	-	~ L-ZnAl22	-	-
38502	2	-	98	-	380-410	415	6,6	160	-	-	-	-

Available Products (other dimensions under request)

Reference	FORM	DIMENSION	PACKAGING
38512B 16	Solid Rod	1,6	2,5
38512B 20		2	2,5
38512BFC 16	Flux core Rod	1,6	0,5
38512BFC 20		2	0,5
38512T 15	Solid wire	1,5	7
38512T 20		2	7
38512FCW 16	Flux core wire	1,6	5
38512FCW 20		2	5
38522BFC 20	Flux core rod	2	0,5
38522FCW 16	Flux core wire	1,6	5
38522FCW 20		2	5
38502B 16	Solid rod	1,6	2,5
38502B 20		2	2,5
38502BFC 16	Flux core rod	1,6	0,5
38502BFC 20		2	0,5
38502T 16	Solid wire	1,6	15
38502T 20		2	15
38502FCW 16	Flux core wire	1,6	5
38502FCW 20		2	5



Solutions for OEM

Foils

Product	Composition [weight.%]					Melting range [°C]	Braze temp. [°C]	Density [g/cm³]	Mechanical resistance [MPa]	EN 1044	DIN 8513	AWS A5.8	ISO 17672
	Ag	Cu	Zn	Sn	Other								
38115	15	80.3	-	-	P 4,7	645-800	710	8.4	250	CP 102	L-Ag 15P	-	CuP 284
38240	40	30	28	2	-	640-700	690	9.1	430	AG 105	L-Ag 40Sn	BAG-28	Ag140
38245	45	27	25	3	-	640-680	670	9.2	350	AG 104	L-Ag 45Sn	BAG-36	Ag145
38249	49	16	23	-	Mn 7,5; Ni 4,5	685-705	690	8.9	350	AG 502	L-Ag49	BAG-22	Ag449
38249 A	49	27.5	20.5	-	Mn 2,5 Ni 0,5	670-690	690	9.0	350	~ AG 502	~ L-Ag49	BAG-26	-
38255	55	21	22	2	-	630-660	660	9.4	390	AG 103	L-Ag 55Sn	-	Ag 155
38256	56	22	17	5	-	620-655	650	9.5	410	AG 102	L-Ag 55Sn	BAG-7	Ag156
38298 *)	49	16	23	-	Mn 2,5; Ni 0,5	685-705	690	8.9	300	AG 502	L-Ag 49	BAG-22	Ag 449

Fluxes

EcoBraz fluxes have excellent wetting- and cleaning characteristics and meet effectively all practical requirements. The range of fluxes is depending on the operating temperature of the solder and the basic materials. Operating temperature respectively melting range of the solder should be within the effective temperature range of the flux. Fluxes are available as paste or in powder form.

Flux EcoBraz	Type	EN 1045	DIN 8511	Range of activity [°C]	Base metal
38906 FX	Powder	FH10	F-SH 1	380 – 720	Copper and iron alloys, nickel alloys
38917 FP	Paste	FH12	F-SH 1	550 – 900	Carbides, steel, tungsten, molybdenum, tantalum.
38920 FP	Paste	FH10	F-SH 1	420 – 820	Universal flux for hard metal.
38925 FP	Paste	FH10	F-SH 1	550 – 900	Copper, brass, iron alloys, nickel alloys



GreenBraz	Type	EN 1045	DIN 8511	Range of activity [°C]	Base metal
38976 FP	Paste	FH10	F-SH 1	400-800	Copper and iron alloys, nickel alloys and stainless steel
38978 FP	Paste	FH 21	F-SH 2	800-1000	Copper and iron alloys, nickel alloys and stainless steel
38917 FP	Paste	FH12	F-SH 1	550 – 900	Carbides, steel, tungsten, molybdenum, tantalum.
38917 FPD	Paste	FH12	F-SH 1	550 – 900	Carbides, steel, tungsten dispersible



Stronger, with Castolin Eutectic



Your resource for protection, repair and joining solutions

Statement of Liability: Due to variations inherent in specific applications, the technical information contained herein, including any information as to suggested product applications or results, is presented without representation or warranty, expressed or implied. Without limitation, there are no warranties of merchantability or of fitness for a particular purpose. Each process and application must be fully evaluated by the user in all respects, including suitability, compliance with applicable law and non-infringement of the rights of others, and Messer Eutectic Castolin and its affiliates shall have no liability in respect thereof.



www.castolin.com

www.eutectic.com