

Better for the environment - Better for your productivity

# GreenBraz

New Formulations



A newly developed range of brazing products.  
Entirely reformulated by our scientists to eliminate Boric Acid, Borax and Cadmium.



Fully complies with REACH\*  
\* New European regulation



## Our Brazing tradition

Over 100 years ago in 1906, Mr. Wasserman started his business with the development, production and sales of brazing fluxes. In the following years, Castolin was formed and began to develop new low temperature and eutectic brazing alloys. Castolin was not only revolutionary in terms of its developments, in patents and in manufacturing processes, but also in training salesmen and customers on the brazing and soldering methods. Castolin Eutectic has always been years ahead of the competition. For example, Castolin

developed the first non-corrosive aluminium fluxes in the 60's, the first aluminium pastes in the 70's and the first nickel pastes in the late 70's. These products were 15 to 20 years before their time. Castolin Eutectic has patented over 200 products in its history and is still developing and improving products and processes for its customers today.

Castolin Eutectic, with its 100 years tradition of developing and innovating soldering and brazing solutions, is the right partner for you.



*Above: some of the first documented flux packages from Castolin Eutectic in 1910*

## R&D



Castolin Eutectic employs many engineers, chemists, scientists and technicians solely focused on solving the technical problems of our customers. The main research and development laboratory for brazing product within Castolin Eutectic is close to Paris, France. This laboratory is one of the most advanced brazing technology research laboratories in Europe. This facility is equipped for in-depth studies of all types of brazing and soldering applications and problems or challenges. Castolin Eutectic not only has scanning electron microscopes, the latest chemical analysis, laser

granulo-meter, thermal analytical equipment and many other specialised equipment, but also has a well trained technical team. Our team has examined over 3'500 metallurgical samples in the last 15 years, identifying the root causes of problems as well as recommending the required solutions.

As a Castolin Eutectic customer, you will receive the absolute best care and service to ensure the quality and efficiency of your production. Castolin Eutectic brazing R&D Center in France is also ISO certified.

## Manufacturing



Castolin has been producing soldering and brazing products for over 100 years. Today, we have some of the most modern production equipment available. Although many companies have outsourced their production or are simply reselling soldering and brazing products, Castolin Eutectic is dedicated to keeping the production in-

house. Therefore, Castolin Eutectic is able to offer excellent service and technical support to its customers. By developing and producing our own products, we are able to control the quality of every step in the production process. Castolin Eutectic uses only high quality raw materials. Every batch is strictly controlled and tested.

## 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.



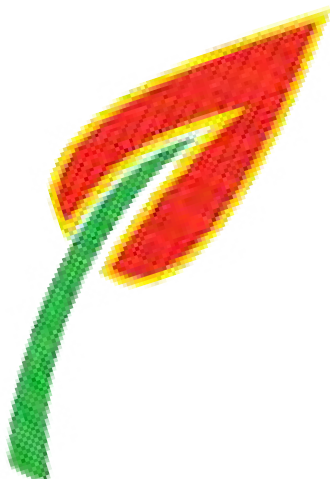
It deals with the Registration, Evaluation, Authorisation and Restriction of Chemical substances. The aim of REACH is to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances. At the same time, innovative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

## Brass

Type	Product Name	Form	Diameter	Packaging	Length	Melting Range	ESC Code	ISO/FDIS 17672
Green Rod	16	bare rod	2.0 mm	2.5 kg	500 mm	885 - 915°	205376	Cu 773
			3.0 mm	5 kg	500 mm		200108	
	146 NXF	coated rod	3.0 mm	2.5 kg	500 mm	885 - 905°	755591	Cu 471

Type	Product Name	Form	Diameter	Packaging	Length	Melting Range	ESC Code	ISO 3677
Green Rod	18	bare rod	2.0 mm	2.5 kg	500 mm	870 - 895°	200168	B-Cu60Zn(Ag)-870/895
			3.0 mm	5 kg	500 mm		200169	
	18 NXF	coated rod	2.0 mm	2.5 kg	500 mm	870 - 895°	755592	B-Cu60Zn(Ag)-870/895
			3.0 mm	2.5 kg	500 mm		755593	

### Typical Applications include

**Green Rod 16** Bare rods alloy with high mechanical resistance for brazing.

**Green Rod 146 NXF** Coated (flexible) filler alloy for high quality joining of copper and ferrous metal. Use the 146 M flux. Joining of copper piping by brazing, joining of steel piping by brazing and strong capillary brazing.

**Green Rod 18 and 18 NXF** Bare or coated (flexible) alloy for high quality joining of copper and steel. Repair and joining of piping.

Type	Product Name	Form	Packaging	Activity Temp. Range	ESC Code	NF EN 1045
Green Flux	146 M	paste	1 kg	800 - 1000°	756018	FH21
			250 gr		755453	
	18 M	paste	500 gr	700 - 1000°	753889	FH21
			1 kg		755454	

### Typical Applications include

**Green Flux 146 M** Especially for applications on steels, iron and copper.

**Green Flux 18 M** Ferrous and copper.



## CuproAluminium Brazing

Type	Product Name	Form	Diameter	Packaging	Length	Melting Range	ESC Code	ISO/FDIS 17672
Green Rod	1666	bare rod	1.5 mm	1 kg	500 mm	660 - 700°	201371	Ag 145
			2.0 mm	1 kg	500 mm		201372	

### Typical Applications include

**Green Rod 1666** Bare rod for capillary joining on copper, ferrous metals, on well fitted pieces. Food industry.

Type	Product Name	Form	Packaging	Activity Temp. Range	ESC Code	NF EN 1045
Green Flux	Albro	paste	250 gr	400 - 820°	755456	FH11
			1 kg		755457	

### Typical Applications include

**Green Flux Albro** Copper-aluminium, alloys containing aluminium.

## Brazing Carbides

Type	Product Name	Form	Diameter	Packaging	Length	Melting Range	ESC Code	ISO/FDIS 17672
Green Rod	1703*	bare rod	1.5 mm	1 kg	500 mm	680 - 705°	205421	Ag 449
			2.0 mm	1 kg	500 mm		205422	

\* contains nickel

### Typical Applications include

**Green Rod 1703** Bare rod for the joining of ferrous metals with carbides.

Type	Product Name	Form	Packaging	Activity Temp. Range	ESC Code	NF EN 1045
Green Flux	1703 PF	paste	1 kg	400 - 900°	755455	FH12
	38917 FPD	paste	1 kg	400 - 900°	756019	FH12

### Typical Applications include

**Green Flux 1703 PF** 1703 PF is especially made for application on steels and tungsten carbides.

**Green Flux 38917 FPD** Dispensable flux.

Type	Product Name	Form	Diameter	Packaging	Length	Melting Range	ESC Code	ISO/FDIS 17672
Green Rod	1800	bare rod	1.5 mm	1 kg	500 mm	625 - 665°	205365	Ag 156
			2.0 mm	1 kg	500 mm		205366	
	1666	bare rod	1.5 mm	1 kg	500 mm	660 - 700°	201371	Ag 145
			2.0 mm	1 kg	500 mm		201372	
	1665	bare rod	1.5 mm	1 kg	500 mm	660 - 720°	201341	Ag 140
			2.0 mm	1 kg	500 mm		201342	
	1655	bare rod	1.5 mm	1 kg	500 mm	655 - 755°	201309	Ag 134
			2.0 mm	1 kg	500 mm		201310	

### Typical Applications include

- Green Rod 1800** Bare rod for capillary joining of well fitted parts: copper, ferrous metal, especially stainless steel with mechanical stress.
- Green Rod 1666** Bare rod for capillary joining on copper, ferrous metals, on well fitted pieces. Food industry.
- Green Rod 1665** Bare rod for capillary joining on ferrous and non-ferrous metals. Especially for joining of medical fluids and refrigerants.
- Green Rod 1655** Bare rod for the joining of series, especially for big quantities in air-conditioning and refrigeration.



Type	Product Name	Form	Diameter	Packaging	Length	Melting Range	ESC Code	ISO/FDIS 17672
Green Rod	1020 XFC	coated rod	1.5 mm	1 kg	500 mm	625 - 665°	755594	Ag 156
			2.0 mm	1 kg	500 mm		755595	
	1666 XFC	coated rod	1.5 mm	1 kg	500 mm	660 - 700°	755597	Ag 145
			2.0 mm	1 kg	500 mm		755598	
	1665 XFC	coated rod	1.5 mm	1 kg	500 mm	660 - 720°	755600	Ag 140
			2.0 mm	1 kg	500 mm		755601	
	1655 XFC	coated rod	1.5 mm	1 kg	500 mm	655 - 755°	755602	Ag 134
			2.0 mm	1 kg	500 mm		755603	

### Typical Applications include

**Green Rod 1020 XFC** Coated rod (flexible) for capillary joining on stainless steel, ferrous metal, copper and having a nice appearing after brazing.

**Green Rod 1666 XFC** Coated rod (flexible) for capillary joining on copper, ferrous metals, on well fitted pieces. Food industry.

**Green Rod 1665 XFC** Coated rod (flexible) for capillary joining on ferrous and non-ferrous metals. Especially for joining of medical fluids and refrigerants.

**Green Rod 1655 XFC** Coated rod (flexible) for the joining of series, especially for big quantities in air-conditioning and refrigeration.

Type	Product Name	Form	Packaging	Activity Temp. Range	ESC Code	NF EN 1045
Green Flux	181 Atmosin	powder	250 g	550 - 900°	755405	FH20
			750 g		755406	
	1802 Atmosin	powder	250 g	400 - 800°	755429	FH10
			750 g		755430	
	181 PF Atmosin	paste	250 g	550 - 900°	755431	FH20
			1 kg		755432	
	1802 PF Atmosin	paste	250 g	420 - 820°	755433	FH10
			1 kg		755434	
	ActivaTec 1000	paste	250 g	400 - 800°	204218	FH10
			1 kg		201152	

### Typical Applications include

**Green Flux 1810Atmosin and 180 PF Atmosin:** Massive parts requiring a long heating.

**Green Flux 1802 Atmosin and 1802 Atmosin PF:** Universal applications.

**Green Flux ActivaTec 1000:** Steels, stainless steels, copper.

**ECO Greenline**

Type	Product Name	Form	Diameter	Packaging	Length	Melting Range	ESC Code	ISO/FDIS 17672
ECO GreenRod	38256 NXF	coated rod	1.5 mm	1 kg	500 mm	625 - 665°	755610	Ag 156
			2.0 mm	1 kg	500 mm		755611	
	38245 NXF	coated rod	1.5 mm	1 kg	500 mm	660 - 700°	755612	Ag 145
			2.0 mm	1 kg	500 mm		755613	
	38240 NXF	coated rod	1.5 mm	1 kg	500 mm	660 - 720°	755614	Ag 140
			2.0 mm	1 kg	500 mm		755615	
	38234 NXF	coated rod	1.5 mm	1 kg	500 mm	655 - 755°	755616	Ag 134
			2.0 mm	1 kg	500 mm		755617	

Type	Product Name	Form	Diameter	Packaging	Length	Melting Range	ESC Code	ISO 3677
ECO GreenRod	38418 NXF	coated rod	2.0 mm	2.5 kg	500 mm	870 - 895°	755608	B-Cu60Zn(Ag)-9870/895
			3.0 mm	2.5 kg	500 mm		755609	
	38446 NXF	coated rod	3.0 mm	2.5 kg	500 mm	885 - 905°	755607	Cu 471

Type	Product Name	Form	Packaging	Activity Temp. Range	ESC Code	NF EN 1045
ECO GreenFlux	FP 38978	paste	1 kg	800 - 1000°	755463	FH21
	FP 38971	paste	1 kg	700 - 1000°	755460	FH21
	FX 38972	powder	1 kg	550 - 900°	755462	FH21
	FX 38973	powder	1 kg	420 - 820°	755464	FH10
	FP 38974	paste	1 kg	550 - 900°	755465	FH20
	FP 38975	paste	1 kg	420 - 820°	755466	FH10
	FP 38976	paste	1 kg	400 - 800°	755467	FH10
	FP 38917	paste	1 kg	400 - 900°	755468	FH12
	FP 38917D	paste	1 kg	400 - 900°	755469	FH12
	FP 38970	paste	1 kg	400 - 820°	755470	FH11



## Training



At Castolin Eutectic, we offer a wide range of brazing, welding, and thermal spray training courses. These courses can be designed according to the needs of each customer. There are training sessions for managers, engineers and technicians.

The training courses about brazing and soldering teach the basics about joint design, pre-cleaning, flux selection, alloy selection, process parameters, flux removal, etc.

Each course is composed of theoretical as well as practical training. Castolin Eutectic can offer these courses in almost every European country. The courses are carried out in our own in-house training facilities, with qualified instructors or with our trainers at your location.



For more information about training, please contact your local Castolin Eutectic company. Contact information can be found in our website: [www.castolin.com](http://www.castolin.com).



Castolin Eutectic received the Frost & Sullivan double accolade award in recognition of demonstrated excellence in customer service leadership and Product market growth leadership within the European Repair & Maintenance Welding industry. These awards reflect the close collaboration with our customers, and their satisfaction for more than a century.

Together with our sister companies in the Messer World, we can offer our customers a very powerful range of products and services. Being Part of the Messer World means:

- Investment of over € 420 million
- More than 6,000 motivated employees
- Over 100 factories to meet customer needs
- Technical sales support in over 120 countries
- 2,000 technical sales people in the field with our customers every day



Messer is one of the leading industrial gas companies, and is active in over 30 countries in Europe and Asia, as well as Peru, with over 60 operating companies.

From acetylene to xenon, the Messer Group has one of the most diverse product portfolios on the market – it produces industrial gases such as oxygen, nitrogen, argon, carbon dioxide, hydrogen, helium, shielding gases for welding and brazing, specialty gases, medical gases and many different gas mixtures.



Quality laboratory



Product Portfolio - Widest in the Industry

**Notes**

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Greener with...

**Castolin Eutectic**

**WEAR & FUSION TECHNOLOGY**



Ask for a demonstration  
from our Application  
Specialists.

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