



POWER

MASTER ALLOY **補口**

CATALOGUE 目錄

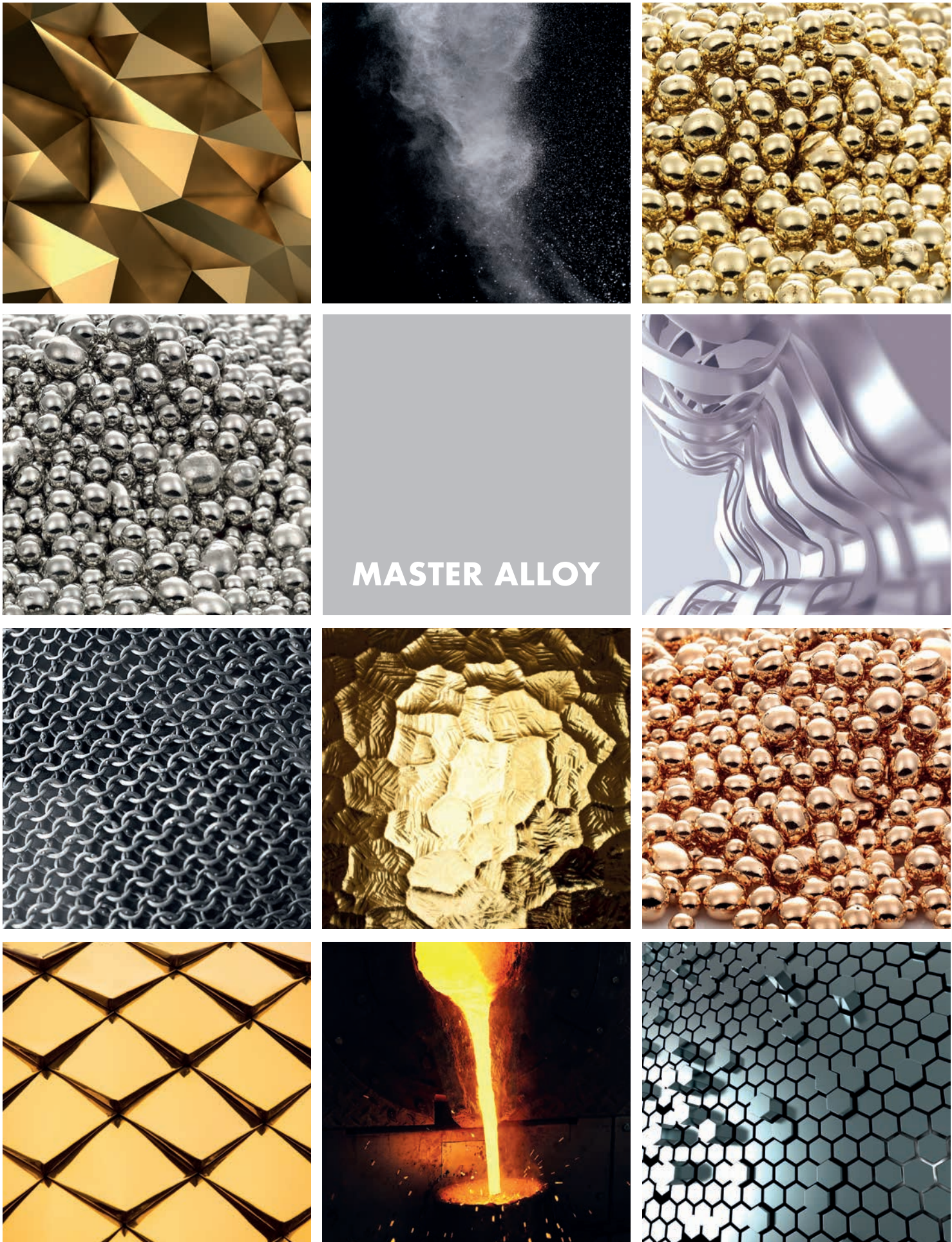
MASTER ALLOY

Product catalogue - 產品目錄

Transforming metals to boost
their intrinsic, stellar qualities
and let them **shine again**

改造金屬以提升
他們固有而顯著的品質
讓他們再次閃耀





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Legor Group **Master Alloy Division** has always been renowned worldwide for its core business: master alloys for the jewellery industry. Today it proposes the widest range of compositions and dedicated solutions available on the market, for the transformation of metals from raw materials to finished products.

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Legor Group 的補口部門一直以其核心業務聞名世界：應用於珠寶行業的補口。至今它提出了市場上最廣泛的成分和專用解決方案，用於從原材料到成品的金屬轉化。

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...more on Legor Group

GOLD line

GOLD ALLOYS • 黃金補口

Gold is the most desirable of metals

It is also the best known among precious metals, thanks to its unique characteristics of colour, ductility and rarity.

Manufacturing a gold jewel poses today a large amount of challenges, from compliance with international standards, to weight reduction, to the need for improved workability or better scraps re-usability, to high tarnish resistance in lower titles.

Legor Group master alloys for gold are available for all the titles and all the production processes applicable on the market.

They are a range of products unrivalled for variety, reliability and advantages offered.

黃金是最理想的金屬

由於其獨特的顏色，延展性和稀有度，它也是貴重金屬中最著名的。

製造黃金首飾今天遇到了大量的挑戰，從符合國際標準，重量控制，提高可操作性或更好的廢料重用的需求，以及低成色時的高抗氧化能力。

Legor Group 黃金補口適用於市場上所有成色和所有生產工序。

它們是一系列無與倫比的產品，基於其多樣性，可靠性和優勢。

YELLOW GOLD - 黃金 • 875-917‰

	Code 編號	Main formulation 主要配方				Suitable for 適用於		Main features 主要特點	Colour shade 色調	Hardness 硬度 AC/AH
		Ag%	Zn%	Deox	G.R.	875	917			
CASTING 鑄造	YB22C	11	12	High	Low	No	Yes	Casting with stones. High reusability 蠟鑲倒模; 高覆用性	Rich yellow 黃金色	917‰: 80/80 HV
	YE153C	23	10	High	Min	Yes	Yes	Minimum residue in the crucible after casting Low loss from evaporation 倒模後坩堝中殘留物少; 蒸發損失低	Pink yellow 粉黃金色	917‰: 80/80 HV
	SCA4	39	3	High	Min	Yes	Yes	Casting with stones. High fluidity and reusability 蠟鑲; 高流動性和高覆用性	Rich yellow 黃金色	917‰: 80/80 HV
MECHAN. WORKING 機械加工	H22X	29	0	Min	High	No	Yes	Highly age-hardenable Hollow chain and hollow tube production 高硬化能力; 適用於空心鏈條和中空管生產	Light yellow 淺黃金色	917‰: 105 /150 HV
	SM1	40	3	Min	Very high	Yes	Yes	Massive and hollow mechanical working High silver content leads to rich colour 用於大型中空機械加工; 高銀含量導致較深的顏色	Rich yellow 黃金色	917‰: 80/80 HV
	SM2	31	6	Min	Med	Yes	Yes	General mechanical working. Good colour 適用於機械加工; 理想的顏色	Rich yellow 黃金色	917‰: 80/80 HV
	YA223W	7	10	Min	High	Yes	Yes	Very flexible on different processes High level of grain refiners 適用於不同的流程; 高含量的晶粒細化劑	Pinkish yellow 粉黃金色	875‰: 115/ 125 HV
	YD22L	49	0	Min	Med	Yes	Yes	Zero loss from evaporation High level of grain refiners 蒸發零損耗; 高含量的晶粒細化劑	Rich yellow 黃金色	875‰: 75/75 HV
ALL-PURPOSE 通用	H22C1	7	6	Low	Very high	Yes	Yes	High as cast hardness and high age-hardenability. Contains Ni 高鑄造硬度和高硬化能力; 含鎳	Light yellow 淺黃金色	875‰: 130/230 HV 917‰: 105/150 HV
	YA22U	6	9	Low	Med	Yes	Yes	As low as 6% silver in the master alloy High quality/price ratio 銀含量低至6%; 高性價比	Pinkish yellow 粉黃金色	917‰: 85/85 HV
	YD22HC	25	0	Low	High	Yes	Yes	High as cast hardness and high age-hardenability. Contains Ni Excellent for stone-in-place casting. Good colour 鑄造硬度高和高硬化能力; 含鎳 非常適合蠟鑲; 理想的顏色	Pinkish yellow 粉黃金色	875‰: 120/190 HV 917‰: 100/120 HV
	YD148L	18	5	Min	Med	Yes	No	Very flexible on different casting and working processes 適用於不同的流程	Pinkish yellow 粉黃金色	875‰: 110/110 HV

FOCUS ON

SCA4

- Intense colour
 - Casting with stones
 - High fluidity and reusability
-
- 較深的顏色
 - 蠟鑲
 - 高流動性和高覆用性

SM1

- High silver content leads to rich colour
 - Massive and hollow mechanical working
-
- 高銀含量導致較深的顏色
 - 適用於大型中空機械加工

YD22HC

- High as cast hardness and high age-hardenability (100 HV → 120 HV in 917‰)
 - Excellent for stone-in-place casting!
 - Good colour
-
- 鑄造硬度高, 高硬化能力 (100 HV → 120 HV in 917‰)
 - 非常適合蠟鑲
 - 理想的顏色

YELLOW GOLD - 黃金 • 750‰

	Code 編號	Main formulation 主要配方				Main features 主要特點	Colour shade 色調	Hardness 硬度 AC/AH
		Ag%	Zn%	Deox	G.R.			
CASTING 鑄造	C182N	58	3	Med	Med	Stone-in-place casting in open and closed systems High flowability 火槍及密閉機器倒模的蠟鑲; 高流動性	Light yellow 2N 2N淺黃金色	750‰: 135/195 HV
	C182N1	49	8	Med	Med		Light yellow 淺黃金色	750‰: 150/250 HV
	C183N	47	3	Med	Med		Rich yellow 3N 3N黃金色	750‰: 135/245 HV
MECHAN. WORKING 機械加工	C183NL	47	3	Low	Low	Stone-in-place casting in closed systems, no hardspots 密閉機器倒模的蠟鑲, 無硬點	Rich yellow 黃金色	750‰: 145/240 HV
	B182N	58	4	Min	High	Hollow ware production Best option for all complex processes 適合空心產品製作; 所有複雜流程的最佳選擇	Light yellow 2N 2N淺黃金色	750‰: 130/180 HV
	B183N	47	2	Min	High		Rich yellow 3N 3N黃金色	750‰: 130/250 HV
	B182N1	49	8	Min	High	Hollow chain production, high age-hardenability 適合空心鏈條生產, 高硬化能力	Light yellow 淺黃金色	750‰: 145/220 HV
	OG604Z	45	9	Min	High	Very shiny colour, good for general processing 顏色非常閃亮, 適合一般加工	Light yellow 淺黃金色	750‰: 140/215 HV
ALL-PURPOSE 通用	Y83CT	48	2	MIn	High	Hollow chain production, high age-hardenability 空心鏈條生產, 高硬化能力	Rich yellow 黃金色	750‰: 140/240 HV
	Y142W	35	10	Min	Med	Best seller, low silver content. Good for general processing 暢銷產品, 低銀含量; 適合一般加工	Rich yellow 黃金色	750‰: 175/255 HV
	SM1	40	3	Min	Med	Excellent on items that need spring effect 適用於需要彈簧效果的產品	Pinkish yellow 粉黃金色	750‰: 160/280 HV
	A18VN	69	0	Min	Med	Casting in closed systems, sheet and wire production 密閉機器倒模, 適用於壓片和拉線	Green yellow 青黃金色	750‰: 120/175 HV
	A182N	64	0	Min	Med	Compliant to 2N yellow colour std in 750‰ gold Best suitable for casting in closed systems, sheet, wire 符合在750‰黃金中2N黃金色標準; 最適合密閉機器倒模, 適用於壓片和拉線	Light yellow 2N 2N淺黃金色	750‰: 130/180 HV
	A183N	50	0	Min	Med	Best seller, compliant to 3N yellow colour std in 750‰ gold. Best suitable for casting in closed systems, sheet 暢銷產品, 符合在750‰黃金中3N黃金色標準; 最適合密閉機器倒模, 適用於壓片	Rich yellow 3N 3N黃金色	750‰: 140/250 HV
	A184N	40	0	Min	Med	Compliant to 4N yellow colour std in 750‰ gold Best suitable for casting in closed systems, sheet 符合在750‰黃金中4N黃金色標準; 最適合密閉機器倒模, 適用於壓片	Pinkish yellow 4N 4N粉黃金色	750‰: 145/260 HV

FOCUS ON

C183N

- Stone-in-place casting in open and closed systems
 - High flowability
 - Compliant to 3N colour standard
 - Available in lower deox version (C183NL)
-
- 火槍及密閉機器倒模的蠟鑲
 - 高流動性
 - 符合3N黃金色標準
 - 含較低脫氧劑的版本 (C183NL)

B182N

- Compliant to 2N colour standard
 - Best option for all complex processes
-
- 符合2N黃金色標準
 - 所有複雜流程的最佳選擇

A183N

- Best seller! Suitable for casting in closed systems, sheet
 - Compliant to 3N colour standard
-
- 暢銷產品, 適合密閉機器倒模, 適用於壓片
 - 符合3N黃金色標準

YELLOW GOLD - 黃金 • 375-585‰

	Code 編號	Main formulation 主要配方				Suitable for 適用於		Main features 主要特點	Colour shade 色調	Hardness 硬度 AC/AH
		Ag%	Zn%	Deox	G.R.	375	585			
CASTING 鑄造	C14VN	27	16	Med	Low		✓	Suitable for stone-in-place casting. High flowability 適用於蠟鑲倒模; 高流動性	585‰: light/淺黃金色	585‰: 145/220 HV
	C142GR	12,5	17	Med	Med	✓	✓	More compact than OG130A (version for open syst.) Best suitable for stone-in-place casting in closed systems 比OG130A（用於火槍倒模）更緊湊; 最適合在密閉機器倒模的蠟鑲	375‰: light/淺黃金色 585‰: rich/黃金色	375‰: 100/120 HV 585‰: 120/120 HV
	C141US	16	15	Med	Med	✓	✓	More compact than OG160A (version for open syst.) Best for stone-in-place casting in closed systems 比OG160A（用於火槍倒模）更緊湊; 最適合在密閉機器倒模的蠟鑲	375‰: light/淺黃金色 585‰: rich/黃金色	375‰: 115/160 HV 585‰: 110/150 HV
	OG130A	12	17	High	Med	✓	✓	Casting in open systems High reusability thanks to high deoxidizer 適用於火槍倒模; 由於高脫氧劑含量而有高覆用性	375‰: light/淺黃金色 585‰: rich/黃金色	375‰: 100/110 HV 585‰: 120/130 HV
	OG160A	16	15	High	Min	✓	✓	Casting in open systems High reusability 適用於火槍倒模; 高覆用性	375‰: light/淺黃金色 585‰: rich/黃金色	375‰: 115/235 HV 585‰: 110/230 HV
	OG450C	6	23	High	Low	✓	✓	Casting in open systems High reusability 適用於火槍倒模; 高覆用性	375‰: greenish 青黃金色 585‰: light/淺黃金色	375‰: 90/100 HV 585‰: 110/125 HV
	OG602A	20	16	High	Med	✓	✓	Casting in closed systems in titles 375‰ and 585‰. High flowability 適用於375‰和585‰成色的密閉機器倒模; 高流動性	375‰: light/淺黃金色 585‰: light/淺黃金色	375‰: 125/250 HV 585‰: 140/210 HV
	SCA1V	22	10	High	Min	✓	✓	Minimum residue in the crucible after casting Low loss from evaporation 倒模後坩堝中殘留物最少; 蒸發量較少	375‰: pinkish 粉黃金色 585‰: pinkish 粉黃金色	375‰: 135/220 HV 585‰: 160/225 HV
	SCA5	18	18	High	Min	✓	✓	The best selling choice for stone-in-place casting in 585‰ and 375‰ yellow gold High flowability, reusability and shininess 585‰和375‰成色黃金中的蠟鑲倒模最暢銷的選擇; 高流動性, 覆用性和光澤度	375‰: greenish 青黃金色 585‰: light/淺黃金色	375‰: 110 HV 585‰: 125/170 HV

FOCUS ON

OG130A

- Casting in open systems
- High reusability

- 適用於火槍倒模
- 高覆用性

C142GR

- Best suitable for stone-in-place casting in closed systems.
- More compact than OG130A (for open systems)

- 最適合在密閉機器倒模的蠟鑲
- 比OG160A（用於火槍倒模）更緊湊

OG602A

- Casting in closed systems
- High flowability

- 適用於密閉機器倒模
- 高流動性



	Code 編號	Main formulation 主要配方				Suitable for 適用於		Main features 主要特點	Colour shade 色調	Hardness 硬度 AC/AH
		Ag%	Zn%	Deox	G.R.	375	585			
MECHANICAL WORKING 機械加工	B143HN	30	8	Min	Med		✓	Excellent for hollow chain and hollow tube production. High age-hardenability and mechanical resistance 適用於中空鏈條和中空管生產; 高硬化能力和機械阻力	585‰: light/淺黃金色	585‰: 165/230
	B145	11	19	Min	Med	✓	✓	Mechanical working of sheet and wire Soft and easily deformable 適用於壓片和拉線的機械加工; 柔軟和高金屬塑性	375‰: greenish 青黃金色 585‰: light/淺黃金色	375‰: 105/130 HV 585‰: 105/130 HV
	OG450L	6	22	Min	Low	✓	✓	Mechanical working of sheet and wire High quality/price ratio 適用於壓片和拉線的機械加工; 高性價比	375‰: greenish 青黃金色 585‰: greenish/ 青黃金色	375‰: 90/100 HV 585‰: 115/125 HV
	Y143T	21	14	Min	High	✓	✓	Best seller! Age hardenable, best suitable on complex processes like hollow ware production 暢銷產品! 高硬化能力; 最適用於複雜的工序, 如空心產品製作	375‰: light/淺黃金色 585‰: rich/黃金色	375‰: 150/175 HV 585‰: 135/180 HV
	Y143W	25	15	Min	High	✓	✓	Hollow tube and sheet production High chemical resistance to hollowing phase and shininess. Highly age-hardenable 適用於空心管生產和壓片; 空心狀態時耐化學腐蝕性高和高光澤度; 高硬化能力	375‰: light 淺黃金色 585‰: light/淺黃金色	375‰: 160/195 HV 585‰: 145/190 HV
	Y144W	16	16	Min	High	✓	✓	Hollow tube and sheet production. High chemical resistance to hollowing phase and shininess 適用於空心管生產和壓片; 空心狀態時耐化學腐蝕性高和高光澤度	375‰: rich/黃金色 585‰: rich/黃金色	375‰: 100/145 HV 585‰: 120/135 HV
	Y145T	14	13	Min	High	✓	✓	Rich yellow colour Good for general mechanical working 黃金色; 適用於普通機械加工	375‰: rich/黃金色 585‰: pinkish 粉黃金色	375‰: 115/150 HV 585‰: 135/145 HV
	YB144WT	15	11	Min	High	✓	✓	Excellent for stamping and wire Good thermal resistance 適用於壓片和拉線; 良好的耐熱性	375‰: rich/黃金色 585‰: rich/黃金色	375‰: 130/130 HV 585‰: 135/135 HV
	YA144L	5,5	23	Min	Low	✓	✓	Mechanical working of sheet and wire Compact surface and good shininess 適用於壓片和拉線的機械加工; 緊湊的表面和良好的光澤度	375‰: greenish 青黃金色 585‰: greenish 青黃金色	375‰: 85/85 HV 585‰: 115/115 HV
ALL-PURPOSE 通用	SM5	20	16,5	Min	Med	✓	✓	All-purpose formulation for low titles General working and casting in closed systems 對於低成色的通用配方; 適用於一般機械加工和密閉機器倒模	375‰: greenish 青黃金色 585‰: light/淺黃金色	375‰: 120/165 HV 585‰: 145/175 HV

FOCUS ON

Y144W

- Hollow tube and sheet production
- High chemical resistance to hollowing phase
- Shininess

- 適用於空心管生產和壓片
- 空心狀態時耐化學腐蝕性高
- 高光澤度

Y143W

- Hollow tube and sheet production
- High chemical resistance to hollowing phase and
shininess
- Highly age-hardenable!

- 適用於空心管生產和壓片
- 空心狀態時耐化學腐蝕性高和高光澤度
- 高硬化能力

YA144L

- Only 5,5% Ag in the master alloy!
- Mechanical working of sheet and wire, casting in
closed systems

- 補口只有5.5% 銀含量!
- 適用於壓片和拉線的機械加工和密閉機器倒模





A range of nickel-free formulations for all titles and processes, based on all whitening elements compatible with jewellery production. Palladium and silver in particular are the most common and easiest alternatives to nickel in the production of white gold jewellery.

PRODERMA is the answer to eliminate nickel from the production process, for every caratage. Ni-free formulations are the only category of products able to offer absolute compliance to the new UNI EN 1811:2015 standard till date.

PRODERMA is a complete line made of different formulations:

Palladium based alloys

- Age hardenable formulations for 750‰ and 585‰ titles.
- Low palladium content formulations for 375‰ and 585‰ titles.

Nickel/palladium-free alloys

- Silver based alloys for 375‰ and 585‰ titles.
- Manganese based alloys for mechanical working in 375‰ and 585‰ titles.

PRODERMA alloys are highlighted in the tables.

為了兼容珠寶生產時的所有美白元素，我們有一系列的無鎳配方適用於所有成色和工序。 在生產白金首飾時，鈀和銀是最常見和最簡單的鎳替代品。

PRODERMA是從生產過程中消除鎳的解決方案，適用於不同成色。 無鎳配方是迄今唯一能夠提供絕對符合新的UNI EN 1811： 2015標準的產品類別。

PRODERMA是由不同配方製成的完整系列:

鈀基合金

- 適用於750‰和585‰成色的可硬化配方。
- 適用於375‰和585‰成色的低鈀含量配方。

無鎳/無鈀合金

- 適用於375‰和585‰成色的銀基合金。
- 適用於375‰和585‰成色機械加工的錳基合金。

Proderma合金在表中特別標示

Ni1811 / Ni1811-Rh

A range of patented white, nickel-based gold alloys specifically developed to comply with the EN1811:2015 European standard on nickel emissivity. The introduction of rhodium as an alloy element has the main benefit of guaranteeing low values and very high stability to nickel emissivity: 99,9% compliance on Ni1811 alloys and of 100% compliance on Ni1811-RH alloys*.

Ni1811 alloys are highlighted in the tables.

*data based on statistics of more than 3000 nickel emission tests conducted on jewelry samples from different manufacturing companies.

一系列專利白色，鎳基補口，專門開發以符合EN1811： 2015歐洲鎳釋放標準。 引入銑作為合金元素主要是為了保證鎳的低釋放值和高穩定性： Ni1811系列補口99.9%符合鎳釋放標準和Ni-1811-RH系列補口100%符合鎳釋放標準。

Ni1811合金在表中特別標示

*數據是根據來自不同生產商的珠寶樣品進行的3000多次鎳釋放測試的統計資料。

HOLD YOUR GUARD UP!

Revision of UNI EN 1811:2015 standard and low nickel release line of alloys NI1811 and NI1811-RH

Starting from January 1st, 2016 In the 27 European Union member States, EN 1811:2015 standard is effective. The EN1811:2015 standard is used to determine the nickel release from a jewel after direct and prolonged contact with the skin of the user. This is because nickel has been recognized (REACH regulation 1907/2006) as harmful to human health. Nickel can cause allergies, skin rashes and dermatitis. In Europe the production and commercialization of jewelry that does not respect EN 1811:2015 standard (Ni release > 0,5 µg/cm²/week) are prohibited! The standard is very important for the gold manufacturing industry, because more than 30% of gold jewelry today is made using white gold alloys. It is necessary to reduce the nickel release from jewels: choosing a low nickel release alloy is the most practical and useful choice. In this new revision the “inconclusive” zone of results due to composite measurement uncertainty has been eliminated. Therefore value that are lower than 0,88 µg/cm²/week are to be considered as “Compliant”. This small raise in the acceptable values should not make you keep your guard low! Traditional nickel-based alloys for the production of white gold jewelry are not safe in regards to the standard. Traditional white gold alloys have low repeatability in nickel release tests, due to several factors among which:

- High nickel content
- Low crystalline grain control
- Surface quality problems
- High content of deoxidizers or of polluting elements

The solution

NI1811 and NI1811-RH lines, the only ones able to give repeatable results in the nickel release tests, and able to give you safety in your production process.

保持警覺！

UNI EN 1811： 2015修訂標準和NI1811和NI1811-RH低鎳釋放補口系列

從2016年1月1日起，在歐盟27個成員國都跟從EN 1811： 2015標準。 EN1811： 2015標準用於判定在直接和長時間接觸使用者的皮膚後，從珠寶釋放的鎳。 這是因為鎳被認為對人體健康有害（REACH法規1907/2006）。 鎳會引起過敏，皮膚瘙癢和皮炎。 在歐洲，不遵守EN1811： 2015標準（Ni釋放> 0.5ug / cm2 /週）的珠寶的生產和商業化行為是被禁止的！該標準對於黃金製造業來說非常重要，因為今天的黃金首飾超過30%是使用白金補口製成的，所以有必要減少從珠寶釋放的鎳：選擇低鎳釋放補口是最實際和最有效的選擇。在這個新版本中，由於複合測量而導致的“不一致”的不確定性已被消除。因此，低於0.88ug / cm2 /週的鎳釋放值被認為“符合”鎳釋放標準。這個在可接受範圍的少量提升不應該讓你降低警覺！使用傳統鎳基合金生產的白金首飾在這標準方面是不安全的。由於以下幾個因素，傳統的白金補口在鎳釋放試驗中的重複性很差：

- 高鎳含量
- 低晶粒控制
- 表面質量問題
- 高含量的脫氧劑或污染物質

解決方案

NI1811和NI1811-RH系列，是唯一能夠在鎳釋放測試中給出可重複的結果，並能夠給您安全的生產過程。

WHITE GOLD - 白金 • 750‰

	Code 編號	Main formulation 主要配方						Main features 主要特點	Colour shade 色調	Hardness 硬度 AC/AH
		Ni%	Zn%	Pd%	Ag%	Deox	G.R.			
CASTING 鑄造	WB149C	13	19	0	0	Med	Low	Very soft alloy, higher protection for stones while cooling 非常柔軟的補口; 在冷卻時對寶石有高度保護	Off-white YI 31,5	175/175 HV
	WB142C	17	17	0	12	Med	Low	Suitable in all titles Low processing temperatures 適用於所有成色; 低處理溫度	Off-white YI 29,6	125/180 HV
	WD480C	20	20	0	0	Med	Low	Casting in closed system 適用於密閉機器倒模	Off-white YI 25,6	195/195 HV
	WD481CW	19	16	0	7	Med	Med	The best choice for stone-in-place casting in title 750‰ Low processing temperatures 750‰ 成色蠟鑲的最佳選擇; 低處理溫度	Off-white YI 26,4	200/280 HV
	WF480B	24	16	0	0	Med	Low	Soft and highly reusable. Good fluidity 柔軟度高; 高覆用性; 流動性高	Std white YI 23,9	185/275 HV
	WH80D	27	17	0	0	Med	Med	Suitable for stone-in-place casting High reusability 適用於蠟鑲; 高覆用性	Std white YI 22,3	215/235 HV
	NI1811-03 Ni1811	19	12	0	0	Med	Very high	Ni-safe alloy Suitable for stone-in-place casting in closed system 低鎳釋放補口; 適用於適用於密閉機器倒模的蠟鑲	Std white YI 24,0	180/285 HV
	WH85B2 Proderma	0	8	31	35	Med	High	Proderma nickel-free, palladium based formulation High as-cast hardness, age-hardenable alloy Proderma無鎳, 鈀基配方; 高鑄態硬度; 可加硬補口	Off-white YI 29,5	160/210 HV
	NF510 Proderma	0	0	41	8	Min	High	Proderma nickel-free, palladium based formulation. Low process temperatures Proderma 無鎳, 鈀基配方; 低處理溫度	Std white YI 20,5	180/190 HV
MECHANICAL WORKING 機械加工	WA1481T	13	17	0	0	Min	High	High chemical resistance to hollowing phase Suitable in all title 空心狀態時耐化學腐蝕性高; 適用於所有成色	Off-white YI 30,8	170/275 HV
	WA1481T2	13	17	0	0	Min	Med	Suitable for hollow chain and hollow tube production 適用於空心鍊條和空心管生產	Off-white YI 30,8	170/275 HV
	WB140W	14	15	0	0	Min	Low	Soft and easily deformable. High quality/price ratio 柔軟易變形; 高性價比	Off-white YI 30,7	190/281 HV
	WB1483W	14	16	0	0	Min	Low	Easy to use, soft and easily deformable 易於使用; 柔軟易變形	Off-white YI 29,9	175/285 HV
	OB304R	21	13	0	0	Min	Med	Mechanical working on massive and hollow processes. High quality/price ratio 適用於大型空心工序的機械加工; 高性價比	Off-white YI 25,3	180/230 HV
	WE480CW1	20	12	0	0	Min	High	Excellent for continuous casting of tube 適用於連續鑄管	Off-white YI 28,5	190/240 HV
	OB585QP	26	12	0	0	Min	Med	Excellent in sheet production for stamping and blanking 非常適用於壓片和沖裁生產	Std white YI 23,4	190/220 HV
	OB325F	30	16	0	0	Min	Med	Excellent in sheet production for blanking 非常適用於沖裁生產	Std white YI 22,2	220/240 HV
	NI1811-04 Ni1811	13	17	0	0	Min	Very high	Ni-safe alloy. Mechanical working on massive and hollow processes 低鎳釋放補口; 適用於大型空心工序的機械加工	Off-white YI 28,5	170/270 HV

	Code 編號	Main formulation 主要配方						Main features 主要特點	Colour shade 色調	Hardness 硬度 AC/AH
		Ni%	Zn%	Pd%	Ag%	Deox	G.R.			
ALL-PURPOSE 通用	WE136C	20	12	0	0	Med	High	Perfect for casting in closed systems Suitable for stone-in-place casting 適用於密閉機器倒模; 適用於蠟鑲	Std white YI 23,9	180/180 HV
	WH80B2	28	16	0	0	Med	High	Minimum residue in the crucible after casting 鑄造後坩堝中殘留物較少	Std white YI 24,1	200/240 HV
	NI1811-01 Ni1811	18	12	0	0	Min	Very high	Ni-safe alloy. All-purpose alloy (casting in closed systems and general mechanical working) 低鎳釋放補口; 通用補口 (密閉機器倒模和一般機械加工)	Off-white YI 25,5	180/280 HV
	NI1811-RHB Ni1811	10	15	0	0	Min	Very high	The lowest nickel release values of the whole NI1811 line Rhodium 2% in the formulation 整個NI1811系列中最低鎳釋放值; 配方中含有2%銑元素	Off-white YI 28,7	165/300 HV
	NI1811-RHC Ni1811	12	9	0	0	Low	Very high	Rhodium 1,5% in the formulation. Casting with stones in closed systems and sheet production 銑含量1.5%配方; 適用於密閉機器倒模的蠟鑲和壓片	Off-white YI 26,0	190/300 HV
	NF505 Proderma	0	10	14	20	Med	Med	Proderma nickel-free, palladium based formulation As low as 14% Pd in the master alloy! Proderma 無鎳的鈀基配方; 在補口中低至14%的鈀含量!	Off-white YI 31,8	160/185 HV
	NF509 Proderma	0	10	25,5	42	Low	Med	Proderma nickel-free, palladium based formulation High as cast hardness Proderma 無鎳的鈀基配方; 高鑄造硬度	Off-white YI 27,0	170/170 HV
	NF511 Proderma	0	2	53	0	Min	High	Proderma nickel-free, palladium based formulation Premium white in 750‰ title. Age-hardenable Proderma 無鎳的鈀基配方; 在750‰成色時能達到極白的顏色; 可時效硬化	Premium white YI 17,1	160/210 HV
	NF512 Proderma	0	2	62	0	Min	High	Proderma nickel-free, palladium based formulation The whitest alloy in its range. Age-hardenable Proderma 無鎳的鈀基配方; 在系列中能達到最白顏色的補口; 可時效硬化	Premium white YI 15,9	150/200 HV

FOCUS ON

NI1811-03

- Nickel-safe alloy (99,9% compliance)
- Suitable for stone-in-place casting in closed system
- 低鎳釋放補口 (99.9%能達到鎳釋放標準要求)
- 適用於適用於密閉機器倒模的蠟鑲

WA1481T

- High chemical resistance to hollowing phase
- Give excellent results for the most complicated type of mechanical working
- Suitable in all titles
- 空心狀態時耐化學腐蝕性高
- 為最複雜的機械加工提供最佳效果
- 適用於所有成色

WH80B2

- Suitable for both casting and mechanical working
- Minimum residue in the crucible after casting
- 同時適用於倒模和機械加工
- 鑄造後坩堝中殘留物較少



WHITE GOLD - 白金 • 375-585‰

	Code 編號	Main formulation 主要配方						Suitable for 適用於		Main features 主要特點	Colour shade 色調	Hardness 硬度 AC/AH
		Ni%	Zn%	Pd%	Ag%	Deox	G.R.	375	585			
CASTING 鑄造	OB307W1	20	20	0	3	High	Med	✓	✓	Casting with stones in closed and open system 適用於火槍和密閉機器倒模的蠟鑲	375‰: YI 17,8 585‰: YI 20,2	375‰: 125/160 HV 585‰: 145/180 HV
	WB140C	18	18	0	15	Med	Low	✓	✓	Among the best choices for stone-in-place casting Low processing temperatures 用於蠟鑲的最佳選擇; 低處理溫度	375‰: YI 17,9 585‰: YI 22,2	375‰: 155/205 HV 585‰: 165/245 HV
	WB142C	17	17	0	12	Med	Low	✓	✓	Suitable in all titles! Among the best choices for stone-in-place casting. Low processing temperatures 適用於所有成色! 是蠟鑲的最佳選擇; 低處理溫度	375‰: YI 20,6 585‰: YI 22,5	375‰: 125/125 HV 585‰: 185/185 HV
	WB143C	14	16	0	28	Med	Low	✓	✓	The best choice for stone-in-place casting. Very low processing temperatures 用於蠟鑲的最佳選擇; 處理溫度非常低	375‰: YI 20,6 585‰: YI 25,0	375‰: 180/235 HV 585‰: 215/315 HV
	WB149C	13	19	0	0	Med	Low	✓	✓	Very soft alloy, higher protection for stones while cooling. Casting in closed systems in title 585 - 750‰ 非常柔軟的補口; 在冷卻時對寶石有高度保護; 適用於585–750‰成色的密閉機器倒模	585‰: YI 24,9	585‰: 135/135 HV
	WE134C	20	18	0	0	Med	High	✓	✓	Suitable in all titles! Perfect for casting in closed systems, suitable for stone-in-place 適用於所有成色! 適用於密閉機器倒模; 適用於蠟鑲	375‰: YI 18 585‰: YI 18,7	375‰: 150/150 HV 585‰: 160/160 HV
	WA12B5 Proderma	0	8	0	75	Med	Med	✓		Proderma Ni-Pd-free formulation Perfect for stone-in-place casting Proderma 無鎳, 無鉍配方; 適用於蠟鑲	375‰: YI 18	375‰: 125/125 HV
	NF505 Proderma	0	10	14	20	Med	Med	✓	✓	Proderma Ni-free formulation High as-cast hardness Proderma 無鎳配方; 高鑄造硬度	375‰: YI 25 585‰: YI 29	375‰: 165/165 HV 585‰: 185/185 HV
MECHANICAL WORKING 機械加工	OB304R	21	13	0	0	Min	Med	✓	✓	Mechanical working on massive and hollow processes Excellent in sheet production 適用於大型空心工序的機械加工; 壓片工序有優良表現	375‰: YI 17,2 585‰: YI 21,1	375‰: 150/150 HV 585‰: 145/175 HV
	OB585QP	26	12	0	0	Min	Med		✓	Excellent in sheet production for stamping and blanking 沖壓和沖裁的壓片生產工序有優良表現	585‰: YI 19	585‰: 170/195 HV
	WA1481T	13	17	0	0	Min	High	✓	✓	High level of grain refiners. High chemical resistance to hollowing phase 高含量的晶粒細化劑; 空心狀態時耐化學腐蝕性高	375‰: YI 21,8 585‰: YI 26,2	375‰: 115/115 HV 585‰: 135/135 HV
	WA1481T2	13	17	0	0	Min	Med	✓	✓	Hollow chain and hollow tube production in all titles. Different grain refinement system from WA1481T 適用於所有成色的空心鍊條和中空管生產; 和WA1481T有不同的晶粒細化系統	585‰: YI 26,2	585‰: 135/135 HV
	WA1482B	10	21	0	0	Min	Med	✓	✓	Very soft and easily deformable Mechanical working of sheet and wire 非常柔軟, 易變形; 適用於壓片和拉線的機械加工	375‰: YI 23,5 585‰: YI 26,6	375‰: 120/120 HV 585‰: 135/135 HV

	Code Codice	Main formulation Formulazione base						Suitable for 適用於		Main features Caratteristiche principali	Colour shade Sfumatura colore	Hardness Durezza AC/AH
		Ni%	Zn%	Pd%	Ag%	Deox	G.R.	375	585			
MECHANICAL WORKING 機械加工	WB140W	14	15	0	0	Min	Med	✓	✓	Mechanical working on massive and hollow processes. Suitable for continuous casting of tube in 750‰ gold 適用於大型空心工序的機械加工; 適用於750‰成色金的連續鑄管	375‰: YI 21 585‰: YI 26	375‰: 130/130 HV 585‰: 145/280 HV
	WB1482W	16	16	0	0	Min	Low	✓	✓	Soft, easily deformable and high reusability. Sheet and wire production 柔軟, 易變形, 重複性高; 適用於壓片和拉線	375‰: YI 21,2 585‰: YI 23,1	375‰: 115/145 HV 585‰: 155/155 HV
	WE480CW1	20	12	0	0	Min	High		✓	Perfect for white gold wedding bands production in title 585‰ Excellent for CC of tube 非常適合生產585‰成色的白金婚介; 適用於CC管工序	585‰: YI 23,9	585‰: 160/160 HV
	NI1811-05 Ni1811	8	17	0	0	Min	Very high		✓	Nickel safe alloy, 99.9% compliance to EN1811:2015. Mechanical working on massive and hollow processes 低鎳釋放補口, 99.9%符合EN1811 : 2015標準; 適用於大型空心工序的機械加工	585‰: YI 27,6	585‰: 130/130 HV
	NPF201 Proderma	0	8	0	79	Min	Very high	✓		Proderma Ni-Pd-free formulation Suitable for the most demanding working processes. High chemical and thermal resistance to hollowing phase Proderma 無鎳, 無鉍配方; 適合最苛刻的工作流程; 空心狀態時耐化學腐蝕性和耐熱性高	375‰: YI 19	375‰: 170/170 HV
	NPF301 Proderma	0	8	0	82	Min	Med	✓		Proderma Ni-Pd-free formulation, all-purpose. Age-hardenable alloy in title 375‰ (190 HV) Proderma 無鎳, 無鉍配方; 多用途; 375‰成色的可硬化補口 (190HV)	375‰: YI 17,4	375‰: 140/190 HV
ALL-PURPOSE 通用	NI1811-RHC Ni1811	12	9	0	0	Low	Very high		✓	Rhodium 1.5% in master alloy, casting with stones in closed systems and sheet production 100% compliance on EN1811:2015 銻含量1.5%配方; 同時適用於密閉機器倒模的蠟鑲和壓片; 100%符合EN1811: 2015標準	585‰: YI 24,1	585‰: 160/160 HV
	NF508 Proderma	0	4	31	62	Min	Med	✓	✓	Proderma Ni-free formulation, excellent for mechanical working and casting without stones Proderma 無鎳配方; 機械加工和倒模都有優異的表現	375‰: YI 18 585‰: YI 19,7	375‰: 180/180 HV 585‰: 105/105 HV

FOCUS ON

WB140C

- Among the best choice for stone-in-place casting
- Low processing temperature

- 用於蠟鑲的最佳選擇
- 低處理溫度

WB140W

- Mechanical working on massive and hollow processes
- Suitable for continuous casting of tube in 750% gold

- 適用於大型空心工序的機械加工
- 適用於750‰成色金的連續鑄管

NPF301

- Proderma Ni-Pd-free formulation, all-purpose
- Age-hardenable alloy in title 375‰ (190 HV)!

- 多用途無鎳, 無鉍配方
- 375‰成色的可時效硬化補口 (190HV)



RED GOLD - 紅金 • 750‰

	Code 編號	Main formulation 主要配方				Main features 主要特點	Colour shade 色調	Hardness 硬度 AC/AH
		Ag%	Zn%	Deox	G.R.			
CASTING 鑄造	C185N	6	3	Med	High	Stone-in-place casting for 750‰ open systems only! 僅限750‰成色的火槍倒模的蠟鑲！	Red 紅色	750‰: 170/320 HV
	C185N1	11	2	Med	High	Light red colour (intermediate between red and pink) Stone-in-place casting for 750‰ (open systems only) 淺紅色（紅色和粉紅色之間）； 750‰成色的蠟鑲（僅限火槍倒模）	Red 紅色	750‰: 160/320 HV
	OR124W	8	3	Min	Med	Mechanical working of sheet and wire Suitable for continuous casting of tube in 750‰ 適用於壓片和拉線的機械加工； 適用於750‰成色的連續鑄管	Red 紅色	750‰: 150/320 HV
MECH. WORKING 機械加工	OR129W	16	2	Min	High	Mechanical working on massive and hollow processes 適用於大型空心工序的機械加工	Pink 粉紅色	750‰: 180/320 HV
	OR134W1	4	2	Min	Med	Mechanical working of sheet and wire Excellent quality/price ratio 適用於壓片和拉線的機械加工； 高性價比	Deep red 深紅色	750‰: 180/320 HV
	OR133	18	2	Min	Very high	Compliant to 5N colour standard in 750‰ gold Minimizing brittleness issues in 750‰ pink gold 符合在750‰黃金中5N黃金色標準； 減少750‰成色粉紅金的脆性問題	Pink 粉紅色	750‰: 180/320 HV
ALL-PURPOSE 通用	OR134	6	2	Min	Very high	Unique deep red colour! Minimizing brittleness issues in 750‰ pink gold 獨特的深紅色！ 減少750‰成色粉紅金的脆性問題	Deep red 深紅色	750‰: 190/330 HV
	OR134T	5	3	Min	High	Slightly lighter hue than OR134 比OR134稍淺色一點	Red 紅色	750‰: 190/320 HV
	OR134U	3	2	Min	High	Even deeper red colour than OR134! Best suitable for wedding band production 比OR134更深的紅色！ 最適合婚介製作	Deep red 深紅色	750‰: 190/330 HV
	OR168	5	3	Min	Very high	Slightly lighter hue than OR134 比OR134稍淺色一點	Red 紅色	750‰: 190/320 HV
	YD148L	18	5	Min	Med	Very flexible in different processes. Excellent quality/price ratio 適用於不同的流程； 高性價比	Pink 粉紅色	750‰: 180/310 HV

RED GOLD - 紅金 • 375-585‰

	Code 編號	Main formulation 主要配方				Suitable for 適用於		Main features 主要特點	Colour shade 色調	Hardness 硬度 AC/AH
		Ag%	Zn%	Deox	G.R.	375	585			
CASTING 鑄造	C145N	16	2	Med	High	√	√	Standard Russian red colour in title 585‰. Suitable for stone-in-place casting in open and closed systems 585‰成色的標準俄羅斯紅色； 適用於火槍和密閉機器倒模的蠟鑲。	Russian Red 俄羅斯紅色	375‰: 140/170 HV 585‰: 160/180 HV
	C185N	6	3	Med	High	√	√	Stone-in-place casting in low titles 適用於低成色的蠟鑲	Red 紅色	375‰: 120/140 HV 585‰: 125/140 HV
	OR129C	17	2	High	Med	√	√	Standard Russian red colour in title 585‰ Suitable for stone-in-place casting in open systems 585‰成色的標準俄羅斯紅色； 適用於火槍倒模的蠟鑲	Russian Red 俄羅斯紅色	375‰: 120/180 HV 585‰: 150/180 HV
MECHANICAL WORKING 機械加工	YD148C	17	6	High	Med	√	√	Southern Eastern Asian colour 東南亞色	Pink 粉紅色	375‰: 160/180 HV 585‰: 150/180 HV
	OR135A	3	3	Min	Low	√	√	Suitable for general working, low titles Good quality/price ratio 適用於一般機械加工； 適用於低成色；高性價比	Red 紅色	375‰: 105/130 HV 585‰: 125/150 HV
	OR134W1	4	2	Min	Med		√	Mechanical working of sheet and wire. Excellent quality/price ratio 適用於壓片和拉線的機械加工； 高性價比	Red 紅色	585‰: 125/125 HV
	OR124W	8	3	Min	Med	√	√	Mechanical working of sheet and wire 適用於壓片和拉線的機械加工	Red 紅色	375‰: 120/165 HV 585‰: 145/175 HV
	OR129W	16	2	Min	High	√	√	Mechanical working on massive and hollow processes Very compact surface and high chemical resistance 適用於大型空心工序的機械加工； 非常緊湊的表面和高耐化學腐蝕性	Pink 粉紅色	375‰: 150/175 HV 585‰: 135/180 HV
ALL-PURPOSE 通用	OR133	18	2	Min	Very high	√	√	Very flexible in different processes. Small crystal grain structure 適用於不同的流程； 細小的晶體結構	Pink 粉紅色	375‰: 139/165 HV 585‰: 163/180 HV
	OR134	6	2	Min	Very high	√	√	Unique deep red colour! 獨特的深紅色！	Deep red 深紅色	375‰: 85/85 HV 585‰: 115/115 HV

FOCUS ON

OR133

- Pink colour, compliant to 5N standard
- Minimizing brittleness issues in 750‰ title

- 符合在750‰黃金中5N黃金色標準
- 減少750‰成色粉紅金的脆性問題

OR134

- Best selling alloy
- Unique deep red colour!
- Minimizing brittleness issues in 750‰ pink gold

- 暢銷產品
- 獨特的深紅色！
- 減少750‰成色粉紅金的脆性問題

OR134W1

- Mechanical working of sheet and wire
- Excellent quality/ratio

- 適用於壓片和拉線的機械加工
- 高性價比



FOCUS ON

C145N

- The best selling Russian red colour in title 585‰
- Suitable for stone-in-place casting in open and closed systems

- 585‰成色中最暢銷的標準俄羅斯紅色
- 適用於火槍和密閉機器倒模的蠟鑲

OR134W1

- Mechanical working of sheet and wire
- Excellent quality/ratio

- 適用於壓片和拉線的機械加工
- 高性價比

OR124W

- Mechanical working of sheet and wire
- Good colour

- 適用於壓片和拉線的機械加工
- 良好的顏色



PRE-MASTER ALLOYS FOR YELLOW AND RED GOLD

黃金和紅金的預製補口

	Code 編號	Main formulation 主要配方			Suitable for 適用於			Recommended silver quantity to be added 建議加入的銀含量	Colour shade 色調	Hardness 硬度 AC/AH
		Zn%	Deox	G.R.	375/585	750	875/917			
CASTING 鑄造	A182NM	1	Min	High		√	√	35-50 g/kg in 917‰ title 100-150 g/kg in 750‰ title	Light-rich 淺黃色-深黃色	750‰: 130/180 HV
	C182NM	20	Med	Med		√		100-140 g/kg in 750‰ title	Light-rich 淺黃色-深黃色	750‰: 135/195 HV
	C145QM	3	Med	High	√			50-60 g/kg in 585‰ title 65-85 g/kg in 375‰ title	Russian red 俄羅斯紅色	375‰: 140/170 HV 585‰: 160/180 HV
	OR129CM	3	High	Med	√			45-65 g/kg in 585‰ title 70-90 g/kg in 375‰ title	Russian red 俄羅斯紅色	375‰: 120/180 HV 585‰: 150/180 HV
	R14CM	6	Med	Low	√			40-60 g/kg in 585‰ title 60-80 g/kg in 375‰ title	Pink-red 粉紅色-紅色	375‰: 105/130 HV 585‰: 125/150 HV
	OG602AM	20	Med	Low	√			70-80 g/kg in 585‰ title 100-120 g/kg in 375‰ title	Light 淺黃色	375‰: 125/250 HV 585‰: 140/210 HV
	Y82AM	5	Med	Low		√		100-140 g/kg in 750‰ title	Light-rich 淺黃色-深黃色	750‰: 150/250 HV
MECHANICAL WORKING 機械加工	B182NM	5	Min	High		√	√	100-150 g/kg in 750‰ title	Light-rich 淺黃色-深黃色	750‰: 130/180 HV
	M18GH	5	Min	Med		√	√	100-150 g/kg in 750‰ title	Light-rich 淺黃色-深黃色	750‰: 140/210 HV
	OR129WM	3	Min	High	√			45-65 g/kg in 585‰ title 70-90 g/kg in 375‰ title	Russian red 俄羅斯紅色	375‰: 150/175 HV 585‰: 135/180 HV
	R148WM	2	Min	Med	√	√		20-40 g/kg in 585‰ title 40-60 g/kg in 375‰ title	Pink-red 粉紅色-紅色	375‰: 105/130 HV 585‰: 105/130 HV
	Y82WM	8	Min	High		√		100-140 g/kg in 750‰ title	Light-rich 淺黃色-深黃色	750‰: 150/250 HV
	Y142WM	17	Min	High		√		100-140 g/kg in 750‰ title	Light-rich 淺黃色-深黃色	750‰: 175/255 HV
	Y145TM	17	Min	High	√			45-65 g/kg in 585‰ title 75-95 g/kg in 375‰ title	Rich 深黃色	375‰: 115/150 HV 585‰: 135/145 HV
	Y146WM	20	Min	Med	√			40-60 g/kg in 585‰ title 50-90 g/kg in 375‰ title	Light 淺黃色	375‰: 90/100 HV 585‰: 115/125 HV

FOCUS ON

M18GH

- Suitable for mechanical working applications
- Best used with 100-150 g/kg in title 750‰

- 適用於機械加工
- 適用於750‰成色和100-150g/kg銀含量的合金

Y145TM

- Suitable for mechanical working applications in low titles
- Rich colour

- 適用於低成色的機械加工
- 較深的顏色

Y146WM

- Suitable for mechanical working applications in low titles
- Light colour

- 適用於低成色的機械加工
- 較淺的顏色



SILVER line

SILVER ALLOYS
銀補口

Silver is second to none

From the point of view of quantity worked, silver is the most used metal in the jewelry sector. Its glowing whiteness and its malleability are unique. It is also known to have several processing issues such as tarnishing, unsatisfactory hardness, porosity, firestain.

Legor Group, in a constant research to solve any processing limitation, proposes SILVER line:

a complete line of formulations to answer to all the requests of maximum productivity and increase of final product quality, as ready-to-use drops at guaranteed titles 925-930-935, and as master alloys.

銀是首屈一指的

從數量上看，銀是珠寶行業中最常用的金屬。其亮白度及延展性是獨一無二的。但也有已知的幾種加工問題，例如氧化，硬度不足，沙孔，紅印。

Legor Group 在不斷研究解決方法和處理限制中，研發出 SILVER line:

一系列配方，以滿足最大生產力和最終產品質量的所有要求，產品有保證925-930-935成色的即用型銀粒和補口。

READY-TO-USE SILVER - 即用型銀

	Code 編號	Main formulation 主要配方				Main features 主要特點	Hardness 硬度 AC/AH
		Ag%	Zn%	Deox	G.R.		
CASTING 鑄造	AG108MA	92,5	2	Very high	High	Best selling! Great surface and re-usability Ideal for stone in place on open and closed casting systems 暢銷產品！極好的表面和覆用性； 適用於火槍及密閉機器倒模的蠟鑲	925‰: 60/115 HV
	AG109MA	92,5	2	High	Low	Good surface quality in closed systems 密閉機器倒模時有良好表面質量	925‰: 55/125 HV
	AG115MA	92,5	2	High	High	Best selling! Great surface and good re-usability Ideal for stone in place on closed systems 暢銷產品！光滑表面，高覆用性； 非常適用於密閉機器倒模的蠟鑲	925‰: 55/135 HV
	S925CZA	92,5	4	High	Min	Suitable for stone-in-place casting with temperature sensitive stones High fluidity at low processing temperatures 適用於對溫度敏感寶石的蠟鑲； 在低加工溫度下有高流動性	925‰: 55/115 HV
	S925PHA	93	2	Low	Low	Specific for high productivity in closed casting systems Minimizes risks of hot cracks and crucible residues 專門用於密閉機器倒模提高生產率； 降低熱裂紋和坩堝殘留的風險	925‰: 60/135 HV
	SF928CHA	93	2	Med	Low	One of the easiest, most forgiving formulations for casting Good flowability and reusability 最簡單，容錯率最高的倒模配方之一； 良好的流動性和覆用性	925‰: 50/110 HV
ALL-PURPOSE 通用	AG114MA	92,5	0,5	Low	Low	Low deoxidizers level, enough to prevent firescale Minimum residue in the crucible after casting 足以防止紅印的低脫氧劑含量； 倒模後減少坩堝中的殘留物	925‰: 60/140 HV
	S925PTA	93,5	0,5	Min	High	High as cast hardness and high hardenability Casting in closed systems and complex deformation processes 高鑄造硬度，可硬化度高； 適用於密閉機器倒模和複雜的變形過程	925‰: 60/145 HV

SILVER MASTER ALLOYS - 銀補口

	Code 編號	Main formulation 主要配方			Main features 主要特點	Hardness 硬度 AC/AH
		Zn%	Deox	G.R.		
CASTING 鑄造	AG108M	30	Very high	High	Great surface and re-usability Ideal for stone-in-place on open and closed casting systems 極好的表面和覆用性； 適用於火槍及密閉機器倒模的蠟鑲	925‰: 60/115 HV
	AG109M	30	High	Low	Good surface quality in closed systems 密閉機器倒模時有良好表面質量	925‰: 55/125 HV
	AG115M	36	Med	High	Great surface and good re-usability Ideal for stone-in-place on closed systems 光滑表面，高覆用性； 非常適用於密閉機器倒模的蠟鑲	925‰: 55/135 HV
	S925CZ	55	High	Min	Suitable for stone-in-place casting with temperature sensitive stones High fluidity at low processing temperatures 適用於對溫度敏感寶石的蠟鑲； 在低加工溫度下有高流動性	925‰: 55/115 HV
	S925PHT	30	Low	Low	Specific for high productivity in closed casting systems Minimizes risks of hot cracks and crucible residues 專門用於密閉機器倒模提高生產率； 降低熱裂紋和坩堝殘留的風險	925‰: 60/135 HV
	SF928CH	28	Med	Low	One of the easiest, most forgiving formulations for casting Good flowability and reusability 最簡單，容錯率最高的倒模配方之一； 良好的流動性和覆用性	925‰: 50/110 HV
MEC. WORK 機械加工	S925LE	2	Min	Min	Best on massive chain, wire production. Contains 1 % indium 非常適合鏈條和拉線生產；含有1%銦	925‰: 60/145 HV
	S925WH	2	Min	Med	Sheet and wire production 適用於壓片和拉線生產	925‰: 65/150 HV
	S925RT	6	Min	High	Thin thicknesses, laser soldered chains 適用於幼細的激光焊接鏈條	925‰: 60/145 HV
ALL-PURPOSE 通用	AG114M	20	Low	Low	Low deoxidizers level, enough to prevent firescale Minimum residue in the crucible after casting 足以防止紅印的低脫氧劑含量； 倒模後減少坩堝中的殘留物	925‰: 60/140 HV
	S925PT	7	Min	High	High as cast hardness and high hardenability Casting in closed systems and complex deformation processes 高鑄造硬度，高可硬化度； 適用於密閉機器倒模和複雜的變形過程	925‰: 60/145 HV

FOCUS ON

AG108MA

- Great surface and re-usability
 - Ideal for stone in place on open and closed casting systems
-
- 極好的表面和覆用性
 - 適用於火槍及密閉機器倒模的蠟鑲

AG115MA

- Great surface and good re-usability
 - Ideal for stone in place on closed systems
-
- 光滑表面，高覆用性
 - 非常適用於密閉機器倒模的蠟鑲

S925PTA

- High as cast hardness and high hardenability
 - Casting in closed systems and complex deformation processes
-
- 高鑄造硬度，可硬化度高
 - 適用於密閉機器倒模和複雜的變形過程



FOCUS ON

AG109M

- Medium deox content
 - Good surface quality in closed systems
-
- 中等脫氧劑含量
 - 密閉機器倒模時有良好表面質量

AG114M

- Low deoxidizers level, enough to prevent firescale
 - Minimum residue in the crucible after casting
-
- 高鑄造硬度，高可硬化度
 - 適用於密閉機器倒模和複雜的變形過程

S925RT

- Thin thicknesses, laser soldered chains
-
- 適用於幼細的激光焊接鏈條



... January 2017: Legor Group introduces SILNOVA®

PATENT
PENDING

ARTICLE TAKEN FROM: VO+ MAGAZINE, JANUARY 2017.
INTERVIEW TO MASSIMO POLIERO.

T-Gold 2017 is the setting for the world preview of SILNOVA®, the innovative product which is set to change the way silver is conceived. Massimo Poliero, CEO of Legor Group S.p.A. told us all about it.

We are entering a new era in terms of dealing with tarnishing, or the oxidation or blackening of silver. Since the 90's numerous alloys and products promising to maintain the natural colour of the metal, without resorting to the use of aesthetic-changing or protective treatments have been developed. "Here at Legor Group, we also explored the issue" explains Massimo Poliero, CEO of Legor Group S.p.A. "and we worked on it at length, until we came to a conclusion: modifying something that already existed wasn't enough. We needed to think 'out of the box' and create something completely new.

This led us to implement a 3-year R&D project, during which 186 formulas underwent thousands of tests in the lab and some of them produced some very interesting results. But this time we decided to go further than the lab experience and subject the highest performing formulas to real-life tests and involve branches of the Legor Group in Bangkok, Mumbai and New York. We chose completely different testers with totally different conditions in terms of humidity and temperature. The aim was to gather photographic documentation which was comparable." This original systematic documentation process, never used before within this sector, meant that we could record extremely useful scientific results and obtain indisputable answers.

"The results are amazing: the SILNOVA® alloy is definitely the most resistant to tarnishing ever tested. With a tarnish resistance 20 times higher than that of traditional Sterling Silver. There is another fundamental feature that distinguishes SILNOVA® from any other alloy born with the same promise: its frame of reference is not limited to silver alloys, in fact our product raises the bar of the no-tarnish performance to include gold alloys." Which is the main ingredient which enabled you to obtain these results? "One of our secrets – explains Poliero – is that we introduced palladium as an ennobling element, distributed in perfect balance with the other elements and in a composition that's copper-free.

But that's not all...after three years of R&D we are delighted to announce the launch of SILNOVA® to the world, the patent-pending silver alloy which reveals the bright, natural colour of silver to consumers. It avoids the need for plating and frees silversmiths as well as the entire planet from the use of potassium cyanide (utilised for silver plating), otherwise necessary for making the product last."

文章摘自：VO +雜誌，2017年1月。
採訪 MASSIMO POLIERO

T-GOLD 2017是SILNOVA首次面世的展覽，一種創新產品旨在改變銀的設計方式。由LEGOR GROUP S.P.A.的行政總裁MASSIMO POLIERO介紹。

我們正在進入一個新的時代，以處理銀的變色，氧化或變黑。自90年代以來，許多合金和產品有望保持金屬的自然色彩，而不訴諸於使用美學改變或保護性處理。LEGOR GROUP S.P.A. 行政總裁 MASSIMO POLIERO 解釋：“LEGOR GROUP 也探討了這個問題，我們一直在努力，直到得出結論：修改現有的東西還不夠，我們思考時需要“打破常規”，創造出全新的東西。

這促使我們實施了一個為期3年的研發項目，其中186個配方在實驗室中進行了數千次測試，其中一些則產生了非常有趣的結果。但是這次我們決定比單單在實驗室進行的試驗更加深入，並且聯同 LEGOR GROUP 在曼谷，孟買和紐約的分部，將最高性能的配方用在現實生活中作測試。我們選擇了完全不同的試驗品和不同的實驗條件，例如濕度和溫度。目的是收集可比較的照片文檔。這原始而有系統的文件記錄過程從未在此行業內使用，意味著我們可以記錄極為有用的科學化結果，並獲得無可爭議的答案。

“結果是驚人的：SILNOVA 合金絕對是防氧化能力最好的試驗品，防氧化能力比傳統925銀高20倍，另外還有一個基本特徵，能分辨SILNOVA 與任何其他具有相同承諾的合金：它的參考框架不僅限於銀合金，更包括金合金，從而讓我們的產品提高了防氧化的表現。“哪些是使您獲得這些結果的主要成分？POLIERO解釋”我們的秘密之一是我們引進鈀作為一個特別元素，與其他元素完美平衡，並且是不含銅的成分。

但這不是全部...經過三年的研發，我們很高興地宣布推出 SILNOVA到世界各地，這是正在申請專利的銀補口，向客戶揭示了銀的明亮自然的色澤。它避免了正常生產所需的電鍍和減低銀匠以及整個行業對氰化鉀的需要（用於鍍銀）。”

SILNOVA®

Brings silver to light



SILNOVA®. The new silver alloy that keeps its light over time. Naturally.

Without any galvanic treatment, equal to a gold alloy, and 20 times longer than standard Sterling silver, SILNOVA® keeps being bright over time. Eye-catcher thanks to its unique colour, white and very shiny, it is visibly different from any other silver in the market.

...what might be its secret ingredient?

SILNOVA 新的銀補口隨著時間的流逝都能自然地保持光亮。

沒有任何電鍍處理，防氧化能力也等於金合金，和比標準925銀高20倍，SILNOVA隨著時間的流逝也能保持光亮。由於其獨特的顏色，亮白和非常有光澤，SILNOVA是觸目的。它是明顯地不同於任何市場上的銀產品。

...它的秘密成分會是什麼呢？

www.silnova.it

PRECIOUS
line

PLATINOID ALLOYS AND RAW PRECIOUS METALS
鉑類補口和貴金屬原料

Legor Group noble elite

The production of platinum and palladium jewellery at title 950 and 900 has always been a challenge in the creation of optimal quality objects. Legor Group research got to revolutionarize the common platinoid based alloys at title 950 and 900.

The result is PRECIOUS line, a line of products of superior class in terms of fluidity, hardness and resistance to wear, in which the positive characteristics of each of the base products have been maintained. Here are the advantages:

- Less susceptibility to scratching and wear
- Superior surface quality and resistance to abrasion
- Ease of processing in both the casting and finishing phase

Besides platinum and palladium alloys, Precious line also includes a selection of precious raw metals.

Legor Group 尊貴系列

生產950‰和900‰成色的鉑金和鈀金首飾一直是創造最優質產品的一個挑戰。 Legor Group的研究工作想要革新950‰和900‰成色的一般鉑類補口。

研究結果誕生了 PRECIOUS line，一系列產品在流動性，硬度和耐磨性方面都有極佳的表現，並保持每種基礎產品的正面特性。優點如下：

- 不易刮花和磨損
- 卓越的表面質量和耐磨性
- 在鑄造和執模打磨階段都易於加工

除鉑和鈀合金外，PRECIOUS line 還包括一系列的貴金屬原料。

FOCUS ON

AGOF-10

AGOF-10, thanks to a special production process, is the only oxygen-free silver on the market, as it has an oxygen content lower than 10 ppm. The advantages are:

- Guarantee of a higher quality
- Elimination of pre-graining (reduction of times and costs)
- Lower production rejections
- Higher process stability
- Higher recycling of the alloy

由於採用了特殊的生產工序，AGOF-10是市場上唯一的無氧銀，因為其含氧量低於10 ppm，其優點在於：

- 保證更高質量
- 免除夾銀流程（減少時間和成本）
- 降低拒收率
- 更高的工序穩定性
- 合金回收率高

AGOF-10 improves the performance of any master alloy, improving therefore the quality of the final product.

AGOF-10 可改善任何補口的性能，從而改善最終產品的質量。

PLATINUM ALLOYS - 鉑金補口

	Code 編號	Main formulation 主要配方			Recommended platinum quantity to be added 建議加入的鉑含量	Main features 主要特點	Hardness 硬度 AC/AH
		Pt%	Pd%	Other%			
READY-TO-USE 即用型鉑金	PT950CO-S	95	0	Co + others 5	Ready-to-use platinum 即用型鉑金	Easy to use. High fluidity, surface quality and re-usability. Non-magnetic 容易使用; 流動性，表面質量和覆用性高; 無磁性	175 HV
	PT950IR-S	95	0	Ir + others 5		Very brilliant colour. Protection against oxidation High fluidity and good workability 非常優越的顏色; 防氧化; 高流動性和良好的可加工性	145 HV
	PT950RU-S	95	0	Ru + others 5		Very brilliant colour High fluidity and deformability. Resistance to wear 非常優越的顏色; 高流動性和變形性; 耐磨損	170 HV
	PT900IR-S	90	0	Ir + others 10		Very brilliant colour. Protection against oxidation 非常優越的顏色; 防氧化	175 HV
MASTER ALLOYS 補口	PT198SM	0	76	Co 24	950‰: 950g/kg Pt99,99% + 50g/kg PT198SM 900‰: 900g/kg Pt99,99% + 100g/kg PT198SM	Excellent whiteness, forgiving formulation Casting and simple working processes 優良的亮白度; 高容錯率的配方; 適用於倒模和簡單的加工流程	160 HV
	PT950IR-SM	75	0	Ir + others 20	950‰: 800g/kg Pt99,99% + 200g/kg PT950IR-SM 900‰: 600g/kg Pt99,99% + 400g/kg PT950IR-SM	Pre-mixed platinum master alloy, allows mixing of iridium 預先混合的鉑金補口; 能夠混合鈱	900‰: 175 HV 950‰: 145 HV
	PT950RU-SM	75	0	Ru + others 20	950‰: 800g/kg Pt99,99% + 200g/kg PT950RU-SM 900‰: 600g/kg Pt99,99% + 400g/kg PT950RU-SM	Pre-mixed platinum master alloy, allows mixing of ruthenium 預先混合的鉑金補口; 能夠混合鈦	170 HV
	PT950CM	0	0	Co 20 Ga 30	950‰: 950g/kg Pt99,99% + 50g/kg PT950CM	Master alloy in drops! 粒狀補口!	160 HV

PALLADIUM ALLOYS - 鈀補口

	Code 編號	Main formulation 主要配方			Recommended platinum quantity to be added 建議加入的鉑含量	Main features 主要特點	Hardness 硬度 AC/AH
		Pt%	Pd%	Other%			
	PD950A	0	95	Ag 5	Ready-to-use palladium 即用型鈀	Good colour 良好的顏色	80 HV
	PD950G	0	95	Ga 5 + others	Ready-to-use palladium 即用型鈀	High flowability, high surface quality 流動性高; 表面質量高	110 HV

PRECIOUS RAW MATERIALS - 貴金屬原料

	Code 編號	Description 描述	Physical specification 物理規格	Standard packaging 標準包裝
	AGOF-10	Oxygen-free silver, 99,99% minimum title (O2 < 10 ppm) in drops 無氧銀，最低成色為99.99% (O2 <10ppm) 的粒狀	Drops, average diameter 2 - 6 mm 粒狀，平均直徑為2-6mm	10 kg cloth bags 10公斤布袋
	AG9999	Fine silver in drops, 99,99% minimum title 優質銀粒，最低成色為99.99%	Drops, average diameter 2 - 6 mm 粒狀，平均直徑為2-6mm	20 kg bags 20公斤布袋
	PALLADIO	Palladium, 99,95% minimum title 鈀，最低成色為99.95%	Sheet, sponge 片狀，海綿	In weight 以重量計算
	PLATINO	Platinum sheet, 99,95% minimum title 鉑片，最低成色為99.95%	Sheet 片狀	In weight 以重量計算
	IRIDIO	Iridium powder, 99,95% minimum title 鈱粉，最低成色為99.95%	Powder 粉狀	In weight 以重量計算
	RUTENIO	Ruthenium powder, 99,95% minimum title 鈦粉，最低成色為99.95%	Powder 粉狀	In weight 以重量計算



FASHION line, all that glitter ain’t gold

Our copper-based alloys in drops (brass, bronze and alpaca) designed for costume jewelry and fashion items are perfect for non-precious jewelry and fashion accessories. They are all characterized by the following winning points:

- **High purity:** our products are made starting from high-end quality, oxygen-free raw materials in strictly controlled processes. Designed without lead, cadmium or other noxious elements as alloy components;
- **Regulations compliance:** tolerances on impurities are much stricter than what currently requested by international regulations on chemical substances;
- **Product certification:** every batch of our products is supplied with technical specifications and certifications of conformity.

FASHION line, 所有閃爍生光的都不一定是金

我們的銅基合金粒（黃銅，青銅和白銅）專為服裝首飾和時尚產品設計，非常適合非貴金屬的珠寶首飾和時尚配飾。他們的特色是以下優點：

- **高純度：**我們的產品是從高端質量，無氧原料在嚴格監控的過程下製造的。合金成分設計成不含鉛，鎘或其他有害元素；
- **遵從法規：**雜質的接受程度比國際化學物質規定要求的要嚴格得多；
- **產品認證：**每批產品均提供技術規格和合格證明。

BRASS, BRONZES, ALPACAS - 黃銅，青銅，白銅

	Code 編號	Main formulation 主要配方					Main features 主要特點	Colour shade 色調	Hardness 硬度 AC/AH
		Zn%	Sn%	Ni%	Deox	G.R.			
BRASS 黃銅	BR10	4	0	0	Very high	Med	Low fuming from zinc evaporation. High as-cast hardness The highest deoxidization level in its range 因鋅蒸發引起的煙釋放低; 高鑄造硬度; 系列中最高的脫氧水平	Pink yellow 偏粉紅色的黃金色	125/125 HV
	OTTGR	13	0	0	Very high	Med	High as cast hardness. Low processing temperatures Excellent on stone-in-place casting 高鑄造硬度; 低處理溫度; 在蠟鑲表現非常優秀	Light yellow 淺黃金色	130/155 HV
	X-BRASS01	22	0	0	Very high	High	The highest as cast hardness among our brass alloys Excellent surface quality even on large surface areas 我們的黃銅合金中鑄造硬度最高; 即使在較大的面積下, 也有良好的表面質量	Rich yellow 黃金色	160/160 HV
	OTT67/33M	33	0	0	Med	Low	Good surface quality and fluidity in open casting systems 在火槍倒模中有良好的表面質量和流動性	Light yellow 淺黃金色	80/155 HV
	OTT77/23M	23	0	0	Med	Low	Good surface quality and fluidity in open casting systems 在火槍倒模中有良好的表面質量和流動性	Light yellow 淺黃金色	70/70 HV
	OTTCTM	23	0	0	High	Low	Med-high as cast hardness Excellent on stone-in-place casting in closed systems 中等鑄造硬度; 在密閉機器倒模的蠟鑲表現非常優秀	Rich yellow 黃金色	90/90 HV
	OTT501	9	7	0	Low	Low	High fluidity. Suitable for stone-in-place casting 高流動性; 適用於蠟鑲	Rich yellow 黃金色	100/100 HV
BRONZES 青銅	BR10S	0	10	0	Low	Low	High fluidity. Excellent on stone-in-place casting 高流動性; 在蠟鑲表現非常優秀	Pink 粉紅色	110/110 HV
	BR12	0	12	0	Min	Low	High shininess. Zero loss from evaporation Minimum residue in the crucible after casting 高光亮度; 零蒸發損失; 鑄造後坩堝中殘留物較少	Pink yellow 粉紅色的黃金色	100/100 HV
	BR3	0	3	0	Min	Min	Traditional red bronze. Zero fuming and loss from evaporation 傳統紅色青銅; 零煙釋放和蒸發損失	Red 紅色	80/80 HV
	BR6S	0	6	0	Med	Med	High fluidity. Minimum residue in the crucible after casting. Excellent surface quality 高流動性; 鑄造後坩堝中殘留物最少; 優異的表面質量	Red 紅色	100/100HV
ALPACAS 白銅	ALPCAST	36	0	9	Min	Low	Low processing temperatures. High flowability High quality/price ratio 低處理溫度; 高流動性; 高性價比	Off-white YI 26	115/115 HV
	ALPCAST3	15	6	9	Min	High	High surface quality. Grain refined composition. Age-hardenable 高表面質量; 由細緻晶粒組成; 可時效硬化	Off-white YI 29,8	125/150 HV
	OTTWE	0	0	0	High	Low	Nickel-free, cost-effective. Suitable for casting in closed systems. Contains Mn 16% 無鎳; 高性價比; 適用於密閉機器倒模; 含16%錳	Yellow green Giallo verde	110/110 HV

FOCUS ON

BR10

- Brass with low fuming from zinc evaporation
Good as cast hardness
- The highest deoxidization level in its range

- 鋅蒸發引起的煙釋放低的黃銅; 高鑄造硬度
- 系列中最高的脫氧水平

OTTGR

- Brass with high as cast hardness
- Low processing temperatures
- Excellent on stone-in-place casting

- 高鑄造硬度的黃銅
- 低處理溫度
- 在蠟鑲表現非常優秀

BR10S

- High fluidity bronze
- Excellent on stone-in-place casting

- 高流動性的青銅
- 在蠟鑲表現非常優秀



JOINING line

ALLOYS FOR BRAZING AND SOLDERING
用於硬焊和軟焊的合金

JOINING line, seamless union

A full range of products able to fit everyone's needs when joining jewelry parts:

- **Ready-to-use products:** conceived by Legor Group's Brazing Division, they are a range of semifinished items at title that can be directly used for soldering. Available for gold, platinum and silver jewellery soldering. Items available as sheet, wire, powder;

- **Master alloys in drops:** similarly to master alloys for productions, these solders are available for all titles and colour and just need to be mixed with the metal of reference for the production of a soldering material. Available for gold and silver;

- **Powders for chain making:** a line of zinc based powders for soldering chainware, with specific additives introduced to increase joint mechanical resistance, wettability and protection in the furnace. Available for gold, silver and non-precious metals.

JOINING line, 無縫連接

一系列產品可以滿足所有對於接合珠寶零件的需求：

- **即用型產品：**由Legor Group的焊接部門設計，它們是一系列可以直接用於焊接的半成品。適用於金，鉑和銀首飾焊接。產品有片狀，線狀和粉末；

- **粒狀補口：**與用於生產的補口類似，這些焊料可用於所有成色和顏色，並且僅需要與用於生產焊接材料的參考金屬混合。可用於金和銀；

- **用於鏈條製造的粉末：**用於焊接鏈條的一系列鋅基粉末，其中引入了特定的添加劑，以增加在熔爐中的接合點的機械阻力，潤濕性和保護性。適用於金，銀和非貴金屬。

READY-TO-USE BRAZING ALLOYS
即用型硬焊合金

	Code 編號	Title 成色 ‰	Shape and packaging 形狀和包裝	Main features 主要特點	Working temperatures 操作溫度 (°C)
YELL. GOLD 黃金	BAUY31	417	Sheet* - 片狀* 0.2 mm x 5 mm In weight 以重量計算	Medium solder/中焊	735°C
	BAUY42	585		Medium solder/中焊	730°C
	BAUY43	750		Medium solder/中焊	750°C
	BAUY53	750		Medium solder/中焊	750°C
WH. GOLD 白金	BAUW41	585	Sheet* - 片狀* 0.2 mm x 5 mm In weight 以重量計算	Medium solder/中焊, 鎳 3%	770°C
	BAUW51	750		Medium solder/S中焊, 鎳 2,5%	780°C
	BAUW53	750		Medium/hard solder, Ni 2% 中/高焊料, 鎳 2%	800°C
WHITE NI-FREE GOLD 無鎳白金	BAUW31	417	Sheet* - 片狀* 0.2 mm x 5 mm In weight 以重量計算	Silver based, medium solder 銀基, 中焊	800°C
	BAUW52	750	Wire - <i>Filo</i> 0,5 mm In weight 以重量計算	Palladium based, medium-hard solder 鈀基, 中-高焊	945°C
	BAUW54	750	Wire - <i>Filo</i> 0,5 mm In weight 以重量計算	Palladium based, medium solder 鈀基, 中焊	900°C
RED GOLD 紅金	BAUR31	417	Sheet* - 片狀* 0.2 mm x 5 mm In weight 以重量計算	Medium solder/中焊	805°C
	BAUR41	585		Medium solder/中焊	800°C
	BAUR51	750		Medium-soft solder 中-低焊	810°C
	BAUR52	750		Medium/hard solder 中/高焊	840°C
PLAT. BASED BRAZING ALLOYS 鉑基焊接合金	BPT200	200	Sheet** - 片狀** 0.2 mm x 5 mm In weight 以重量計算	Medium solder/中焊	805°C
	BPT500	500	Sheet** - 片狀** 0.2 mm x 5 mm In weight 以重量計算	Medium solder/中焊	800°C
	BPT585	585	Sheet** - 片狀** 0.4 mm x 5 mm In weight 以重量計算	Medium-soft solder 中-低焊	810°C
	BPT950	950	Wire - 線狀 0.3 mm In weight 以重量計算	Medium/hard solder 中/高焊	840°C
SILVER 925 銀925	BAG155	550	Rod - 棒狀 Paste - 膏狀	Soft solder/低焊	655°C
	BAG156	560		Soft solder/低焊	650°C
	BAG260	600	Rod - 棒狀 Wire - 線狀 Paste - 膏狀	Medium solder/中焊	730°C
	BAG274	740		Medium-hard solder 中-高焊	770°C
FASHION 時尚	BAG220	200	Rod - 棒狀 Paste - 膏狀	Hard solder/高焊	810°C
	BAG125	250		Medium solder/中焊	760°C
	BAG134	340		Medium-soft solder 中-低焊	730°C
	BAG140	400		Soft solder/低焊	710°C

30 * Wire format available for a minimum quantity of 50 g / 最少50克才提供線狀焊料
** Wire format available for quantities to be agreed / 在特定數量提供線狀焊料

MASTER ALLOYS AND POWDERS FOR BRAZING
用於硬焊的補口和粉末

	Code 編號	Main formulation 主要配方				Suitable for 適用於					Main features 主要特點	Working temperatures 操作溫度 (°C)
		Ag%	Zn%	Ni%	In%	375	585	750	875/917	925/960		
WH. GOLD 白金	LSB442	76	5	0	4	√					Medium solder, Ni,Pd-free/ 中焊, 無鎳, 無鈀	770°C
	LSB455	24	23	10	8		√				Medium solder/中焊	770°C
	LSB475A	12	28	12	10			√			Medium solder/中焊	770°C
YELLOW GOLD 黃金	LSG401	0	46	0	54				√		Soft solder, only sheet production 低焊, 只適用於壓片	875‰: 665°C 917‰: 795°C
	LSG404	28	20	0	25				√		Medium solder, wire and sheet 中焊, 線狀, 片狀	875‰: 845°C 917‰: 920°C
	LSG406A	26	25	0	19			√			Soft solder/低焊	745°C
	LSG406B	25	28	0	17			√			Soft solder/低焊	740°C
	LSG409	32	25	0	12		√	√			Medium solder 中焊	585‰: 735°C 750‰: 765°C
	LSG409V	38	31	0	9			√			Medium solder, "aggraffato" 中焊, "焊縫"	760°C
	LSG412	34	25	0	10		√	√			Hard solder/高焊	585‰: 735°C 750‰: 780°C
	LSG417F	57	17	0	0	√					Medium solder/中焊	375‰: 705°C
	LSG419	50	16	0	6	√	√				Soft solder/低焊	375‰: 670°C 585‰: 755°C
	LSG1214FM	48	15	0	10		√				Medium solder/中焊	585‰: 740°C
	LSG89FM	50	15	0	8	√					Medium solder, "aggraffato" 中焊, "焊縫"	685°C
RED GOLD 紅金	LSR489	10	0	0	20	√	√	√			Soft solder 低焊	375‰: 850°C 585‰: 830°C 750‰: 835°C
	LSR490	5	2	0	20		√	√			Medium solder 中焊	585‰: 810°C 750‰: 815°C
	LSR500	7	0	0	12		√				Medium-hard, intense colour 中-高焊; 較深的顏色	585‰: 860°C
SILVER 925 銀925	LSA425	0	30	0	20					√	60% to 80% Ag, high workability 加入 60% 至80%銀, 高可加工性	Ag 60%: 685°C Ag 70%: 715°C Ag 80%: 780°C
	LSA440	0	45	0	0					√	Add 60% to 75% Ag, only sheet 加入 60% 至 75% 銀, 只適用 於壓片	Ag 65%: 685°C Ag 75%: 750°C

SOLDERING POWDERS FOR CHAIN MAKING
用於生產鏈條的焊接粉末

Code 編號	Main formulation 主要配方				Suitable for 適用於					Main features 主要特點	Working temperatures 操作溫度 (°C)
	Ag%	Zn%	Ni%	In%	375	585	750	875/917	925/960		
L1	鋅基, 中等脫氧劑含量				✓	✓	✓	✓	✓	高性價比	830 - 890°C
L1A	鋅基, 含銀, 中等脫氧劑含量				✓	✓	✓	✓	✓	一般使用, 配方含銀	830 - 890°C
L1AVF	鋅基, 含銀, 中等脫氧劑含量, 幼細顆粒				✓	✓	✓	✓	✓	幼鏈條製造(低於0.3mm)	830 - 890°C
L1H	鋅基, 高銀含量, 中等脫氧劑含量				✓	✓	✓	✓	✓	空心鏈條製造; 低成色時的最佳收益	830 - 890°C
GS1	鋅基, 高脫氧劑含量								✓	含銀, 一般使用	830 - 890°C
BS1	鋅基, 高脫氧劑含量									黃銅和青銅, 一般使用	830 - 890°C



PRIME line, dependable basics

Our raw materials and non-precious semi-finished items are helpful in many different ways, starting from the simplest production up to complex hollow chain and cladding processes, to name but a few.

PRIME line, 可靠的基礎

我們的原材料和非貴重半成品在很多方面也有用處，從最簡單的生產到復雜的空心鏈條和包覆工序，僅舉幾例。

SEMI-FINISHED PRODUCTS AND RAW MATERIALS

半成品和原材料

	Code 編號	Description 描述	Physical specification 物理規格	Standard packaging 標準包裝
NON-PRECIOUS RAW MATERIALS 非貴金屬原料	CUCUBOF	Electrolytic oxygen-free copper in sticks, purity 99.99% 棒狀電解無氧銅，純度99.99%	Cut wire, Ø 8 mm, length = 1.5 - 2.5 cm 線狀,Ø 8 mm, 長度= 1.5 – 2.5 cm	20 kg bags 20kg 袋裝
	CUG	Electrolytic copper in drops, purity 99.95% 電解銅粒，純度99.95%	Drops, average diameter 2 - 10 mm 粒狀，平均直徑2 – 10 mm	10 kg bags 10kg 袋裝
	CUSTOF	Electrolytic oxygen-free copper in sticks, purity 99.99% 棒狀電解無氧銅，純度99.99%	Cut wire Ø 2,5 mm, length = 2 - 3 cm 線狀,Ø 2,5 mm, 長度= 2 – 3 cm	20 kg bags 20kg 袋裝
	COBALTO	Cobalt in flakes, minimum purity 99.8% 薄片狀的鈷，純度99.8%	Flakes 片狀	In weight 以重量計算
	GALLIO	Gallium metal, purity 99.99% 鎔金屬，純度99.99%	Ingots of different sizes, below 1 kg 不同尺寸的錠，低於1 kg	In weight 以重量計算
	INDIO	Indium metal, purity 99.99% 銦金屬，純度99.99%	Ingots of different sizes from 0.5 to 1 Kg 不同尺寸的錠，從0.5到1 kg	In weight 以重量計算
	NI	Electrolytic nickel, purity 99.9% 電解鎳，純度99.9%	Cubes of 25x25x10 mm size 立方體尺寸為25x25x10mm	In weight 以重量計算
	STAGNO	Tin metal in rods 錫金屬棒	Rods of 100 g weight 棒狀，重100g	In weight 以重量計算
	ZN	Electrolytic zinc, purity 99.995% 電解鋅，純度99.995%	15x15x10 mm cubes 立方體尺寸為15x15x10mm	20 kg bags 20kg 袋裝
	ZNG	Zinc in drops, purity 99.99% 鋅粒，純度99.99%	Drops, average diameter 2 - 10 mm 粒狀，平均直徑2 – 10 mm	20 kg bags 20kg 袋裝
PRE-ALLOYS 預合金	CU-COS	Copper-cobalt 5% in drops 銅–鈷5%粒	Drops, average diameter 2 - 10 mm 粒狀，平均直徑2 – 10 mm	10 kg bags 10kg 袋裝
	CU-IR	Copper-iridium 2% in drops 銅–銥2%粒	Drops, average diameter 2 - 10 mm 粒狀，平均直徑2 – 10 mm	2 kg bags 2kg 袋裝
	CU-P 85/15	Copper-phosphorus 15% in drops 銅–磷15%粒	Drops, average diameter 2 - 10 mm 粒狀，平均直徑2 – 10 mm	10 kg bags 10kg 袋裝
	OTT80/20	Mechanical working brass 用於機械加工的黃銅	Drops, average diameter 2 - 10 mm 粒狀，平均直徑2 – 10 mm	10 kg bags 10kg 袋裝
	OTT85/15	Mechanical working brass 用於機械加工的黃銅	Drops, average diameter 2 - 10 mm 粒狀，平均直徑2 – 10 mm	10 kg bags 10kg 袋裝
	OTT90/10	Mechanical working brass 用於機械加工的黃銅	Drops, average diameter 2 - 10 mm 粒狀，平均直徑2 – 10 mm	10 kg bags 10kg 袋裝
POWDERS 粉末	OTTN	Mechanical working brass 用於機械加工的黃銅	Drops, average diameter 2 - 10 mm 粒狀，平均直徑2 – 10 mm	10 kg bags 10kg 袋裝
	CUP	Copper powder, purity 99.95% 銅粉，純度99.95%	Powder 粉狀	10 kg packaging (2 plastic bags in a metal bucket) 10kg 裝 (2個塑料袋放在金屬桶中))
	OTTP70-30	Brass 70/30 in powder 黃銅70/30粉	Powder 粉狀	25 kg
	ZNPF	Zinc in powder 電解鋅，純度99.995%	Powder 粉狀	25 kg
	ZNP-VF1	Zinc in powder 鋅粒，純度99.99%	Powder 粉狀	25 kg

SEMI-FINISHED PRODUCTS AND RAW MATERIALS

半成品和原料

	Code 編號	Description 描述	Diameter 直徑 (mm)	Thickness 厚度 (mm)	Length 長度 (mm)	Width 寬度 (mm)	Wall thickness 壁厚 (mm)	Standard packaging 標準包裝
IRON 鐵	FE3	Electrolytic iron wire 電解鐵, 線狀	3	-	-	-	-	250 kg spool 250kg卷
	FE3.5		3,5	-	-	-	-	
	FE4.45		4,45	-	-	-	-	
	FE5		5	-	-	-	-	
	FE6		6	-	-	-	-	
	FE8		8	-	-	-	-	
	FE10L	Electrolytic iron in sheet 電解鐵, 片狀	-	10	100	330	-	In weight 以重量計算
	FE10L110		-	10	110	-	-	
	FE12L105		-	12	100	330	-	
COPPER WIRE/SHEET 銅線/片	CU0.1X500	Copper strip 銅帶狀	-	0,1	500	-	-	20 kg roll 20kg卷
	CU1,5	Copper wire 銅線	1,5	-	-	-	-	50 kg spool 50kg卷
	CU2		2	-	-	-	-	
	CU2,5		2,5	-	-	-	-	
	CU3		3	-	-	-	-	
	CU4		4	-	-	-	-	
	CU5		5	-	-	-	-	
	CU6		6	-	-	-	-	
	CU7		7	-	-	-	-	
	CU8		8	-	-	-	-	
	CU10		10	-	-	-	-	
	CU12		12	-	-	-	-	
COPPER TUBE 銅管	CUT4	Copper annealed tube 銅退火管	4	-	-	-	1	10 kg spool 10kg卷
	CUT6		6	-	-	-	1	
	CUT6X0,5		6	-	-	-	0,5	
	CUT8		8	-	-	-	1	
	CUT8X1.5		8	-	-	-	1,5	
	CUT10		10	-	-	-	1	
	CUT10X0.5		10	-	-	-	0,5	
	CUT10X1.5		10	-	-	-	1,5	
	CUT10X2		10	-	-	-	2	
	CUT12		12	-	-	-	1	
	CUT12X1.5		12	-	-	-	1,5	20 kg spool 20kg卷
	CUT12X2		12	-	-	-	2	80 kg spool 80kg卷
	CUT12X2CR	Copper cold-worked tube in bars 銅冷加工管, 塊狀	12	-	-	-	2	2,5 m bar 2,5m 塊狀
	CUT12X3		12	-	-	-	3	

	Code 編號	Description 描述	Diameter 直徑 (mm)	Thickness 厚度 (mm)	Length 長度 (mm)	Width 寬度 (mm)	Wall thickness 壁厚 (mm)	Standard packaging 標準包裝
BRONZE 青銅	BR6F0,5	Bronze annealed wire 青銅退火線材	0,5	-	-	-	-	15 kg reels DIN 200 mm 15kg捲軸DIN 200mm
	BR6F1,0		1	-	-	-	-	25 kg hanks with an internal diameter of 400 mm 25kg捲軸, 直徑400mm
	BR6F1,2		1,2	-	-	-	-	25 kg hanks with an internal diameter of 400 mm 25kg捲軸, 直徑400mm
	BR6F2,0		2	-	-	-	-	25 kg hanks with an internal diameter of 400 mm 25kg捲軸, 直徑400mm
BRASS 黃銅	OTT80-12B	Brass annealed tube in bar 黃銅退火管, 棒狀	12	-	2500	-	2	2,5 m bar 2.5米棒
	OTT80/20B		16	-	2500	-	1	
	OTT80/20B1		16	-	2500	-	2	
TOMBAC 頓巴黃銅	TOMBAC3T	Tombac annealed wire 頓巴黃銅退火線材	3	-	-	-	-	50 kg spool 50kg卷
	TOMBAC5T		5	-	-	-	-	50 kg spool 50kg卷
	TOMBAC6T		6	-	-	-	-	50 kg spool 50kg卷
	TOMBAC8T		8	-	-	-	-	50 kg spool 50kg卷
	TOMBAC10T		10	-	-	-	-	50 kg spool 50kg卷
	TOMBACP	Tombac cold-worked plate 頓巴黃銅冷加工片材	-	10	2000	100	-	In weight 以重量計算
	TOMBACP01		-	10	330	100	-	
	TOMBACP02		-	10	400	100	-	
	TOMBACP15		-	15	400	100	-	



Powmet®

METALLIC POWDERS FOR ADDITIVE MANUFACTURING
用於積層製造的金屬粉末

Ultrapure metallic powders with a guaranteed title and extra-fine and homogenous particle size, specifically developed for additive manufacturing processes (3d print) for the goldsmith and fashion sectors.

POWMET line powders are atomized via an exclusive process which allows to obtain perfectly spherical particles with uniform chemical composition and low impurities content. They are sieved to obtain a precise granulometric distribution suitable to maximize the material performance during the production process.

Using POWMET powders for additive manufacturing processes guarantees quality standards comparable to those obtained by using LEGOR GROUP's MASTER ALLOY products for the traditional production technics, such as casting and mechanical work.

- Choosing POWMET for additive manufacturing means:
- more freedom in the product design and customizations
 - time-to-market reduction
 - easier prototyping stage
 - easier process in case of small quantities/batches production



超純金屬粉末具有成色保證和超細，均勻的粒度，供金匠和時尚界使用於積層製造工序（3d打印）。

通過獨特的工序來霧化POWMET line粉末，這能製作具有均勻化學成分和低雜質含量的完美球形顆粒。 粉末經過篩選以獲得精確的粒度分佈，優化生產過程中的材料性能。

以POWMET粉末進行積層製造工序，保證其質量標準相當於使用LEGOR GROUP補口產品作傳統生產工序（如倒模和機械加工）所獲得的質量標準。

- 選擇POWMET粉末用作積層製造意味著：
- 更自由的產品設計和定制
 - 縮短上市時間
 - 更輕鬆的原型設計階段
 - 更容易進行小量/批量生產

Powmet®

	Code 編號	Main formulation 主要配方				Main features 主要特點	Colour shade 色調	Nominal size 公稱尺寸 (µm)
		Au%	Ag%	Pd%	Sn%			
	PM-AU101P	75	12,5	0	0	Age-hardenable. Excellent flowability 可時效硬化; 高流動性	Rich yellow 3N 3N黃金色	-30+10µm
	PM-AU131P	75	0	15,5	0	Gold 750‰ Ni-free, Pd-based formulation 750‰成色金; 無鎳, 鈰基配方	Premium white 特級白色	-30+10µm
	PM-AG101P	0	93	0	0	Maximized laser absorption. Age-hardenable Excellent flowability 加強激光吸收; 可時效硬化 高流動性	Silver 銀色	-40+10µm
	PM-BR101P	0	0	0	10	Excellent flowability. Optimized size distribution 高流動性; 優化的尺寸分佈	Rich yellow 黃金色	-35+10µm
	PM-ST101P			AISI 316L		Excellent flowability. Optimized size distribution 高流動性; 優化的尺寸分佈	Steel 鋼色	-45+10µm



GOOD TO KNOW'S

on metallurgy >>>



When you need a metal with particular characteristics to obtain the jewel you have in mind, come to us.

Since 1979 we have worked in close contact with our Customers to solve concrete problems, optimizing products and making new ones. Supported by a constant R&D activity, today Legor Group products can serve up to the mark the design you have in mind.

當您需要具有特殊特性的金屬來製造您所想到的珠寶時，請向我們查詢。

自 1979 年以來，我們與客戶緊密聯繫，解決具體問題，優化產品和製造新產品。由持續的研發活動支持，至今，Legor Group 的產品可以滿足您所想的設計要求。

Among the most interesting features obtained with Legor Group products there are:

Legor Group 產品的主要優點是：

GOOD TO KNOW'S
on metallurgy >>>



Master Alloy
補口

AN ALLOY PRODUCED IN DROP FORM THAT MUST BE ADDED TO THE FINE METAL (GOLD, SILVER OR OTHER PRECIOUS METALS) FOR THE PRODUCTION OF JEWELRY AT TITLE.

用於生產不同成色的首飾時，必須將從其加入到金屬中（金，銀或其他貴金屬）的一種粒狀合金

Gold and silver, used as pure metals, do not allow to obtain jewels that stand up under wear and tear, or which have a high level of mechanical resistance or easy processing. Master alloys are the answer to specific and increasingly complex productive requirements. The term master alloy is understood as a particular category of non-ferrous alloy (metallic materials made up of several metals), primarily of copper, silver, nickel and zinc. The right master alloy, containing grain refiners and deoxidizers, improves the characteristics of a jewel, such as colour, hardness, mechanical resistance, processability and resistance to oxidation. The variety of these parameters justifies the large number of formulations available in the Legor Group range of products. This translates into an obvious advantage from the operational point of view and to optimisation of the final product.

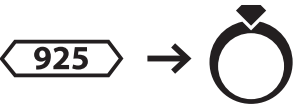
單單使用純金和純銀不可能製作出同時能抵抗穿戴，拉扯，高物理抗性或容易加工的珠寶
補口是對具體和日益複雜的生產要求的解決方案。
“補口”被理解為特殊類別的有色合金（由幾種金屬製成的金屬材料），主要材料是銅，銀，鎳和鋅。
合適的補口含有晶粒細化劑和脫氧劑，能改善珠寶的特性，如顏色，硬度，物理抗性，加工性和抗氧化能力
這些參數的多樣性證明了 Legor Group 產品系列中可用的大量配方。這從操作的角度和最終產品的優化轉化為明顯的優勢。



Ready-to-use Alloy
即用補口

An alloy at title that allows, without further addition of precious metals, the hallmarking of a final product in the legal title requested by the customer.

一種補口產品，容許在沒有進一步添加貴金屬的情況下，最終產品的成份也能達到客戶的要求的品質證明



A kind of master alloy for gold, that contains deoxidizers and grain refiners but that has to be completed with gold and silver in order to proceed to production of jewelry.

一種金專用的補口，含有脫氧劑和晶粒細化劑，但必須加入金和銀，才能進行珠寶生產



Brazing
硬焊

A welding is defined as brazing when it is made using a process temperature that is above 450°C (840°F) and below the items' melting temperature. This is typical when using solders based on gold, silver, platinum or palladium.

當操作溫度高於450°C並低於物件的熔點時，焊接被定義為硬焊。這常見於金，銀，鉑或鈀的焊料。

Soldering
軟鐸

A welding is defined as soldering when it is made using a process temperature that is below 450°C (840°F) and below the items' melting temperature. This is typical of tin or lead-based solders.

當操作溫度低於450°C且低於物件的熔點時，焊接被定義為軟鐸。這常見於錫或鉛的焊料。

Torch
火槍

A flame is used to heat the substrate and then to melt the welding material, offering reasonable control for skilled hand operations in terms of area of the welding spot, using a cost-effective method; for these reasons it is very well known in the jewelry sector. Wires, plates, pastes can be used.

使用火焰加熱基材，然後熔化焊接材料，這可合理地控制焊接區域的面積以提高成本效益; 正因如此，這方法在珠寶行業非常有名。可以使用線，片，膏

Furnace
熔爐

The piece to be soldered is put in a static or belt furnace, in order to bring the welding material to melting point, so that it can wet pre-set parts of the jewel. It can be the best solution when in need of higher productivity and standardization. Soldered plates, pastes, powders can be used.

將待焊接的物件放入靜態或帶式熔爐中，使焊接物料到達熔點，從而可以流入首飾的預定部件。
當需要更高的生產力和標準化時，這是最好的解決方案。可以使用焊接的片，膏，粉末。

Laser
激光

A laser source is used to bring the metal to melting point with excellent precision on the area to be worked on. This technology allows to use the same alloy of the substrate as welding material. Wires or plates of other feeding material can be used too.

使用激光源能使金屬在極精準的加工區域上達至熔點。該技術允許使用與焊接材料相同的基底合金。也可以使用其他物料的線或片。

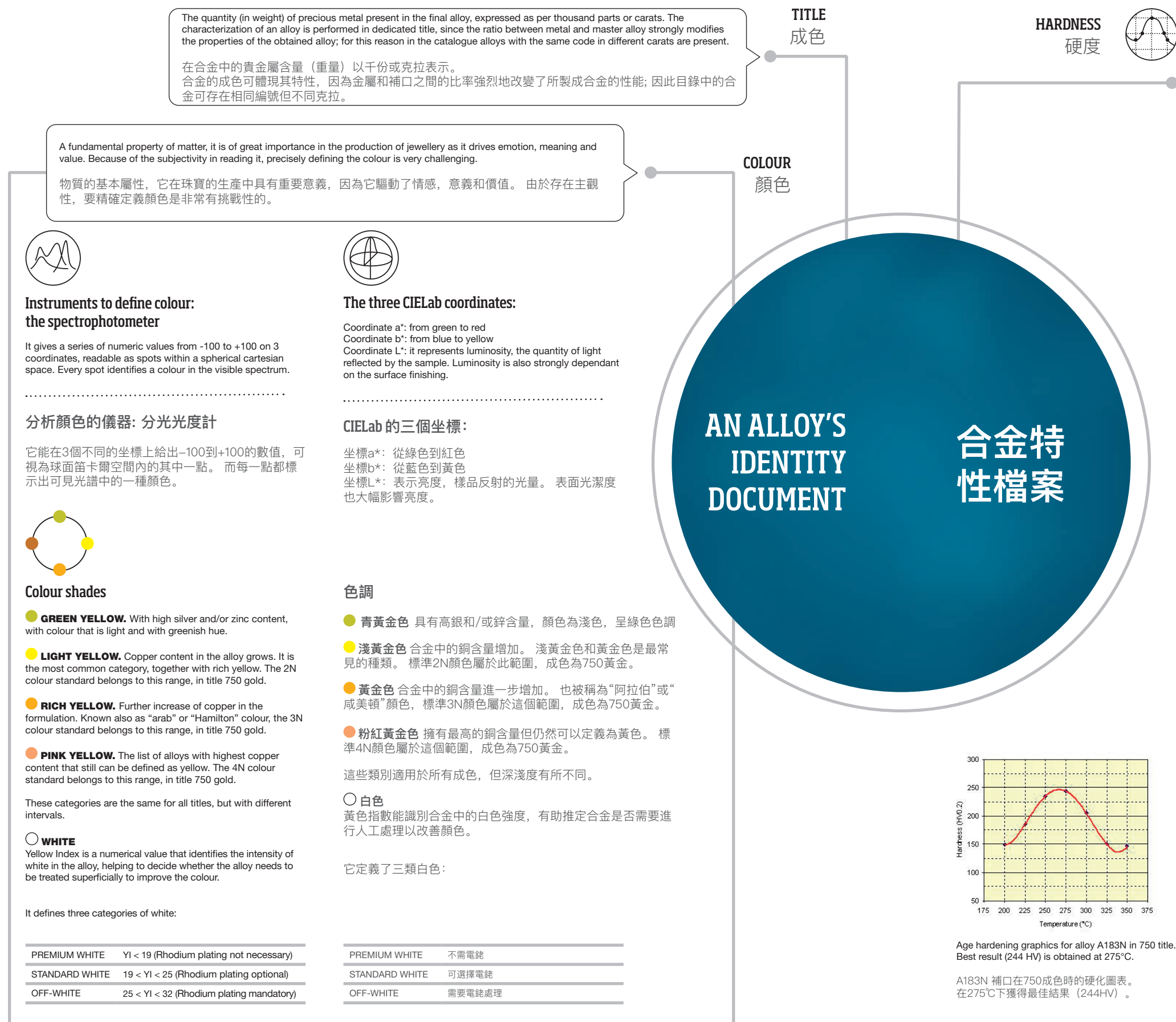
Working temperature
操作溫度

The working temperature indicated in the catalogue is the temperature at which the soldering alloy is able to flow through the seams to be soldered, without overheating the material.

目錄中指出的操作溫度是指焊接合金加熱到該溫度時，能夠流過要焊接的接縫，同時不會使材料過熱。

Physical characteristics

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HARDNESS

A material's resistance to undergo plastic deformation. The values are measured using the Vickers scale. For jewellery alloys values go from 25 HV for pure silver, up to about 300 HV for a white, high nickel based alloy in cold worked state or after age-hardening.

AS CAST HARDNESS (HV AC)

The hardness before any mechanical working, annealing treatments or aging. It's a fundamental data for the production process of casting: it will be more difficult to change the hardness of the alloy in the following processing steps.

HARDNESS AFTER AGE HARDENING (HV AH)

For some categories of alloys that need high strength such as spring effect alloys, or particularly soft as those based on silver, it is possible to perform a particular heat treatment to increase considerably the hardness, without need of cold working the metal.

To be defined as age-hardenable, an alloy must increase its hardness to at least 50% more compared to the as cast state.

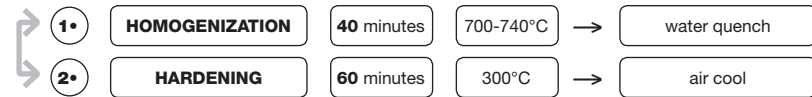
Gold alloys: the age hardening step consists of maintaining the (annealed) piece for 90 minutes at a temperature between 250°C and 350°C (with best temperature indicated on technical sheets), followed by an air cooling.



Silver alloys: silver achieves maximum hardness when it is age-hardened in two steps:

Step 1: homogenization under inert atmosphere at a temperature close to solidus (700-740°C) for 40 minutes, followed by immediate water quench

Step 2: age hardening at 300°C for 60 minutes, followed by air cooling.



If homogenization is not possible:
go for single-step hardening, at 300°C for 90 minutes. Final hardness increase will be approx. 60% of the maximum achievable.

硬度

物料對塑性變形的抗性。使用維氏標度來測量。對於珠寶首飾合金，硬度可從純銀的25HV到冷加工狀態或經過加硬後的白色，高鎳合金的300HV左右。

鑄造硬度 (HV AC)

任何機械加工，退火處理或硬化之前的硬度。這是鑄造生產過程的基礎數據：在以下加工步驟中更難改變合金的硬度。

加硬後硬度 (HV AH)

對於某些需要高強度的合金種類，例如彈簧合金或者比銀成分較高的柔軟合金，可以進行特定的熱處理以顯著增加硬度，而不需要對金屬進行冷加工。

要被定義為可加硬，與鑄造狀態相比，合金必須將其硬度提高至少50%。

金合金：時效硬化步驟包括（退火）的零件在250°C至350°C之間的溫度下（在技術頁面上顯示最佳溫度）維持90分鐘，隨後進行空氣冷卻。



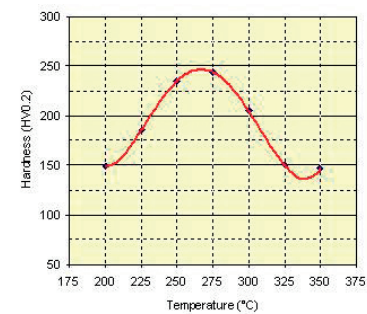
銀合金：當完成以下兩個階段的加硬時，銀可達到最高硬度：

步驟1: 在惰性氣體環境下，以接近固化的溫度下（700–740℃）勻化40分鐘，隨後立即進行驟冷。

步驟2：在300°C下時效硬化60分鐘，隨後進行空氣冷卻。



如果不能進行均質化：
可進行單步硬化，在300℃下進行90分鐘。最終硬度將約為最大硬度的60%。



Age hardening graphics for alloy A183N in 750 title.
Best result (244 HV) is obtained at 275°C.

A183N 補口在750成色時的硬化圖表。
在275°C下獲得最佳結果 (244HV)。

Physical characteristics
物理特性

A pure metal has a single melting temperature, so at a certain temperature it passes directly from solid phase to liquid phase. Alloys instead have a melting range, within which the metal gradually, during heating, melts until it is fully liquid.

- **SOLIDUS TEMPERATURE (SOLIDUS)**, the temperature at which the alloy starts the melting process. It is an important value, for example, during welding, or in processes like cladding.
- **LIQUIDUS TEMPERATURE (LIQUIDUS)**, the temperature at which the alloy is completely molten; on the basis of liquidus, the temperatures for casting and for granulation are defined.

純金屬具有單一熔解溫度，因此在一定溫度下，它直接從固相流向液相。反而合金會有熔化範圍，金屬會在加熱期間逐漸熔化，直至其完全液體化。

固化溫度（固相線），合金開始熔化的溫度。這是一個重要的數值，例如在焊接過程中，或在像包覆的過程中。

液化溫度（液相線），合金完全熔化的溫度; 在液相線的基礎上，定義了鑄造和倒粒的溫度

Mechanical characteristics
機械特性

TENSILE STRENGTH (Rm)
The point at which the sample breaks during the tension test (values in MPa - Mega Pascal)

YIELD STRENGTH (Rp0,2)
The point at which the sample begins to undergo a permanent plastic deformation (values in MPa - Mega Pascal)

ELONGATION AT RUPTURE (E%)
This value expresses the percentage ratio between the length of the piece just before it breaks and its initial length

抗拉強度（rm）
樣品在拉伸試驗期間斷裂的點（MPa）

屈服強度（Rp0,2）
樣品開始經歷永久塑性變形的點（MPa）

斷裂伸長率（E%）
該數值表示在其斷裂之前的長度與其初始長度之間的百分比。

General characteristics
一般特性

AS CAST GRAIN SIZE
鑄造晶粒大小

A statistical measure, expressed in microns, on crystalline grains of internal standard samples in the as cast state. For jewellery alloys, the measure varies from about 1000 microns of pure silver and gold, down to 10 - 20 microns for some gold alloys for mechanical processing with high grain refiner content.

- The positive effects of a small crystal grain:
- superior mechanical performance,
 - improved shininess and surface brightness,
 - high chemical resistance

Grain refinement level

The level of grain refinement in an alloy is proportional to the presence in the alloy of particular chemical elements that improve the microstructure during the solidification and annealing stages. It must necessarily be high in the case of complex plastic deformation processes, but it is preferable also when a compact and shiny surface is requested.

Deoxidation level

The presence of deoxidizing elements is particularly important in the case of the casting, where a clean surface after the casting is an advantage from the production process viewpoint. Depending on the type of casting system different levels of deoxidizers are necessary.

一種統計測量，以微米表示，在鑄態中的內標樣品的晶粒。對於首飾合金，數值差距可以很大。大至純銀和純金的1000微米；而某些用於機械加工，具有高晶粒細化劑的金合金，晶粒能小至10–20微米。

細小晶粒的好處：
優越的機械性能，
改善光澤度和表面亮度，
高化學品抗性

晶粒細化水平

在固化和退火階段期間，特定化學元素能改善合金中的微結構。其存在與合金中的晶粒細化水平是成正比的。當進行復雜的塑性變形過程或要求緊湊而有光澤的表面時，其含量是必須要提高。

脫氧水平
在鑄造期間，脫氧元素的存在是特別重要的，因為鑄造後的清潔表面是從生產過程角度來看的優點。根據鑄造系統的類型，需要不同劑量的脫氧劑。

ALLOYS FOR CASTING 倒模用補口

Compositions characterized by an improved performance on:

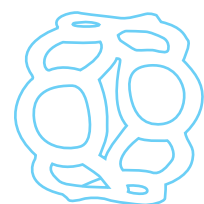
- metal flowability in liquid phase,
- increase of filling on complex shapes,
- optimization of scraps reusage without problems,
- minimization of solidification shrinkage.

Legor Group alloys for casting allow you to get the most from each type of casting system (traditional, in closed systems, with or without stones). Once correctly chosen the code depending on the type of machine and product to be obtained, simply follow the values given in the data sheets for best results.

合金成份能改進性能：
液相中的金屬流動性，
增加對複雜形狀的填充性，
優化廢料重用問題，
減低凝固收縮問題。

Legor Group 倒模用補口可讓您從每種類型的鑄造系統中（傳統的火槍倒模，密閉機器倒模，有或沒有蠟鑲）獲得最大的收益。只要根據機器和產品的類型來選擇正確的產品編號，然後按照數據表中的數值來使用，便能獲得最佳結果。

Traditional casting systems 傳統火槍倒模



Insufficient bath protection against metal oxidation and lacking control of temperature in the pouring phase

Alloys characterized by:

- effective level of deoxidation
- good flow to ensure filling
- good control of the solidification structure even in the case of excessive overheating

防止金屬氧化的保護不足，並且在澆注階段缺乏對溫度的控制。

補口特點：

有效脫氧水平
良好流動性以保證充分填充
即使在過熱的情況下也能控制固化結構

Casting in closed systems 密閉機器倒模



Excellent control of temperature and of atmosphere in the melting chamber

Alloys characterized by:

high level of surface compactness and lower need for deoxidizers, with immediate effects on mechanical strength and on a higher shininess of the finished piece

對熔池中的溫度和氣壓極好的控制

補口特點：

高水平的表面緊密性和較低的脫氧劑需求，
對物理強度有即時效果和成品有更高的光澤度

Stone-in-place casting 蠟鑲



Simplicity and speed of the setting of stones in a soft and elastic material like wax, enabling to increase design complexity

Alloys characterized by:

Low or very low melting temperatures, exceptional fluidity, excellent degree of deoxidation to maintain the shininess and colour of the stones

寶石設置在柔軟彈性的材料（如蠟）能簡化和加速程序，容許提高設計的複雜性。

補口特點：

低或非常低的熔化溫度，卓越的流動性，優異的脫氧度以保持寶石的光澤和顏色。

PRODUCTION PROCESSES

生產過程

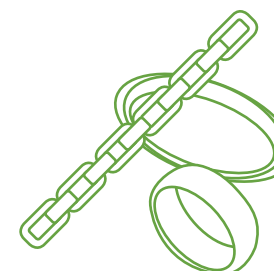
ALL-PURPOSE ALLOYS 多用途補口



The so-called all-purpose alloys are a good solution for those who have the need to use an alloy in both types of process, or do not want to multiply the number of alloys useful in a single colour and carat. Considering that these are alloys with low levels of deoxidizers, it is preferable to use all-purpose alloys in case productions are for the most part of mechanical processing and only in part of casting.

所謂的多用途補口對於那些需要在兩種工序中使用補口，或者不希望將單一顏色和克拉的合金數量加倍都是一個很好的解決方案。考慮到這些是具有低劑量脫氧劑的合金，建議使用於大部分機械加工和小部分倒模的程序。

ALLOYS FOR MECHANICAL WORKING 機械加工用補口



The variety of types of processes dedicated to the production of jewellery is made possible by the great intrinsic ductility and malleability of gold and silver alloys. It is up to the Research to provide solutions that push this characteristic to the limit, **increasing the maximum levels of deformation and toughness, together with shininess, corrosion resistance, weldability.**

Production of sheet: requires alloys that ensure high lustre and compact surface, combined with an excellent colour. The range goes from very soft alloys for the production of stamped items, to others with a certain stiffness for blanking. For the production of extremely thin sheets, age-hardenable alloys are recommended to improve processing and final quality of the piece.

Production of wire: the basis for the production of chainware. In addition to great flexibility and softness, excellent solderability is a key element. Other uses of this semi-finished product must ensure toughness and ductility, especially for productions in very thin diameters and minimum grain size to prevent the phenomenon of orange peel.

Hollow jewellery: production of tube by means of TIG welding, or for the production of hollow chainware, or production of tubes from continuous casting. The characteristic feature of these alloys is **a great resistance to thermal and chemical treatments.**

金和銀合金擁有極大的內在延展性和可延展性，令各種專用於生產珠寶的程序均可行。研究提供的解決方案是將該特性推向極限，增加變形和韌性的最大水平，以及光澤度，耐腐蝕性，可焊性。

壓片：需要能確保高光澤，緊湊表面，和優良顏色的合金。選材範圍從用於生產沖壓的柔軟合金，到用於沖裁具有一定硬度的其他材料。為了生產極薄的片材，建議使用能硬化的合金來改善加工程序和最終的質量。

拉線：鏈條生產的基礎。除了極大的柔韌性和柔軟性之外，優異的可焊性是關鍵要素。在其他用途上使用這種半成品，必須確保韌性和延展性，特別針對非常幼的直徑和最小粒度的生產，以防止橙皮現象。

中空首飾：通過TIG焊接來生產幼管，或用於生產空心鏈條，或以連鑄來生產幼管。這些合金的特徵是對熱和化學處理有很大的抵抗力。

...more on Legor Group



The role of research in maintaining leadership

在科研上保持領導地位

Legor Group considers it fundamental to invest in R&D and in the personnel dedicated to it. Legor Group has an in-house R&D laboratory equipped with the latest technologies and sophisticated analytical instruments. Here, the team of technicians and engineers study, design and test formulations on a daily basis in order to anticipate and meet customers' needs and transform creative ideas into innovative targeted products.

The purpose of Research in Legor Group is the use of innovation as a strategic business advantage. This has enabled Legor Group to achieve its undisputed market recognition and leadership in the industry. The result obtained are reflected in the numerous patents registered, the many international recognitions achieved and the global collaboration network between industry experts, universities and research centres.

The commitment of Legor Group towards knowledge transfer is demonstrated by the fact that since 2004 it is the organizer of Jewelry Technology Forum, the only congress at European level dedicated to sharing technologic culture among the sector experts.



For more info, go to www.jtf.it

Legor Group 認為投資研發和人才至關重要。Legor Group 擁有內置研發實驗室，配備最新技術和先進的分析儀器。在這裡，技術人員和工程師團隊每天研究，設計和測試配方，以預測和滿足客戶的需求，並將創意思法轉化為創新的目標產品。

Legor Group 研究的目的是利用創新作為商務戰略的優勢。這使 Legor Group 能夠在行業中獲得無可爭議的市場認可和領導地位。獲得的結果反映在許多專利註冊和國際認可，以及業界專家，大學和研究中心之間的全球合作網絡。

Legor Group 對知識轉移的承諾能體現於：自2004年以來，它是珠寶技術論壇的組織者，這是歐洲唯一一個致力於在行業專家中分享技術文化的大會。

欲了解更多信息，請訪問www.jtf.it



Laboratory analyses

實驗室分析

Legor Group offers a qualified service of subcontract analyses and technical consultancy, using the internal Research and Development laboratory, highly sophisticated and equipped with advanced instruments for any kind of metallurgical analysis (from quality control to development of new products and process solutions).

Laboratory equipment and offered services:

- SEM/EDX, scanning electronic microscope with microanalysis probe
- ICP, Mass spectrometer for quantitative compositional analyses
- TG/DTA for thermal and gravimetric analyses
- Vickers hardness meter
- Tensile test bench
- Metallographic optical microscopes
- Spectrophotometer for colorimetric analyses
- Elementary analyses machines (O, N, S, C)
- Nickel release test according to EU Standard EN1811
- Tarnishing test on silver and low carat alloys
- Chlorination test for corrosion resistance
- Density measurement on an alloy
- Age hardening test

Legor Group 提供受到認可的分析和技術諮詢服務，使用內部的研發實驗室，高度精密，並配備先進的儀器進行任何類型的冶金分析（從質量控制到開發新產品和工序解決方案）。

實驗室設備提供服務：

- SEM / EDX, 掃描電子顯微鏡配備微量分析探針
- ICP, 質譜儀用作定量組成分析
- TG / DTA 用於熱和重量分析
- 維氏硬度計
- 拉力試驗台
- 金相光學顯微鏡
- 分光光度計進行比色分析
- 基本元素分析機 (O, N, S, C)
- 根據歐盟標準EN1811進行鎳釋放測試
- 銀和低成色合金的氧化測試
- 以氯化測試耐腐蝕性
- 合金的密度測量
- 硬化測試

UNI ISO 4524/2

Microscopic analysis of surfaces
表面微觀分析
Exposure to nitric acid
暴露於硝酸

EN ISO 4524/5

Plated layers adhesion test
鍍層粘附試驗

EN ISO 4611

Resistance to damp heat
耐潮熱

ISO 9227

Resistance to salt spray
耐鹽霧

ISO 4538

Thioacetamide test
硫乙酰胺試驗

ISO 105 E04 and NFS 80-772

Synthetic sweat resistance test
人工耐汗試驗

UNI EN 12568

Brine resistance test
耐鹽水測試

Determination of colorimetric coordinates (CIELAB)
顏色坐標的確定 (CIELAB)

ISO 105 E03

Chlorinated water resistance test
耐氯化水試驗

ISO 105 B02

Xenotest

Determination of alloy composition
合金成分的測定

Measurement of deposit thicknesses via x-ray
通過x射線測量沉積物厚度

UNI 107829

Pencil test (Cross Hatch)
鉛筆測試 (十字形)

Quality 質量



Legor Group's commitment to act in a responsible and sustainable way results in certified processes for ethics (RJC CoP), quality (ISO 9001), respect for the environment (ISO 14001), health and safety in the work environment (OHSAS 18001) and traceability of precious (TFashion).

Supporting documents for all Master Alloy Division products

- **Technical datasheets:** the data sheets contain information on how to make the best use of our products. The documents are available on our web site.
- **Technical Specification:** it contains information on the formulation and on other characteristics of the alloy, with allowed tolerances on the content of each element in the composition. The document is available on request.
- **Conformity to technical specification:** it is the certificate that declares that a certain batch of alloy responds perfectly to the formulation expected by the technical specification. The document is available on request.
- **Material Safety Data Sheet:** our safety data sheets are prepared in accordance with current regulations on substances and preparations (GHS-CLP). The document is available on request.

Legor Group 承諾以負責任和可持續的方式來運作，對應道德（RJC CoP），質量（ISO 9001），環境保護（OHSAS 18001）和可追溯性（TFashion）的證書。

有關補口部門所有產品的文件

技術數據表：數據表包含有關如何有效利用我們產品的信息。這些文件可在我們的網站上找到。

技術規格：它包含合金的配方和其他特性的信息，並且提供組合物中每個元素含量可允許的公差。該文件可應要求提供。

對技術規格的確認：這是證明一批合金的配方完全符合預期技術規範的證書。該文件可應要求提供。

材料安全數據表：我們的安全數據表是根據現行有關物質和製造（GHS-CLP）的規定而編制的。該文件可應要求提供。



Certified Member
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responsiblejewellery.com



Traceability & Fashion
AGR0092A

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NUMBERS | 數字

1979	Since 開業
5000	Sqm surface area (HQ) 平面面積 (HQ)
50	Retailers worldwide 全球零售商
180	Employees 僱員
6	Worldwide branches 全球分行
2	Commercial office in Italy 意大利的商業辦公室
40	Percentage of jewels worldwide produced with Legor group alloys 全球使用 Legor Group 補口生產珠寶的百分比
10.000	Clients 客人
4	Divisions 部門

MASTER ALLOY |

Product lines dedicated to the transformation of metal from a raw material to a finished product for jewellery, silver and fashion accessories.

產品線致力將金屬從原材料轉化為珠寶，銀飾和時尚配飾的成品。

JEWELRY PLATING | FASHION PLATING | INDUSTRIAL PLATING |

Processes for jewellery surface coating for both protection (anti-tarnish, non-scratch and thickness) and decoration.

珠寶表面塗層的工序，有保護（防氧化，無划痕和厚度）和裝飾的功能。

TOOLS & CONSUMABLES |

A wide selection of the best makes of machinery, tools and consumables for various sectors: gold, silver, hobby, eyewear.

各種各樣的機械，工具和耗材，適用於：金，銀，愛好，眼鏡。

BRAZING |

Solutions designed to meet all sorts of different industrial soldering needs.

滿足各種不同的工業焊接需求的解決方案。



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