

# **JEWELRY PLATING**

Product catalog | 產品目錄



We transform metals to boost their intrinsic, stellar qualities and let them shine again

我們改造金屬以提升 他們固有而顯著的品質 讓他們再次閃耀



# LEGOR GROUP The PLATING specialization



### 2 2

With its headquarters in Vicenza (Italy) since 1979 and 6 branches worldwide, Legor Group provides alloys to produce 40% of gold jewelry in the world. By making the most of our long experience in the metallurgy field, since the early 2000s we have intensely specialized in the closely connected field of galvanic treatments.

\*)

自1979年起於意大利的維琴察(Vicenza)設置其總部,並在全球設有6家分公司,Legor Group提供的合金佔全球黃金首飾生產的40%。 通過充分利用我們在冶金領域的長期經驗,自2000年代初期,我們一直專注於電流程序的相關領域。

### ЯŠ

**AIMING TO OPEN IMAGINATION.** Legor **|PLATING|** supports jewellers so that they are free to produce any creations of their imagination: unique and inimitable, as well as set to last over time.

**R&D FIRST.** This is achieved thanks to the high level of technology and innovating research carried out in our R&D labs by our Plating experts, and to the strong partnership with our Clients whom rely on us to find out breakthrough solutions to their challenges.

**A MADE-IN-ITALY VISION.** We are meticulous manufacturers and believe in the values of Made-in-Italy: creativity, technology, top quality; but most of all we like to converse to exchange perspectives and discover new opportunities, so that our products and services can be constantly updated to the Market trends.

**BEST PRODUCT PERFORMANCES.** We are not afraid of challenges: our galvanic solutions aim to guarantee higher performing results, perfect surfaces and brilliant long-lasting colors, giving for granted our products compliance to the most strict international normative testing.

### BEYOND THE SURFACE. OUR METALLURGIC

**EXPERTISE.** We propose synergic solutions: on the basis of our metallurgical experience in the alloys production sector, we are able to see beyond the surface and recommend the right product, correct the process and optimise production in relation to costs and timescales.

**PARTNERSHIP AS A VALUE.** We are an attentive and optimistic partner: we support new ideas by offering professionalism and competence; we celebrate our partners' successes and respect their need for confidentiality. Through a close support, product quality repeatability is granted in the long term.

**ACROSS THE WORLD.** The global Legor network is at our customers' disposal to support them wherever they are with promptness and precision: throughout the world, a Legor Plating specialist is ready to give full answers and practical solutions.



# Certified Member

0000 1020

responsiblejewellery.com



# - TF

Traceability & Fashion
AGR0092A

### 25

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).

Legor Group致力於以負責任和可持續的方式採取行動,通過不同認證流程,如道德(RJC CoP),質量(ISO9001),環境保護(ISO 14001),健康和安全的工作環境(OHSAS 18001)和可追溯性(TFashion)。

旨在擴闊想像力。Legorl電鍍部門支持珠寶商,讓他們以想像力自由創作:獨一無二和不可或缺,並且可以隨著時間的推移流傳下去。

研發優先。這要歸功於我們的電鍍專家在我們的研發實驗室進 行高水平的技術和創新研究,以及與依靠我們的客戶建立的強 大合作夥伴關係,為他們遇到的挑戰找到突破性的解決方案。

'意大利製造'的願景。我們是一絲不苟的製造商,並相信意大利製造的價值:創新,技術,頂級品質;但我們最想要的是交換觀點並發現新的機會,使我們的產品和服務可以不斷更新以適應市場趨勢。

最佳的產品表現。我們不懼挑戰:我們的電解藥水旨在保證 更高性能的成果,完美的表面和卓越的持久色彩,理所當然地 讓我們的產品符合最嚴格的國際標準測試。 超越表面,我們的專業冶金知識。我們提出了協同解決方案:根據我們在合金生產領域的冶金經驗,我們能夠看到的不止表面並推薦合適的產品,糾正過程並優化生產中付出的成本和時間。

重視伙伴關係的價值。我們是一個細心和樂觀的合作夥伴: 我們支持新的想法,提供專業知識和才幹;我們樂於見證客戶的 成功,並尊重他們對保密性的需求。通過緊密的支持,產品質 量的可重複性是長久而有效的。

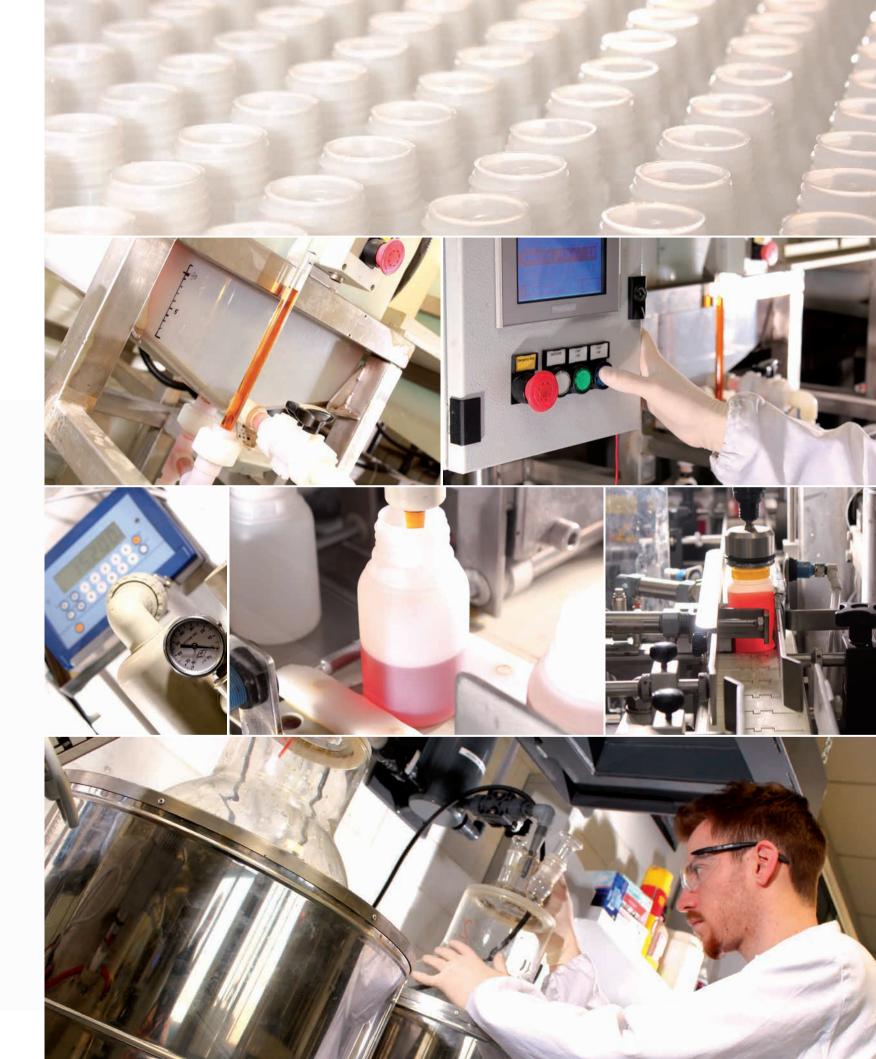
滿佈世界各地。全球的Legor網絡為我們的客戶隨時隨地提供 迅速和準確的支持:在世界各地,Legor的電鍍專家隨時準備提 供完滿的答案和切實可行的解決方案。

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# **DLEGOR®**







# PLATING SOLUTIONS 電鍍藥水

Optimal yield and simplicity of use. 最佳的產量和容易使用。

### 24

Customers recognize LEGOR galvanic solutions valuable features to simplify their daily job: very good yield, ease of use and guarantee of process control.

The Legor Group plating solutions are the result of a very accurate production process starting from a careful selection of the best raw materials. The transformation begins when the raw materials are submitted to strict operational protocols followed by intense quality controls and finally packed.

With a devoted eye on production practices and unmatched attention to details, the ISO 9001 certification guarantees a professional approach and the high quality of our products.

Staying on top of fashion trends and combining this knowhow with our Research and Development Laboratory enable us to deliver a wide range of plating solutions to satisfy the needs of all manufacturers worldwide. 客戶認可LEGOR的電鍍藥水的寶貴特性有助簡化他們的日常工作:非常好的產量,容易使用和保證過程受到控制。

Legor Group的電鍍藥水是從選擇原材料到生產過程都是一絲不苟,嚴格監控。從原材料轉換開始遵循嚴格的操作協定,然後進行嚴格的質量控制和最後的包裝。

專注於生產過程和對細節無與倫比的關注, ISO 9001 認證肯定了我們產品的專業性和高品質。

緊貼時尚潮流,並結合我們的研發實驗室的專業知識,使我們能夠提供一系列的電鍍藥水,以滿足全球製造商的需求。

# WHITE RHODIUM FOR BATH RODIO 水鍍白銠



**DLEGOR**°

# **XL PROCESS**



## **W PROCESS**

# J PROCESS



White rhodium is used for several reasons and the best product to



8,0

Ready to use form (2 g/l)

即可使用型 (2克/升)

L
90,5



RH2W

**Features** 

特點

• 基本白銠配方

• 適用於大平面

• 可於室溫環境電鍍

• 準確的消耗控制

• 銠消耗量低

• 易於維護

L	а	b
88,6	0,6	2,1

Ready to use form (2 g/l)

• Original rhodium formulation

Easy to maintain white rhodium

Ideal for large flat surfaces

• Efficient at room temperature

Slow rhodium consumption

Accurate consumption control

即可使用型 (2克/升)



L	а	b
90,2	0,8	1,6

### RH2FJ

Concentrated form (2 g/100 ml) 濃縮裝 (2克/100毫升)

### **Features**

- Lowest consumption speed (3 mg/ampmin)
- Highly resistant to organic contamination
- Compact deposit
- Ideal for beaker plating
- Phosphate based chemistry
- Low deposit efficiency

### 特點

- 最低消耗速度(3毫克/安培分鐘)
- 高度抵抗有機污染
- 緊致的沉積表面
- 非常適合燒杯電鍍
- 磷酸鹽基的配方
- 低沉積效率

select can vary depending on production size, production demands, and types of substrates treated. The L\* coordinate typically reflects a particular rhodium's degree of whiteness. The higher the L\* value is, the whiter the color is typically perceived. Also, different production practices and treated substrates have an effect on this value: this is the primary reason why we have fine-tuned four different process types in our portfolio.



生產商會因應生產量,生產需求及底材種類而選擇最適用的白銠產 品。L座標能反映白銠產品的白度。L數值越高,白度會越高。值得留 意的是,不同生產流程和底材處理均會對這個數值產生影響。正因如 此,我們對產品進行微調以應對四種不同生產流程。



RH2XL

90,6

Code:

- The whitest formulation available
- Enhances pavé and transparent
- Ideal for pavé or wax-set designs
- High throwing power
- Thickness up to 1 micron

### 特點

- 最白的配方
- 改善微鑲石底顏色

**Related products** 

Concentrated form

RH2FXL (2 g/250 ml) (2 克/250 毫升)

RH5RXL (5 g/100 ml) (5 克/100 毫升) \*

相關產品

Replenisher

補充劑

- 適用於微鑲和蠟鑲設計的產品
- 高覆蓋力
- 厚度可達1微米

### **Features**

RH2M

- Maximum process flexibility
- Superior white color

Ready to use form (2 g/l)

即可使用型 (2克/升)

- Ideal for productions without object shape consistency
- Anti-burn technology
- Can be used in barrel plating

### 特點

- 最高流程彈性
- 特白
- 適用於形狀不規則的產品
- 防燒技術
- 可用於滾鍍

### **Related products** 相關產品

RH2FM (2 g/250 ml) (2 克/250 毫升) Concentrated form

RH5RM (5 g/100 ml) (5 克/100 毫升)\* Replenisher 補充劑



RH2FW (2 g/100 ml) (2 克/100毫升)\* Concentrated form 濃縮裝

RH5RW (5 g/100 ml) (5 克/100毫升)\* Replenisher 補充劑

### **Related products** 相關產品

RH5RJ (5 g/100 ml) (5 克/100 毫升)



# **DLEGOR**®

# **COLORED RHODIUM FOR BATH** RODIO 有顏色的銠

Colored rhodium electrolytes have been specifically designed for decorative electroplating applications by granting alternative rhodium color options for finishes: the final colors produced range from black to blue.

有顏色的銠電解質特別為裝飾電鍍應用而設計,以提供不同的表面 顏色選擇; 生產顏色由黑色到藍色。



# **BLUE** 藍色



-5,0 -21.9



Made of/Made of/組成:

• RH4FBLUEA

(4 g/250 ml Rh solution) (4克 / 250毫升銠溶液)

• RH4FBLUEB (40 ml blue additive)

(40毫升藍色添加劑)

Blue rhodium, concentrated form 藍色銠,濃縮裝

### **Features**

- Midnight blue color
- Homogeneous distribution
- Good color repeatability
- Room temperature process

### 特點

- 午夜藍 • 分佈均勻
- 顔色重複性高
- 室溫電鍍流程

### **Related products** 相關產品

Blue booster additives: 藍色添加劑:

- **BLUEADD** (100 ml) (100 毫升)
- **3035088** (1 l) (1 升)

# **ULTRA®**



55,0 -0,1

### Code:

### RH2BX

Extra black rhodium Ready-to-use code (2 g/l) 即可使用型 (2克/升)

### **Features**

- The darkest black rhodium color available in the market
- Ideal for two-tone designs
- Room temperature process
- Oxidation resistant layer
- Able to replenish and maintain in large tanks
- 100% Arsenic free
- REACH compliant

### 特點

- 市場上最深的黑銠色
- 適用於分色設計
- 室溫電鍍流程 • 抗氧化鍍層
- 於大型電鍍槽可補充和維護

**Related products** 

Concentrated form

RH2FBX (2 g/250 ml) (2克/250毫升)\*

RH2RBX (2 g/100 ml) (2克/100毫升)\*

- 100%不含砷
- 符合REACH

相關產品

Replenisher

補充劑

# **BLACK** 黑色



62,2 0,2 3,3

### RH2B

Standard black rhodium Ready-to-use code (2 g/l) 標準黑色銠 即可使用型 (2克/升)

### **Features**

- Black rhodium with gold undertones
- Ideal for two-tone designs
- Room temperature process
- 100% Arsenic free
- REACH compliant

### 特點

- 帶有金色調的黑銠適用於分色設計
- 室溫電鍍流程
- 100%不含砷 • 符合REACH

### **Related products** 相關產品

RH2FB (2 g/100 ml) (2克/100毫升)\* Concentrated form

RH2RB (2 g/100 ml) (2克/100毫升)\* Replenisher 補充劑

# **RHODIUM FOR PEN PLATING**

# RODIO 筆電銠



Rhodium pen plating or stylus plating is an electro-deposition process designated to plate small touch-up areas or perform little repair works.

LEGOR pen plating solutions are highly concentrated chemicals specifically conceived for the pen plating process. Prior to a product release, the solution must meet the following criteria:

- Deposition speed
- High luminosity level
- Color accuracy
- Limited bubble development
- Low tips consumption



筆電銠是一種電鍍工藝,設計用於鍍制微細面積或進行細小的修復工

LEGOR 筆電藥水為高濃度化學物特別用於筆電流程。 除了各自的產 品特性, 筆電藥水必需符合以下標準:

- 沉積速度
- 高亮度
- 顏色標準
- 產生有限的氣泡
- 筆尖消耗低



# WHITE 白色





# WHITE 白色

RH2PS

**Features** 





# **BLACK** 黑色



# **BLUE** 藍色



### RH2PB

Ready to use form **(2 g/100 ml)** \* 即可使用型 **(2克/100毫升)** \*

### **Features**

- Black rhodium for pen
- Excellent to highlight black diamonds
- 100% Arsenic free

### 特點

- 筆電黑銠
- 適用於點綴黑鑽
- 100%不含砷

### **RH2PBLUE**

Ready to use form **(2 g/100 ml)** \* 即可使用型 **(2克/100毫升)** \*

### **Features**

- Blue rhodium for pen
- Excellent to highlight
- Extremely stable process

### 特點

- 筆電藍銠適用於點綴藍寶石
- 過程非常穩定

### RH2PM

Ready to use form **(2 g/100 ml) \*** 即可使用型 **(2克/升**) \*

### **Features**

- The best possible balance between deposition speed and brightness
- Fastest deposition speed
- Great on wider, flat surfaces
- No fume development

### 特點

- 沉積速度與亮度之間的最佳平衡
- 最快的沉積速度 • 適用於大平面
- 沒有氣體產生

特點

• 採用了全新配方,特別適用於點綴 寶石和鋪面

Ready to use form **(2 g/100 ml) \*** 即可使用型 (**2克/100**毫升) \*

• Ideal to highlight transparent

to a brand new formula

Good deposit speed

stones and pavé surfaces, thanks

Optimum whiteness and luminosity

• 最佳的白度和亮度

• 良好的沉積速度

### **Related products** 相關產品

RH2PM-25ML 25 ml code 25毫升 配方

### **Related products** 相關產品

RH2PS-25ML 25 ml code 25毫升 配方

### **Related products** 相關產品

RH2PB-25ML 25 ml code 25毫升 配方

### **Related products** 相關產品

### RH2PBLUE25 25 ml code 25毫升 配方

# **PALLADIUM FLASH**

# 薄鈀

### $\times$

Palladium plating solutions designed for flash plating are commonly used in the international jewelry sector. As they yield pure metal layers and are not co-deposited with any other metal, the maximum thickness achievable with this category of electrolyte is 0.5 micron.

Flash palladium is primarily used as a substitute to nickel in the plating process. It can be used as an intermediate layer to improve adhesion to difficult-to-plate substrates or act as a barrier, preventing copper migration which is common to metal substrates containing significant amounts of this element.

\*)

國際珠寶行業經常使用為薄鈀電鍍溶液。由於它們能電鍍出純金屬層並且不與其他任何金屬共同沉積,這一類電解質的最大厚度可達到0.5 微米.

薄鈀主要用作電鍍工序中鎳的替代品。它可以用作中間層,以改善難 以鍍覆基材的粘附力,或用作阻隔層,防止高銅含量的金屬基材中常 見的銅遷移。



# STRIKE PROCESS



L		а	b
83	3,8	0,4	4,3

Code:

### PD2

Ready to use form **(2 g/l)** 即可使用型 **(2克/升**)

### **Features**

- Traditional palladium plating bath
- Excellent substitute to nickel in the plating process
- Good barrier to copper migration

### 特點

- 傳統的鈀電鍍液
- 能完美代替鎳在電鍍過 程中的作用
- 良好的阻隔層以防止銅遷移

# ECO AMMONIA-FREE



L	а	b
84,8	0,4	4,3

Code

### PD3-ECO

Ready to use form (3 g/l) 即可使用型 (3克/升)

### **Features**

- New generation palladium formula
- Totally absent of free ammonia
- pH stability = easy to use
- Thickness up to 1 micron

### 特點

- 新一代鈀配方
- 完全不含游離氨
- pH值穩定 = 易於使用
- 厚度可達1微米

# **PALLADIUM MICRON**

# 厚鈀



Palladium plating solutions for micron plating are essentially designed for technical electroplating applications. Other metals are introduced to the chemical formula and co-deposited as an alloy alongside the palladium. These electrolytes allow for a dramatic cost decrease in production, since the precious metal deposited is cut by a certain percentage depending on the system used. The alloy developed also enables the palladium layer to reach a much greater thickness, while maintaining its brilliance.

\*)

厚鈀電鍍液主要為技術性電鍍應用而設計。 化學配方中引入了其他金屬,並與鈀共同沉積作為鈀合金。 就不同的配方, 減低貴金屬於合金中的沉積比例,能在生產過程中大幅降低生產成本。此外,新開發的合金能使鈀鍍層達到更大的厚度,同時保持其亮度。



**DLEGOR** 

L	а	b	
83,8	0,4	4,3	

Code

### PD4-FE

Ready to use form **(4 g/l)** 即可使用型 (**4克/升**)

### **Features**

- Hypoallergenic = Nickel and cobalt free
- 100% REACH compliant
- 3 micron of thickness, without intermediate processing
- Superior leveling capabilities:
   90/10 alloy throughout the surface
- Ammonia free = pH balance
- High resistance to metallic contamination such as copper

### 特點

- 低過敏 = 無鎳及無鈷
- 100% 符合REACH標準
- 無需中間處理便能達到3微 米的鍍層厚度
- 優越的平整性:覆蓋在鍍件 表面的合金比例為90/10(鈀/鐵)
- 不含氨 = pH值穩定
- 對金屬污染(如銅)具有高度 抵抗能力



**PD4C** (4 g/250 ml) (4 克 /250 毫升) Concentrated form 濃縮裝

PD4 (4 g/l) (4 克 / 升) Ready-to-use form 即可使用型



# **GOLD FLASH**

# 薄金

The "flash" range of gold electrolytes is intended for bath plating, depositing a uniform, shiny layer in a wide range of colors. These baths are intended for decorative use and allow for a deposition thickness of up to 0.2 micron.

一系列的薄金電解質專為薄金水鍍而設計,能沉積均勻有光澤和不同 顏色的鍍層。這些電鍍藥水主要用於裝飾用途,鍍層厚度可達0.2微



The "Gold Flash" line by Legor | PLATING | is completely Nickel, Lead and Cadmium free

Legor | 電鍍部門 | 的"薄金"系列完全不含 鎳,鉛和鎘。

### **Features**

- Decorative layers up to 0.2 micron
- Good color repeatability
- Low gold content
- Nickel, lead, and cadmium free
- Alkaline solution

### 特點

- 裝飾層厚度可達0.2微米
- 顏色重複性高
- 低含金量
- 不含鎳,鉛及鎘
- 鹼性溶液

# 24 KT



L	а	b
86,3	5,6	35,7

### **GF24**

24 kt yellow gold flash solution for bath plating, ready-to-use (0.8 g/l)

24Kt 水鍍黃金溶液,即可使用型 (0.8克/升)

## **1N**



L	а	b	
88.2	0.8	28.2	

### GF1N

1N (greenish) yellow gold flash solution for bath plating, ready-touse (0.8 g/l)

1N(微綠) 水鍍黃金溶液, 即可使用型 (0.8克/升)

## **2N**



L	а	b
88,7	2,1	29,9

### GF2N

2N yellow gold flash solution for bath plating, ready-to-use

2N (18KT) 水鍍黃金溶液, 即可使 用型 (0.8克/升)

## **HAMILTON**



L	а	b	
90,0	4,3	26,0	

### **GFHAMILTON**

Hamilton yellow gold flash solution for bath plating, ready-touse (0.6 g/l)

Hamilton 水鍍黃金溶液,即可使用型 (0.6克/升)

### **3N**



**Legor**°

L	а	b	
87.8	4.1	26.4	

### **GF3N**

3N yellow gold flash solution for bath plating, ready-touse (0.8 g/l)

3N(14KT) 水鍍黃金溶液,即可使用 型 (0.8克/升)



24 kt yellow gold flash solution for bath plating, ready-to-use (1 g/l)

24Kt 水鍍黃金溶液,即可使用型 (1克/升)

- Completely free from toxic chemicals
- Solves any shipment problems
- Grants top eco-sustainability
- 完全不含有毒化學物質
- 解決所有運輸問題
- 提供最佳的生態可持續性



### **4N**



L	а	b	
87,4	5,4	24,6	

### GF4N

4N (salmon) yellow gold flash solution for bath plating, ready-touse (0.8 g/l)

4N (淺橙色) 水鍍黃金溶液, 即可使 用型 (0.8克/升)

## 5N



L	а	b
85,6	8,7	18,3

Code:

### **GF5N**

5N (reddish) yellow gold flash solution for bath plating, ready-touse (0.8 g/l)

5N (微紅) 水鍍黃金溶液, 即可使用 型 (0.8克/升)

# **GOLD FLASH**

# 薄金

(Continues.)

# **GREEN** 綠色



L	а	b
70,8	- 4,5	14,6

### **GFGREEN**

Green gold flash solution for bath plating without cadmium ready-to-use (1 g/l)

綠金薄金無鎘電鍍溶液, 即可使用型 (1克/升)

### **Features**

- Thickness up to 0.2 μm
- Good color reproducibility and stability
- Without Cadmium
- Without free cyanide

### 特點

- 厚度可達0.2微米
- 良好的顏色重複性和穩定性
- 不含鎘
- 不含游離氰化物

# **RUSSIAN RED** 俄羅斯紅



L	а	b
88,1	7,7	20,0

### **GF145N**

Russian red gold flash solution for bath plating, ready-to-use (0.5 g/l)

俄羅斯紅金薄金電鍍溶液、即可使用 型 (0.5克/升)

### **Features**

- Red russian or reddish yellow gold color
- Decorative layers up to 0.2 micron
- Good color repeatability
- Low gold content
- Nickel, lead, and cadmium free
- Alkaline solution

### 特點

- 俄羅斯紅或微紅黃金色
- 裝飾層厚度可達0.2微米
- 良好顏色重複性
- 低含金量
- 不含鎳, 鉛及鎘
- 鹼性溶液



# **RED** 紅色



	b
0,0	14,0

Code:

86.0

### **GFPINK**

**PINK** 

粉紅色

Pink gold flash solution for bath plating, ready-to-use (0.6 g/l)

粉紅金薄金電鍍溶液,即可使用型 (0.6克/升)

### **Features**

- Top Quality fashion pink color
- Working temperature: 60 °C
- Good throwing power
- Superior distribution

### 特點

- 頂級時尚粉色
- 操作溫度: 60°C
- 良好的均鍍能力 • 均勻分佈



L	а	b
85,4	10,4	17,0

### **GFRED-ECO**

Red gold solution for bath plating, ready-to-use (1 g/l)

紅金薄金電鍍溶液,即可使用型 (1克/升)

### **Features**

- Red gold plating solution Greater tarnish resistance
- No free cyanide

### 特點

- 紅金電鍍液
- 較強的抗氧化能力
- 不含游離氰化物

# **DEEP RED** 深紅色



L	а	b
85,0	10,1	14,7

### **GFRED**

Deep red gold flash solution for bath plating, ready-to-use (0.8 g/l)

深紅金薄金電鍍溶液, 即可使用型 (0.8克/升)

### **Features**

- True red flash gold plating solution
- Decorative layers up to 0.2 micron
- Good color repeatability
- Low gold content
- Nickel, lead, and cadmium free

\* Substances which are subject to the international regulations concerning transportation of dangerous goods / 符合國際危險貨物運輸法規的物質

Alkaline solution

### 特點

- 亮紅薄金鍍液
- 裝飾層厚度可達0.2微米
- 良好的顏色重複性
- 低含金量
- 不含鎳,鉛及鎘
- 鹼性溶液

# **BROWN** 啡色



L	а	b
77,1	8,1	22,3

### **GFBROWN-K**

Brown gold flash solution for bath plating, ready-to-use

啡金薄金電鍍溶液,即可使用型

### **Features**

特點

- Brown or Chocolate gold
- Plating deposit
- Greater tarnish resistance
- No free cyanide

- 啡金色或朱古力金色的電鍍層
- 較強的抗氧化能力
- 不含游離氰化物

# **PRIMER** 底金

**DLEGOR**®



	L	а	b	
_	82 N	8.1	33.6	

Code:

### **GFX1**

Acid gold strike solution for bath plating, ready-to-use (1 g/l) \*

酸金電鍍溶液,即可使用型 (1克/升) \*

### **Features**

- Gold strike bath
- Stainless steel activator
- Good pre-treatment for difficult-to-plate substrates

- 酸金水鍍
- 不銹鋼的活化劑 • 對於難鍍基材的良好預處理

# **GOLD THICKNESS**

# 厚金

# **DLEGOR**®

Gold micron plating solutions, otherwise known as hard-gold electrolytes, are a form of gold plating chemistry originally developed for technical electroplating applications.

They incorporate other metals such as iron, cobalt, indium and nickel in the chemical make-up, by utilizing them as an alloy that grants a maximum thickness of 3 micron. The addition of these metals also allows for maximum color control, hence granting that the colors of gold precisely correspond to the normalized NIHS color standards. These colors include 1N-14, 2N-18, 3N, and so on.

厚金電鍍藥水,也被稱為硬金電解質,是一種黃金電鍍化學,最初為 技術性電鍍應用而開發。

它們引入其他金屬成分,如鐵,鈷,銦和鎳制成合金,使鍍層厚度 可達3微米。加入這些金屬也允許最佳的顏色控制,並準確地符合的 NIHS顏色標準。顏色包括1N-14,2N-18,3N等等。

10年后海

## 24 KT



L	а	b	
82,0	8,1	33,6	

### GT4A

24 kt vellow gold micron solution for bath plating, ready-to-use (4 g/l) \*

24Kt 黃金厚金水鍍溶液,即可使用 型 (4克/升)

### **Features**

- 24 kt gold color
- Thickness up to 3 micron
- Contains no free cyanide
- Nickel, lead, and cadmium free

### 特點

- 24Kt 黃金色
- 厚度可達3微米
- 不含游離氰化物
- 不含鎳,鉛及鎬

### 1N



L	а	b
88,8	1,6	21,8

### GT4A1N

1N vellow gold micron solution for bath plating, ready-to-use

1N-14 黃金厚金水鍍溶液,即可使用 型 (4克/升)

### **Features**

- 1N or 14 kt gold color
- Thickness up to 3 micron
- Contains no free cyanide Lead and cadmium free
- Ideal for fashion accessories

- 1N或14Kt 金色
- 厚度可達3微米
- 不含游離氰化物

特點

• 不含鉛和鎘 • 適用於時尚配飾



L	а	b	
88,8	1,6	21,8	

### GT4A2N

2N vellow gold micron solution for bath plating, ready-to-use

2N-18 黃金厚金水鍍溶液,即可使用 型 (4克/升)

### **Features**

**2N** 

84,0

Code:

2,5

27.6

- 2N or 18 kt gold color
- Thickness up to 3 micron
- Contains no free cyanide
- Lead and cadmium free

### 特點

- 2N或18K金色
- 厚度可達3微米 • 不含游離氰化物
- 不含鉛和鎘

### 3N



L	а	b	
83,2	6,1	28,3	

### GT4A3N

3N yellow gold micron solution for bath plating, ready-to-use (4 g/l)

3N黃金厚金水鍍溶液,即可使用型 (4克/升) \*

### **Features**

- 3N gold color
- Thickness up to 3 micron
- Contains no free cyanide
- Nickel, cobalt, and cadmium free

### 特點

- 3N金色
- 厚度可達3微米
- 不含游離氰化物

### • 不含鎳, 鈷及鎘

# PINK/粉紅色



L	а	b
34,3	11,1	17,2

### **GT4PINK**

18 Kt pink gold micron solution for bath plating, ready-to-use (4 g/l) \*

18Kt 粉紅厚金水鍍溶液,即可使用型 (4克/升)

### **Features**

- Pink gold deposit
- Thickness up to 5 micron
- 18 kt alloy deposition
- Nickel, cobalt, and cadmium free
- High wear-resistant finish

### 特點

- 粉紅金鍍層
- 厚度可達5微米
- 不含鎳, 鈷及鎘
- 高耐磨表面

# BROWN/啡色



	L	а	b
_	69 N	F 0	116

### **GTBROWN**

Brown gold micron solution for bath plating, ready-to-use (1.5 g/l) \*

啡金厚金水鍍溶液, 即可使用型 (1.5克/升) \*

### **Features**

- Chocolate brown gold color
- Thickness up to 2 micron
- Contains no free cyanide
- Nickel, lead, and cadmium free

- 朱古力金色
- 厚度可達2微米
- 不含游離氰化物 • 不含鎳, 鉛及鎘





# **GOLD FOR PEN PLATING**

# 筆電金

**DLEGOR**°

Gold pen plating solutions deposit a brilliant gold color to the surface applied. They represent a perfect solution for two-tone plating applications where multiple gold colors are required. Gold pen solutions can also be used to highlight specific details or cover solder joints on gold colored items.

They are nickel, lead, and cadmium free, and despite being a traditional cyanide based alkaline chemical, they can be easily transported, given that their toxic level is below the limit established by international transportation laws.

黃金筆電溶液能在所應用的表面上沉積出一種閃耀的金色。 它們十分適用於需要多種金色的分色電鍍應用,並能突顯出產品的具體細節或 掩蓋鍍件的焊接點。

這些筆電藥水完全不含鎳,鉛和鎘的,儘管它們是以傳統的氰化物為 基礎的鹼性化學品, 但它們的毒性水平是遠低於國際運輸法的規定, 因此可以容易運輸。

24 KT



1N



**2N** 

**3N** 



PINK/ROSA

Code:

GY2P

24 kt yellow gold pen plating solution (2 g/100 ml) 24Kt黃金筆電溶液 (2克/100毫升) Code:

**GP1-1N** 

1N (greenish) yellow gold pen plating solution (1 g/100 ml) 1N (微綠) 黃金筆電溶液 (1克/100毫升)

Code:

**GP1-2N** 

2N (18 kt) yellow gold pen plating solution (1 g/100 ml) 2N (18Kt) 黃金筆電溶液 (1克/100毫升)

**GP1-3N** 

3N (14 kt) yellow gold pen plating solution (1 g/100 ml) 3N(14Kt)黃金筆電溶液 (1克/ 100毫升)

GP03P

Pink gold pen plating solution 玫瑰金筆電溶液

### **Features**

- Gold pen plating solution
- Great for two-tone plating applications
- Good color repeatability
- Used to cover solder joints Nickel, lead, and cadmium free

- 黃金筆電溶液 非常適用於分色電鍍應用
- 良好的顏色重複性
- 可用於覆蓋焊點
- 不含鎳, 鉛及鎘





# RUTHENIUM

# **DLEGOR**®

Ruthenium plating electrolytes deposit an abrasion-resistant layer of ruthenium metal in a wide range of dark colors, from gray to extra black. The dark colors produced are developed with extremely stable organic additives, making this electrolyte easy to use and maintain.

These acidic based compounds are primarily used in decorative plating applications when corrosion resistance is also required. The plating deposit is durable and can reach a maximum thickness of 0.2 micron. Due to the fact that ruthenium has a lower conductivity than other precious metals, this electrolyte requires a greater metal concentration to work optimally.

釘電解質能電鍍出從灰色到超黑色的釘金屬抗磨鍍層。電鍍的深黑顏 色是使用極其穩定的有機添加劑開發的,因此使電鍍液易於使用和維

這些酸性化合物主要用於裝飾性電鍍應用,同時也能提供耐腐蝕性。 電鍍層耐用,厚度最高可以達到0.2微米。由於釘的導電性較其他貴金 屬低,所以需要較高的金屬濃度才能達到最佳電鍍效果。



## **EXTRA BLACK** 特黑色



L	а	b	
42,0	0,5	2,2	

### KIT RU5BLACK-X

Made of/組成:

• RU5BLACK-XA (5 g/l Ru solution)

(5克/升 釕溶液)

• RU5BLACK-XB

(20 g blackening agent) (20克 增黑劑)

Extra black ruthenium for bath plating, ready-to-use (5 g/l)

特黑釘水鍍電鍍溶液, 即可使用型

### **Features**

- Deep black color
- Arsenic free
- REACH Compliant
- 5 grams per liter
- Economical precious metal deposit

### 特點

- 深黑色
- 不含砷
- 符合REACH
- 每公升5克
- 經濟的貴金屬鍍層

### **Related products** 相關產品

RU50R (50 g/l) (50 克/升) \* Concentrated ruthenium replenisher 釘濃縮補充劑

**RU5S** (1 kg) (1 公斤) Acidic conducting salts 酸性導電鹽

RU5RB-X (50 a) (50克) Blackening salts additive (available also in 1 kg packaging as code: RU5RBS-X)

(也有1公斤包裝, RU5RBS-X)

# **BLACK** 黑色



L	а	b	
55,0	0,4	2,0	

### **RU5BLACK**

Black ruthenium ready-to-use for bath plating (5 g/l)

黑釕水鍍電鍍溶液,即可使用型 (5克/升)

### **Features**

- Black color
- Very stable and easy to use process
- Abrasion and corrosion resistant
- 5 grams per liter
- Economical precious metal deposit
- Available also in concentrated form

### 特點

- 黑色
- 非常穩定和易於使用
- 抗磨損和抗腐蝕
- 每升5克
- 經濟的貴金屬鍍層

**Related products** 

**RU5BLACK-C** (5 g/200 ml) \*

RU50R \* (50 g/l) (50 克 / 升)

Acidic conducting salts

RU5RB (1 L) (1 升)

Blackening additive

Concentrated ruthenium replenisher

相關產品

濃縮裝

(5克/200毫升)

釕濃縮補充劑 **RU5S** (1 kg) (1 公斤)

酸性導電鹽

增黑劑

Concentrated form

• 同時提供濃縮裝

### **RU5DG-C**\*

Dark gray ruthenium for bath plating, make-up (5 g/200 ml)

- Dark gray color
- 5 grams per liter
- Corrosion resistant

- 每升5克
- 經濟的貴金屬鍍層
- 抗腐蝕

# **DARK GRAY** 深灰色



-	а	b
32.0	0.5	2.4

深灰色釕水鍍開缸劑 (5克/200毫升)

### **Features**

- Very stable and easy to use process
- Economical precious metal deposit

### 特點

- 深灰色
- 非常穩定和易於使用

### **Related products** 相關產品

RU50R (50 g/l) (50克/升) \* Concentrated ruthenium replenisher 

**RU5S** (1 kg) (1公斤) Acidic conducting salts 酸性導電鹽

RU5RB (1 L) (1升) Blackening additive 增黑劑

# **GRAY GRIGIO**



0,6

Code:

### **RU5GRAY**

Gray ruthenium ready-to-use for bath plating (5 g/l)

灰色釕水鍍電鍍溶液, 即可使用型 (5克/升)

### **Features**

- Titanium gray color
- Economical precious metal deposit
- Fastest depositing
- ruthenium electrolyte
- Functional at lower than optimal temperatures

### 特點

- 鈦灰色
- 經濟的貴金屬鍍層
- 沉積速度最快的釕電解質

• 低於最佳操作溫度時仍能運作

**Related products** 相關產品

RU50R (50 g/l) (50克/升) \* Concentrated ruthenium replenisher 

RU5S (1 kg) (1公斤) Acidic conducting salts 酸性導電鹽

# **PLATINUM**

PT4 is a platinum plating solution designed for bath plating. This electrolyte deposits a bright grey layer which is 99.97% pure platinum. The chemistry of PT4 is extremely flexible, allowing for a wide range of platinum metal concentrations to be used, ranging from 2 to 20 grams per liter. The higher the metal concentration used, the higher the obtainable thickness, until reaching a maximum deposit of 20 micron. These features make this platinum electrolyte also ideal for technical electroplating applications.

PT4是設計用於水鍍的鉑電鍍溶液。 該電解質可沉積一層99.97%為 純鉑的亮灰色鍍層。 PT4的化學特性非常靈活,可以使用的鉑金屬濃 度的範圍十分廣泛,範圍從每升2克到20克。 使用的金屬濃度越高, 可獲得的鍍層厚度越高,鍍層最厚可達20微米。 這些特性使鉑電解 液非常適合於技術電鍍應用。





L	а	b	
85.3	0.5	3.5	

### PT4

Platinum solution for bath plating ready-to-use, white color (4 g/I)

鉑水鍍電鍍溶液,即可使用型,白色 (4克/升)

### **Features**

- Platinum plating solution
- Flexible metal concentration
- 0.2-20.0 micron
- Designed for technical plating operations

### 特點

鉑電鍍溶液 靈活的金屬濃度 厚度0.2-20微米 專為技術性電鍍應用而設計

### **Related products** 相關產品

PT25R (25 g/l) (25克/升) \* Concentrated replenisher form 濃縮補充劑

# **ECO-SILVER** 生態銀



# **DLEGOR**®

ECO-SILVER is a silver plating electrolyte for bath plating which provides a new and completely cyanide-free approach to silver electroplating. When compared to traditional silver plating methods that can contain up to 200 grams of potassium cyanide per liter, this plating solution is the answer to the common issues linked to cyanide restrictions throughout the international community. Moreover the complete absence of cyanide provides healthier working conditions for plating operators and also reduces environmental concerns in the form of waste water and waste water treatment.

ECO-SILVER is a two part process available in a kit, part A being the silver solution and part B being the post treatment. The solution works at low current densities and can obtain a plating thickness up to 20 micron.

The final deposit is bright, 99.9% pure silver, and does not have to be polished after deposition. This silver plating solution can be used in both decorative and technical plating applications.

ECO-SILVER是一種鍍銀水鍍電解溶液,它提供了一種全新和完全 不含氰化物的鍍銀方法。與每升可達200克氰化鉀的傳統鍍銀溶液相 比,這種鍍液能解決國際社會對氰化物的限制問題。此外,完全不含 氰化物能為電鍍操作人員提供了更健康的工作環境,同時也減少了廢 水排放和廢水處理方式對環境的影響。

ECO-SILVER的套件中包含兩部分工序, A部分是鍍銀溶液, B部分 是後處理。該電鍍溶液可在低電流密度下工作,並且鍍層厚度可高達 20微米。

電鍍鍍層是光亮,99.9%的純銀,而且沉積後不需要抛光。該鍍銀溶 液可用於裝飾和技術性電鍍應用。



L	а	b
97,7	-1,2	2,7



### KIT AG-EC01

Made of/組成:

• AG-ECO1A

(Silver plating solution) (銀電鍍溶液)

• AG-ECO1B

(Post silver plating solution) (後處理銀電鍍溶液)

ECO SILVER - Cvanide free silver plating solution, ready-to-use (1 L)

ECO-SILVER - 無氰銀電鍍溶液,即 可使用型 (1升)

### **Features**

- Silver plating solution
- 100% cvanide-free
- Thicknesses from 0.2 to 20 microns • Bath to be used until exhaustion
- To be used with silver anode

- 銀電鍍溶液
- 100%不含氰化物
- 厚度從0.2到20微米
- 電鍍溶液可使用直至用盡
- 使用銀陽極



# PLATING TV You Tube



GO TO THE CHANNEL 查閱我們的頻道



 $^{\vee}$ 

The YouTube "Plating TV" channel by LEGOR provides you with information and technical instruction about our plating solutions, machinery and processes.

Every month we will update the channel with short educational content related to our latest products, tips and tricks for better production and didactic videos to make your working life easier.

SUBSCRIBE AND STAY TUNED FOR NEW CONTENTS!

LEGOR 在 YouTube 頻道"Plating TV"為您提供有關我們的電鍍藥水,機器和工序的信息和技術指導。

我們每個月都會更新頻道,並提供有關我們最新產品相關的簡短教學,生產 技巧,以及教學視頻,讓您的工作更輕鬆。

訂閱並敬請期待新內容!



NEWS

TIPS

TECHNICAL INSTRUCTION



# **No Limits Plating Project!**

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Curious to know how far you can go with **| PLATING |** by Legor? No boundaries (...or nearly none) for our magic team. Through our **PLATING TV channel on Youtube**, you can already check out the new challenges under the guidance of Jacob, Massimo, Fulvio and Martino.

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很好奇想知道Legor 電鍍部門 能帶你走多遠? 我們的團隊沒有界限(……或幾乎沒有界限)。 透過我們在Youtube上的PLATING TV頻道,您可以在Jacob,Massimo, Fulvio和Martino的指導下接受新的挑戰。





**T-FENDER:** 

PASSIVATION SOLUTIONS 鈍化藥水

### **CERAMI**

TRANSPARENT E-COATING 透明納米陶瓷電泳

### KLIAR LINE

COLORED E-COATING 彩色納米陶瓷電泳

Brilliance that overcomes time. 能克服時間的光芒。

### 22

Passivation and coating technologies are conceived to assist with oxidation protection or to improve wear resistance of metallic surfaces. Legor Group is very keen to offer suitable solutions to advance these features, common to plated and non-plated metallic substrates. We offer a selective line of products using different technologies, specifically studied to protect surfaces from external degradation.

**E-Coating** is a process that deposits a cross linked organic polyurethane or acrylic coating to any suitable pre-treated electrically conductive substrate. It is applied by the means of electrophoretic deposition. Coatings can be clear or coloured, translucent or opaque, and have uniform thickness over the part, typically in the 10-20 micron range. Heat treatment in an oven also known as the curing phase is what centers the particles providing the coating with durability.

Chemical passivation refers to a material becoming "passive" and being less affected by environmental factors such as air or pollution. Passivation is the generation of a shielding layer comprised of oxides, which protects the surface that it is applied to from corrosion. A passivation layer is typically 10 nano-meters thick and completely invisible to the naked eye, hence it doesn't alter the surface color or its reflectivity.

鈍化和塗層技術被認為可加強氧化保護或改善金屬表面的耐磨性。 Legor Group非常熱衷於提供合適的藥水,以提高鍍層和非鍍層金屬基材的通用特性。我們提供使用多種技術的產品線以供選擇,特別是研究保護表面免受外部的降解作用影響。

電泳塗層:是一種將交聯的有機聚氨酯或丙烯酸塗層沉積到任何合適和已經預處理的導電基材上的工序。 它通過電泳沉積的方式使用。 塗層可以是透明或帶有顏色的,半透明或不透明的,並且具有均勻的厚度,範圍通常在10-20微米。 烘箱中的熱處理也被稱為燒結過程,以穩定顆粒來提供高耐久性的塗層。

化學鈍化: 指物質變得"被動",令其受空氣或污染等環境因素的影響較小。 鈍化是由於產生氧化物而組成屏蔽層,以保護表面免受腐蝕侵害。 鈍化層通常為10納米厚,並且肉眼完全不可見而且不會改變表面顏色或反射率。

# T-FENDER PASSIVATION SOLUTIONS 鈍化藥水

### $\mathbb{R}$

T-FENDER is a family of chemical passivation agents developed for metallic substrates which naturally have poor corrosion resistance. Some of these substrates include silver, brass, bronze, low karat gold, and some electroplated layers. By applying the T-FENDER products to these metals, oxidation (tarnish) resistance is dramatically elevated by providing an invisible layer, which seals the substrate form external elements. Laboratory tests have proved that chemical passivation protects from corrosion originating from hydrogen sulfide, UV radiation, synthetic sweat, and humidity. T-FENDER products are easy to use, not requiring any electrical current and work simply by heating up the product and dipping your object in.

\*)

T-FENDER是為耐腐蝕性較差的金屬基材開發的一類化學鈍化劑。 其中一些基材包括銀,黃銅,青銅,低克拉金和一些電鍍層。 通過將T-FENDER用於這些金屬,提供一個不可見的層,將底材與外界元素隔絕,從而顯著提高了防氧化(抗褪色)能力。 實驗室測試證明,化學鈍化可防止硫化氫,紫外線輻射,合成汗水和濕氣引起的腐蝕。T-FENDER產品易於使用,不需要任何電流,只需將產品加熱並浸入物體即可使用。

### Features

- Excellent protection from oxidization (tarnish)
- No physical alteration to treated surface
- Does not require electrical current
- Chromium and heavy metal free
- Easy to use

### 特點

- 良好的防氧化能力(防褪色)被處理的表面沒有物理變化
- 不需要電流
- 不含絡和重金屬
- 容易使用

### T-PRO

Anti-tarnish chemical passivation for oxidization resistance ready-to-use,  ${\bf 5}~{\bf L}$ 

抗氧化防褪色的化學鈍化劑 (即用型),5升

### **T-PRO20**

Anti-tarnish chemical passivation for oxidization resistance (1:20 concentrate), 1 L

抗氧化防褪色的化學鈍化劑 (1:20濃縮裝),1升

### **T-PRO50**

Anti-tarnish chemical passivation for oxidization resistance (1:50 concentrate), 1 L

抗氧化防褪色的化學鈍化劑 (1:50濃縮裝),1升

Now available with conductive salts for an improved performance: 現在可用導電鹽改善性能:

### **T-SALT**

Conducting salts for anti-tarnish chemical passivation, **100 g** 用於防褪色化學鈍化劑的導電鹽, **100克** 



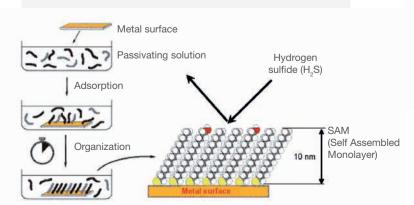


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Related products 相關產品

### 3007150

Fast tarnish test kit 快速褪色測試套件



# **CERAMIX** TRANSPARENT E-COATING 透明納米陶瓷電泳

CERAMIX is a second generation, transparent nano-ceramic e-coating specifically designed for industrial scale productions. It is a hybrid resin impregnated with ceramic, to improve resistance to abrasion as well as to better protect the product during international normative testing procedures. The incorporation of the ceramic particles also provides a metallic sensation to the touch.

The achievable thickness of the coating laver ranges from 5 to 35 micron while remaining completely transparent and undetectable. The resin matrix has been specifically studied to remove the "orange peel" phenomenon, common when coating large flat surfaces.

CERAMIX e-coating is extremely stable, more resistant to chemical contamination, and it does not underperform when impure or conductive water greater than 5 microsiemens is introduced to the bath.

CERAMIX是第二代透明納米陶瓷電泳塗料,專門設計用作工業規模的 生產。它是一種加入了陶瓷的混合樹脂,用作提高耐磨性,並能在國 際標準化測試程序中更好地保護產品。加入的陶瓷粒子也提供了金屬

薄膜的厚度範圍為5至35微米、同時能保持完全透明且不被察覺。樹 脂混合物被專門研究,以消除塗覆大平面面積時常見的橙皮紋現象。

CERAMIX電泳塗層非常穩定,能抵禦化學污染物,當雜質或超過5uS 的水被帶進電泳缸時, 也不會影響運作性能。

### **CERAMIX**

Ready to use product 5 L 即可使用產品,5升

Code:

### **CERAMIX-M**

Matte ready to use product 5 L 砂面即可使用產品,5升

Code:

### 3019000

Matte additive for nanoceramics 納米陶瓷的啞光添加劑

Code:

### 3019002

Solvent for Ceramix 1 L Ceramix 溶劑, 1升

### **CERAMIX-C**

1:2 concentrated product 5 L 1: 2濃縮產品, 5升

Code:

Code:

### **CERAMIX-R**

Nanoceramic resin 5 L 納米陶瓷樹脂混合物,5升

Code:

### 3019001

Lactic acid 90% 1 L 90%乳酸, 1升

### **Features**

- Ceramic impregnated into the resin improving abrasion resistance
- No "Orange peel" defects on large flat surface areas
- Undetectable uniform film thickness
- 100% coverage of complex parts
- Stable for use in industrial production cycles
- REACH & OSHA compliant

- 將陶瓷加入樹脂中以改善耐磨性
- 於大面積表面沒有橙皮紋
- 不被察覺且均勻的薄膜厚度 • 可100%覆蓋設計複雜的配件
- 穩定的工業生產應用
- 符合REACH和OSHA標準

## BENEFITS/優點

### It eliminates the Orange Peel Effect

Orange peel refers to texture in the finished coated surface which is uneven and similar to that of an orange skin. It is commonly found on coated surfaces that tend to be larger and flat in size. This occurrence is visually displeasing and therefore is tightly controlled in the quality evaluation of finishes.

In CERAMIX, we have studied a resin matrix that reduces this phenomenon by 95%, and in most cases by 100% when the proper application process is followed.

### It is applicable to all conductive surfaces

The coating can be applied to all conductive surfaces, therefore to any metallic substrate. However, for metals with natural oxide layers such as Steel, Aluminum and Copper, it is typically recommended to make them undergo various pretreatments to enhance/improve the coating adherence.

The lower curing temperature range makes it an ideal top coat for Zamak without causing surface blistering.

### It can cover very wide surface areas

One kilogram of the initial resin in concentrated form will apply a coating of 1 micron over around 450 sqm, assuming 100% productivity.

Note: this reference number is approximate since it does not consider drag-out effects or other forms of production loss.

### 消除橙皮紋

橙皮紋是指成品塗層表面紋理不均勻,類似橙皮。它通常在大面積塗 層表面上出現。由於它會影響外觀,因此在質量評估中會受到嚴格控

在CERAMIX中的樹脂混合物,可以95%減少這種現象,而在正確應 用下,可完全避免大面積塗層上出現橙皮紋的問題。

### 適用於所有導電表面

該塗層可以應用於所有導電表面,因此適用於任何金屬底材。然而, 對於一些具有自然氧化層的金屬, 如不銹鋼, 鋁和銅, 建議使用各種 前處理以增強/改善塗層的黏附力。

較低的燒結溫度使塗層非常適合用於鋅合金上, 而且不會引起表面氣

### 可以覆蓋大平面面積表面

假設100%的生產力、1公斤的濃縮樹脂可在約450平方米面積上施加1

注意: 此數據只作參考, 因為它不包括過水及其他形式的生產損耗。

### **Obtainable Level Thickness Range**

The obtainable thickness range is 5-35 micron, at the same time granting a homogeneous surface distribution throughout the object.

35 micron is quite substantial considering that a level coating at this thickness is difficult to reach even by spray application.

### 可獲得的厚度範圍

可獲得的厚度範圍為5-35微米, 並且為鍍件提供一層均勻的薄膜。

35微米被認為是即使通過噴塗工藝 也難以達到的薄膜厚度。



SEM X 200 magnifications - thickness: 29.88 ± 0.83 µm SEM X 200放大倍數 - 厚度: 29.88±0.83µm





# **KLIAR LINE COLORED E-COATING**

# 彩色納米陶瓷電泳

KLIAR LINE is a colored e-coating product range intended for decorative finishing purposes. The e-coating is infused with nanoceramic particles which are undetectable by the human eve. These particles make the coating more abrasion-resistant than traditional coatings, and they provide a metallic sensation to the touch.

The flexible curing range allows for the treatment of the majority of metallic substrates, including zamak. The achievable thickness ranges from 5 to 18 micron. KLIAR nano-ceramic coatings also allow for major improvements in resistance to both UV light and corrosion, hence passing the most used standardized normative testing.

KLIAR LINE是用於裝飾性工藝的彩色電泳漆系列。電泳漆注入了肉眼 無法察覺的納米陶瓷顆粒。這些顆粒使新塗層比傳統塗層更耐磨. 並 且能提供金屬觸感。靈活的燒結範圍適用於大部分金屬底材,包括鋅 合金。鍍層厚度範圍從5至18微米。 KLIAR納米陶瓷塗層還能大幅提 升抗紫外線和耐腐蝕能力,從而通過最高級別的標準規範測試。

靈活的燒結範圍適用於大部分金屬底材,包括鋅合金。鍍層厚度範圍 從5至18微米。 KLIAR納米陶瓷塗層還能大幅提升抗紫外線和耐腐蝕 能力,從而通過最高級別的標準規範測試。

### **Features**

- Nanoceramic colored e-coating
- Standard package: 5 L bottle
- Also available in 1 L bottle
- 5-25 micron of thickness
- Highly corrosion resistant
- Suitable for every type of metal, with or without stones
- High tarnishing resistance

### 特點

- 彩色納米陶瓷電泳塗層
- 標準包裝: 5升裝
- 也有1升裝 鍍層厚度可達5-25微米
- 高耐腐蝕性
- 適用於任何類型,帶或不帶有寶 石的金屬
- 高防氧化能力

### 相關產品

**Related products** 

# **3009011** (5 L) (5升) 1:200 concentrated rinse aid for e-coating post treatment 1: 200濃縮電泳後處理沖洗劑 3009009 1000 mesh filter cups for e-coating 1000 mesh 電泳漆過濾杯 3009010 (10 kg) (10 公斤) \* Acidic stripper for e-coating 電泳塗層的酸性剝離劑 3009018 (10 L) (10升) \* Eco Acidic stripper for e-coating



### 18 KT GOLD 18 KT黃金色

9,4 34,3

Code: KLIAR-AU

33.7

Code: KLIAR-ROS

### 24 KT GOLD 24 KT黃金色

39,3 84,2 11,4

Code: KLIAR-24

PINK

粉紅色

# **LEMON YELLOW**

86,2 -7,6 56,4

# 檸檬黃色

Code: KLIAR-LMN

### **5N YELLOW GOLD** 5N黃金色

-28.8 -5,5

Code: KLIAR-5N

80.5 17.3

Code: KLIAR-PNK

### **COPPER** 銅色

82.9 23.7

Code: KLIAR-CU

### **ORANGE** 橙色

55.9 52.8

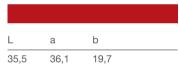
Code: KLIAR-ORG

### RED 紅色

ROSÉ

82.9

玫瑰紅色



Code: KLIAR-RED

### **GREEN** 綠色



Code: KLIAR-GRN

### **EMERALD GREEN** 翡翠綠色

-39,9 55,3

Code: KLIAR-EMR

### **WATER GREEN** 海綠色

20.3 33,7

Code: KLIAR-ACQ

### **TURQUOISE** 藍綠色

L	а	b	
48 7	-30.2	-25.5	

Code: KLIAR-TRQ

### **BLUE** 藍色

L	а	b	
38,2	7,4	-42,9	

Code: KLIAR-BLU

### **FUCHSIA** 紫紅色

L	а	b
49,0	56,3	-17,4

Code: KLIAR-FCH

### **VIOLET** 紫色

47.5 14.9

Code: KLIAR-VLT

### **MAROON** 褐紅色

			_
	а	b	
7,0	20,8	4,3	

Code: KLIAR-MRN

### **BROWN** 啡色

L	а	b
34,6	18,1	14,7

Code: KLIAR-BRW

### TRANSPARENT BLACK 透黑色

	L	а	b
_	35,7	-2,3	-6,5

Code: KLIAR-BLK

### **JET BLACK OPAQUE** 深黑色

22,0 0,5 2,2

Code: KLIAR-BX

\* Substances which are subject to the international regulations concerning transportation of dangerous goods 符合國際危險貨物運輸法規的物質 36 Jewelry Plating

# **PRE-TREATMENTS**

Troubleshooting plating problems can always seem challenging. The ideal brilliant and luminous finish is too often interrupted by black and brown spots, surface discoloration, or a dull plating finish. Actually, there is a limited number of variables that need to be monitored in achieving consistent quality in a plating deposition.

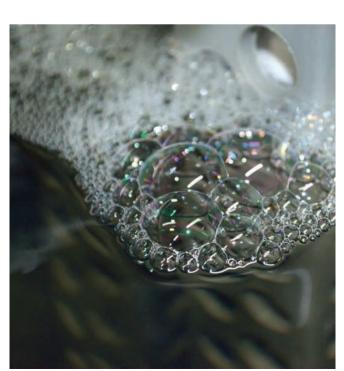
The largest percentage of surface defects can be prevented by simply following the proper cleaning procedures. This makes the proper preparation of the prior-to-plating piece the most important factor in achieving good results. All pre-treatment steps are important, in order to obtain premium quality plating throughout the entire process.

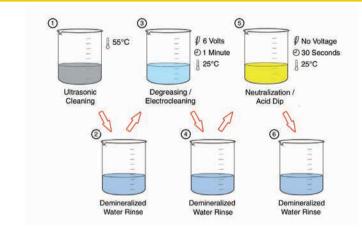
Legor Group offers a complete line of pre-treatments for plating. made of the highest quality chemical compounds, so as to grant consistency in the plating deposition results.

要解決電鍍問題似乎總是具有挑戰性。理想中的明亮和閃耀的表面時 常被黑棕色斑點,表面褪色或鍍層色彩黯淡的問題所影響。但實際 上,只需要監控有限的變量問題從而達到一致的質量的電鍍沉積。

簡單來說,只需遵循適當的清潔程序便能預防大部分的表面缺陷。電 鍍前合適的前處理是取得良好結果的最重要因素。為了在整個過程中 獲得優質的電鍍效果,所有的前處理步驟都非常重要。

Legor Group提供完整的電鍍前處理系列,由最高質量的化合 物製成,以確保電鍍沉積結果的一致性。





### **NEUT1**

Neutralizing solution for the plating process, ready-touse 5 L

電鍍過程的中和溶液, 即可使用型 5升

### 962462

Ultrasonic degreasing solution

超聲波除油溶液 5升

Code:

### SGR1

Electrolytic degreasing solution for the plating process, ready-to-use **5** L

電鍍過程的電解除油溶液, 即可 使用型 5升

### STEP1

Oxidization removal liquid. ready-to-use 1 L

去除氧化液, 即可使用型 1升

**Related products - powder form** 相關產品 - 粉末狀

**NEUT-SA** (1 kg) (1公斤) Neutralizing powder form 中和粉末狀 **SGR1P** (1 kg) (1公斤) \* Degreasing powder form 電解除油粉末狀 **SGR2USP** (1 kg) (1公斤) Ultrasonic degreasing powder form 超聲波除油粉末狀

# **PLATING MACHINERY**

The technology that makes your lab-life easier 使您的實驗工作更輕鬆的科技

LEGOR Plating Machinery Line is totally designed and made-in-Italy with the highest quality, as well as all its components. Every equipment is CE marked and rigorously inspected prior to shipment.

Precise voltage in all of our rectifiers grants excellent process results, while accurate temperature control system prevents troublesome overheating to plating baths.

Quality, flexibility and ease of use of every LEGOR machinery are the results of continuous research with one only goal: making the job easier for you.

Legor Group電鍍機器系列完全由意大利設計和製造,機器及其 所有部件擁有最高的質量。每台設備在出貨前都得到CE認證並 經過嚴格檢測。

我們所有整流器的精確電壓均可提供出色的工藝效果, 同時精 確的溫度控制系統可防止電鍍槽出現麻煩的過熱現象。

每台Legor Group機器的質量,靈活性和易用性,是我們不斷研 究下的結果,使其適用於不同電鍍工藝,目標只有一個:就是 讓你的工作更輕鬆。

\* Substances which are subject to the international regulations concerning transportation of dangerous goods 符合國際合險貨物運輸法規的物質

# **TABLE-TOP PLATING MACHINES**

# 坐枱式電鍍機

These pilot-plating machines are plating stations ready to perform any selected electroplating treatment. They are ideal to execute the finishing, sampling, and repair needs of laboratories and shops. as well as small and medium factories that need to perform professional electroplating operations on a miniature scale.

The step-by-step sequence from preparation to plating makes it easy even for a beginner to manage the process. The timer and the voltage can be programmed to work in a synchronized mode, limiting the possibility of over exposure or over plating.

這些小型電鍍機可以進行任何選定的電鍍處理。 他們非常適合執行實 驗室、商店的精加工、取樣和修復需求,以及中小型工廠需要在微型 規模上執行專業電鍍操作的需求。

從準備到電鍍的順序步驟使得即使是初學者也能輕鬆管理工序。 計時 器和電壓計可以編程在同步模式下工作,減少過度電鍍的可能性。

4 TANKS/1 L 4槽/1升

Code: 3007068

4 TANKS/1 L 4槽/1升

ECONOMIC VERSION

Code: 3007068E

### **Features**

- Pyrex glass tanks
- 1 Heated tank
- 12 Volt 25 Amp rectifier
- Size: 540 x 290 x 310 (h) mm
- Weight: 14 Kg
- Power tension: 220 V
- Platinized titanium anode included
- Timer not included

### 特點

- Pvrex燒杯電鍍機
- 1個加熱槽
- 整流器: 12V 25A
- 尺寸: 540 x 290 x 310 (高) 毫米
- 重量: 14 公斤 • 功率: 220 V
- 包括鉑金鈦陽極

### **Features**

- Pyrex glass tanks
- 1 Heated tank
- 12 Volt 10 Amp rectifier
- Size: 540 x 290 x 310 (h) mm
- Weight: 14 Kg
- Power tension: 220 V
- Platinized titanium anode included

### 特點

- Pyrex燒杯電鍍機
- 1個加熱槽
- 整流器: 12V 10A
- 尺寸: 540 x 290 x 310 (高) 毫米
- 重量: 14 公斤
- 功率: 220 V
- 包括铂金钛陽極
- 不包括計時器

# 4 TANKS/2 L 4槽/2升

Code: 3007051

**Features** 

Pvrex glass tanks

• 12 Volt - 25 Amp rectifier

• Platinized titanium anode

Power tension: 220 V

• Size: 625 x 290 x 310 (h) mm

1 Heated tank

Weight: 15 Kg

• Pyrex燒杯電鍍機

included

• 1個加熱槽

• 重量: 14 公斤

• 功率: 220 V

• 包括鉑金鈦陽極

特點

# 6 TANKS/2 L 6槽/2升

Code: 3007054

# 4 TANKS/5 L 4槽/5升

Code: 3007091

### Pvrex glass tanks

- 3 Heated tanks with agitation
- 12 Volt 25 Amp rectifier • Size: 935 x 290 x 310 (h) mm

**Features** 

- Weight: 20 Kg
- Power tension: 220 V
- 3 Platinized titanium anodes included

### 特點

### • Pyrex燒杯電鍍機

- 3個攪拌加熱槽
- 整流器: 12 V 25 A • 整流器: 12 V - 25 A • 尺寸: 540 x 290 x 310 (高) 毫米 • 尺寸: 935 x 290 x 350 (高) 毫米
  - 重量: 20 公斤
  - 功率: 220 V
  - 包括鉑金鈦陽極

### **Features**

特點

- Pvrex glass tanks
- 2 Heated tanks with agitation
- Cathode bar on a pivot system
- Back included

• Pvrex燒杯電鍍機

• 樞軸系統上的陰極棒

0-12 V/0-25 A 和 9-48 V/0-5 A

• 尺寸: 1050 x 400 x 500 (高) 毫米

• 2個攪拌加熱槽

• 包括電鍍架

• 重量: 40 公斤

• 功率: 220 V

雙整流器:

- Dual rectifier 0-12 Volt/0-25 A and 9-48 V/0-5 A
- Size:1050 x 400 x 500 (h) mm tanks
- Weight: 40 Kg • Size: 610 x 430 x 320 (h) mm Power tension: 220 V
  - Weight: 15 KG
  - Power Tension: 220V
  - Rectifier not included

accurate control

working station

### 特點

• 3個攪拌加熱槽

• 浸入式溫度計, 能精確控制溫度

**DLEGOR**®

6 TANKS/2 L

6槽/2升

Code: 3007300

Polypropylene - 聚丙烯

• 3 heated tanks with agitation

• Immersion temperature probe for

Recovery/Rinsing tank for each

Polypropylene construction and

**Features** 

- 每個工作區域配有回收/沖洗槽
- 聚丙烯結構的電鍍槽 • 尺寸: 610 x 430 x 320 (高) 毫米
- 重量: 15 公斤
- 功率: 220V • 不包括整流器







40 Jewelry Plating

6槽/2升電鍍機 整流器不包括在內

# STANDARD PLATING MACHINES

# 標準電鍍機

**E-COATING MACHINERY** 雷泳塗層機器



Code: 3018007



Code: 3004052



### 整流器

### **Features**

- 0-20 Ampere / 0-15 V
- Digital display • Timer
- Power tension: 220 V

### 特點

- 0-20 A / 0-15 V
- 數字顯示 計時器
- 功率: 220 V



Code: 3009012

Digital oven with grids for

用於電泳塗層的電子烤箱 (有格框)

• Dimensions mm: 640 x 600 x 640

Heating power: 3400 W, 230 V

• Grid dimensions mm: 460 x 330

• Distance between grids: 80 mm

With temperature display

• 尺寸: 640 x 600 x 640毫米

• 加熱功率: 3400 W. 230 V

• 網格尺寸: 460 x 330毫米 • 網格之間的距離: 80毫米

E-Coating

**Features** 

• Weight: 46 kg

特點

Reverse system

• 重量: 46 公斤

•帶有溫度顯示

**BEAKERS** 

3007074

Pyrex beaker 1 L

3007062

Pyrex beaker 2 L

3007079

Pyrex beaker 5 L

Pyrex燒杯 5升

Pyrex燒杯 2升

Pyrex燒杯 1升

燒杯

Code:

反向系統

Rectifier for E-Coating

用於電泳塗層的整流器

### **Features**

- 0-10 Ampere / 10-48 V
- Digital display
- Timer
- Power tension: 220 V

### 特點

- 0-10 A / 10-48 V
  - 數字顯示
  - 計時器
  - 功率: 220 V

# **CLIPS AND WIRES** 夾子和電線



OTHER ACCESSORIES

其他配件

### **RBCLIPSKIT**

Red/black crocodile clips with wires for plating connections

用於電鍍連接的帶電線鱷魚夾(紅 色/黑色)

### Spare codes:

### **RBCLIP**

Red/black crocodile clips 紅色/黑色鱷魚夾

### **REDCAVMP**

Red wire 紅色電線

### **BLACKCAVMP**

Black wire 黑色電線

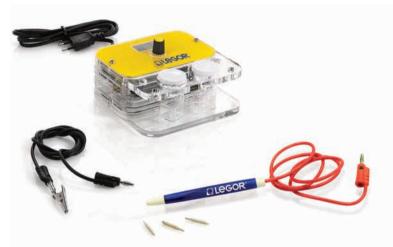


# PEN PLATING SYSTEM

# 筆電組合

Pen Plating or stylus plating is an electro-deposition process designated to plate small touch-up areas or to perform small repair work. Depending on the area to be treated, detail work is difficult to do with immersion-plating solutions, since the time required to apply plating masking can lead to a loss in productivity. Pen plating is a perfect solution to this problem. LEGOR pen plating machine and related tools have been specifically designed to get optimum results with this type of technology.

筆電銠是一種電鍍工藝,設計用於鍍制微細面積或進行細小的修復工 作。因為水鍍難以處理部分區域和一些產品細微的問題,操作起來十 分費時、因此需要新的電鍍工藝去改善這方面的生產力缺失。 筆電鍍是解決這個問題的完美方案。 LEGOR的筆電機和相關工具經 過專門設計,通過這種技術來達至最佳效果。



### Code: PENPLATSYS

Pen plating system 筆電組合

### **Features**

- · Accurate digital voltage control
- Easy to use
- Affordable price
- Materials resistant to both acidic and alkaline solution
- 110/220 V 50/60Hz

### 特點

- Voltage range: 1.2-12.0 V

- 精確的數字控制電壓 • 容易使用
- 價格合理
- 採用抗酸鹼溶液的材質 • 110/220 V - 50/60 Hz

**DLEGOR**®

- 電壓範圍: 1,2-12,0 V



### Code: PENPLAT

Plating pen with platinum collar 電鍍筆與鉑金芯

- Use with any type of rectifier
- Platinum collar for superior and consistent deposition
- Long lasting and corrosion resistant
- 可與任何類型的整流器一起使用
- 鉑金芯可提供出色而一致的沉積效果
- 持久耐用和抗腐蝕



### Code: PENGRAF

Graphite applicator for pen plating 用於筆電鍍的石墨塗敷器

- Ideal for application on larger surface areas
- 適用於較大表面面積

Code: PENBLACK

帶黑色電線的鱷魚夾

Black wire with crocodile clip



White thin felt tip

Code: **3024010** 500 pcs/支 Code: 3024011 25 pcs/支

White normal felt tip 白色筆芯



Code: 3004020

PENGRAF筆頭



Code: **3024008** 500 pcs/支

Code: **3024009** 25 pcs/支

Code: 3024012 500 pcs/支 Code: 3024013 25 pcs/支

> Brown thin felt tip 棕色幼筆芯



Code: **3024014** 500 pcs/支 Code: 3024015 25 pcs/支

Double ended brown felt tip 雙頭棕色筆芯



PENGRAF felt

# **ANODES**

# 陽極

### STAINLESS STEEL/不銹鋼



Code: 3004019

Code: 3007086



**STANDARD** 

Code: 3007019 20 x 15 cm

### PLATINAZED TITANIUM/鉑金鈦

The anode completes the electrolytic circuit in electroplating. In

precious metal plating, a refractory metal such as titanium is typically coated with platinum, by creating a corrosion resistant element that allows for an extremely pure plating deposit. The quality of the plating

在電鍍過程中,需要通過陽極去完成電解回路。 在貴金屬電鍍中,難

熔金屬(如鈦)通常會鍍上鉑金來形成一種耐腐蝕材質,從而得到非

常純淨的電鍍沈積層。鍍層的質量高度依賴於所用陽極的質量。

deposit highly relies on the quality of the anode used.



### **STANDARD**

Code: 3007060 4 x 10 cm

Code: 3007090 8 x 10 cm

Code: 3004041

10 x 10 cm

Code: 3004011 10 x 20 cm

Code: 3004058

10 x 40 cm

Code: 3004061 10 x 60 cm



**CIRCULAR** 

for 1 liter beaker

for 5 liters beaker 適用於5升燒杯

適用於1升燒杯

Code: 3007096

Code: 3007097

**ON DEMAND** 

Platinized titanium anode

可定制尺寸的鉑金鈦陽極

with customizable dimensions

## **FOR LEGOR PILOT PLANTS**

Code: 3004057 for 1 liter beaker 適用於1升燒杯

for 2 liters beaker 適用於2升燒杯

for 5 liters beaker 適用於5升燒杯

### MIXED OXIDES/混合氧化物



### **FOR LEGOR PILOT PLANTS**

Code: **3004012** 

5 x 10 cm

Code: 3004051 10 x 20 cm

### **STANDARD**

Code: **3024032** 10 x 5 cm

Code: 3025003 10 x 40 cm

Code: 3025004 10 x 60 cm

# **OTHER ACCESSORIES** 其他配件



In order to achieve optimal working conditions while plating in both small-medium and larger scale, Legor Group offers to all its Customers different accessories according to the most different needs: filter cartridges, magnetic drive stirring pumps, heaters, racks and other accessories which complete our product offer.

為了在中小規模和更大規模的電鍍中達至最佳工作條件, Legor Group能夠 根據最不同的需求為其所有客戶提供不同的配件:濾芯,磁力驅動攪拌泵, 加熱器,機架和其他經過我們產品報價的配件。

### PLATING RACKS 電鍍架



Circular rack with hooks 帶鉤的圓形電鍍架

Code: 3007098 75 mm (diam) / 12 hooks 75 毫米 (直徑) / 12個鉤



Rectangle plating rack with hooks 帶鉤的矩形電鍍架

Code: 3007034 150 mm L / 10 hooks 150 毫米長/ 10個鉤

Code: 3007036 200 mm L / 18 hooks 200 毫米長/ 18個鉤



Extended length plating rack with hooks 帶鉤的延長電鍍架

Code: 3007099 33 hooks 33個鉤



Triangular shaped plating rack 三角形電鍍架

Code: 3007033 150 mm L / for chains 150毫米長/ 適用於電鍍鍊子

Code: 3007035 200 mm L for chains 200毫米長/ 適用於電鍍鍊子

# OTHER



Code: 3007057

5 Hooks copper wire rack 5鉤銅線架



Rhodium title visual analysis kit 銠成分視覺分析套件

Code: 3007150 Fast tarnish test kit 快速褪色測試套件

Carbon filtration kit for small rhodium

其他



Code: 3007153

Code: **3007100** 

用於小型銠電鍍液的碳過濾套件



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# **LEGOR GROUP NUMBERS**





40%
Worldwide gold jewels
produced with LEGOR alloys
全球使用 Legor Group
補口生產珠寶的百分比







# **4 SPECIALIZATION FIELDS**

## 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。

## 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。

JEWELRY • FASHION • INDUSTRIAL

# **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



