

**JEWELRY  
PLATING**
**GF24CF**
**READY TO USE FLASH PLATING BATH WITHOUT CYANIDES 1 G/L PURE  
GOLD COLOR**
**DESCRIPTION**

- Totally Cyanide Free;
- Uniformity of color deposition;
- Good stability of the solution
- Easy to maintain
- Completely free from toxic chemicals
- Good hardness and wear resistance

GF24CF is a gold electrolyte without cyanides intended for bath plating, which deposits a uniform, shiny layer in a 24 kt color. The color is that of pure gold as no other metals are used as an alloy in the deposit. GF24CF is intended for decorative use therefore has been designed for flash plating permitting a deposition thickness of up to 0.2 micron. Besides to be 100% cyanide free, this yellow gold plating solution is also Nickel, Lead, and Cadmium free, thus its shipment does not require any particular or specific rule.

**DEPOSIT DATA**

|                                   |                      |
|-----------------------------------|----------------------|
| <b>Hardness (HV 0,01)</b>         | 160 - 300            |
| <b>Density (g/cm<sup>3</sup>)</b> | 19.0                 |
| <b>Thickness (µm)</b>             | 0.1 – 0.2 µm (flash) |
| <b>Appearance</b>                 | Shiny                |
| <b>Color</b>                      | 24 kt Yellow Gold    |

**PRODUCT FORM**

|                                  |              |
|----------------------------------|--------------|
| <b>Metal concentration (g/l)</b> | 1 g/L (Au)   |
| <b>Form</b>                      | Ready to use |
| <b>Material color</b>            | Pale orange  |
| <b>Storage time</b>              | 1 year       |
| <b>Volume</b>                    | 1 liter      |



| PRODUCT USAGE                             | RANGE               | OPTIMAL |
|---|---------------------|---------|
| <b>Voltage (V)</b>                        | 1,5 – 1,8           | 1,6     |
| <b>Current density (A/dm<sup>2</sup>)</b> | 0,3 – 0,8           | 0,5     |
| <b>Working temperature (°C)</b>           | 45 - 65             | 50      |
| <b>Exposure time (min)</b>                | 1 - 5               | 3       |
| <b>pH</b>                                 | 10 - 11             | 10,5    |
| <b>Cathode efficiency (mg/Amin)</b>       | 4 - 8               | 6       |
| <b>Anode/cathode ratio</b>                | 2:1 - 4:1           |         |
| <b>Anode type</b>                         | Platonized titanium |         |
| <b>Agitation</b>                          | Moderate            |         |

| METAL CONCENTRATION | RANGE     | OPTIMUM |
|---------------------|-----------|---------|
| <b>Gold (Au)</b>    | 1.0 – 0.6 | 1.0     |

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**COLOR COORDINATES**

|           |      |
|-----------|------|
| <b>L</b>  | 88.5 |
| <b>a</b>  | 6.3  |
| <b>b</b>  | 34.8 |
| <b>c</b>  | 35.4 |
| <b>YI</b> | 64   |

*On yellow underneath base. Those color coordinates has to be intended as pure reference. The same may change according with the working used conditions and according with the color and shape of the used substrate as well as of the used colorimeter*

**SOLUTION PREPARATION**

GF24CF is a ready-to-use plating solution coming with a concentration of 1 g/l of fine gold. For this reason the solution can be poured inside the working tank with no any preliminary preparation steps.

While doing pre treatments, plating and post treatments we always recommend the usage of deionized – pure water.

**REQUIRED EQUIPMENT**

In general, for any plating solution, it is more practical to use Pyrex glass containers for quantities up to 5 liters.

On the contrary, for larger quantities of plating solution it is best to install PTFE or polypropylene plants equipped with:

- a current rectifier with an ampere meter and voltmeter, with low residual AC (ripple <5%).
- ampereminutecounter
- platinum-coated titanium anodes, coated with 1.5 - 2.5  $\mu$  of platinum.
- magnetic drive filter pumps with 5-15  $\mu$ m cartridge (before their use boil and wash them with demineralized water in order to prevent any possible organic contamination for the plating solution).

**BATH MAINTENANCE**

The plating solution is calibrated for small baths (until 5 liters) and it has to be used with no replenisher until exhaustion additions.

In any case it is advisable to not go down with respect the 80% of the initial concentration to maintain optimum results with GF24CF plating solution.

**PRE TREATMENT**

For maximum performance the items to be worked should be treated, before plating, by following the common pre - cleaning steps involving: ultrasonic cleaning; washing treatments and special cleaning agents for both electrolytic degreasing treatment and neutralization.

To achieve the best results the use of **SGR1** solution - see related technical sheet - is recommended for what concern the electrolytic step; while for the neutralization it is suggested the use of **NEUT1** – see related technical sheet – .

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The excess of electrolyte dragged out together with the gilded pieces hanged in rack has to be removed as soon as possible. For this reason after a rinse step inside a tank filled of static pure water follow with a washing operation in pure running water tank. Then, after washing carefully dry.

**WATER PROCESS PURITY**

To prevent contamination of the bath during plating, use demineralized water with a conductivity of less than 3  $\mu\text{S}/\text{cm}$  (containing no traces of any organic compounds, Silicon or Boron). To achieve maximum deposit quality we recommend using our high-grade purity **WATER**.

**SAFETY INFORMATION**

The pH of GF24CF is slightly alkaline, not too much aggressive. Nevertheless we recommend caution while using the product and protections for the skin, eyes and mucous. The use of laboratory glasses, gloves and vest are strongly suggested. Classification and designation are noted in the Material Safety Data Sheet (according to the European legislation). The safety instructions and the instructions for the environmental protection have to be followed in order to avoid hazards for people and environment. Please consider the explicit details in our Material Safety Data Sheets.

**DISCLAIMER**

*All recommendations and suggestions in this bulletin concerning the use of our products are based upon tests and data believed to be reliable. Since the actual use by others is beyond our control, no guarantee expressed or implied, is made by Legor Group, its subsidiaries or distributors, as to the effects of such use or results to be obtained, nor is any information to be construed as a recommendation to infringe any patent.*