LEGOR®

JEWELRY PLATING

TECHNICAL SHEET

# GT4PINK

READY-TO-USE THICK PLATING BATH 4 G/L PINK GOLD 18 KT COLOR

## DESCRIPTION

- Pink gold deposit
- Thickness up to 3 micron
- 18kt alloy deposition
- Nickel, Cobalt and Cadmium free

GT4PINK is the first 18 kt pink thickness electrolyte available on the market in an acidic process. This system is particularly indicated for decorative applications which require hard gold or thickness plating in a pink shade while reaching thickness up to 3 micron. The gold is co-deposited with copper to generate an alloy which is 75% (18 kt) gold by title granting a significant cost savings. With a 400 HV hardness the layer is durable and tightly nit at the microstructure. The majority of Gold/Copper systems available on the market operate on a chemical principle which requires a constant balance of the copper/cyanide ratio in order to maintain the alloy and color of the electrolyte. This requires routine maintenance and adds significant management costs to the system use. Our system is acidic, simplifying the maintenance to that of other acid gold electrolytes, making it the easiest system of its kind to manage on the market today.

| PRODUCT FORM | |
|---|---|
| **Metal concentration (g/l)** | 4 g/l (Au) |
| **Form** | Liquid |
| **Material color** | Blu |
| **Storage time** | 2 years |
| **Volume** | 1 lit er |

| DEPOSIT DATA | |
|---|---|
| **Purity (%)** | 75 |
| **Hardness (HV 0,01)** | 400 - 450 |
| **Density (g/cm3)** | 16.0 |
| **Thickness (µm)** | 0.2 – 3 |
| **Appearance** | Shiny |
| **Color** | Pink |

| Color coordination | |
|---|---|
| **L** | 83.9 |
| **a** | 9.6 |
| **b** | 14.7 |
| **c** | 17.6 |

| OPERATING DATA | RANGE | OPTIMAL |
|---|---|---|
| Voltage (V) | 1.0 – 3.0 | 1.8 |
| Current density (A/dm$^2$) | 0.3 - 0.8 | 0.7 |
| Working temperature (°C) | 40 - 50 | 40 |
| Exposure time (min) | 1 - 20 | 8 |
| pH | 4.8 – 5.2 | 5.0 |
| Cathode efficiency (mg/Amin) | 50 - 55 | 50 |
| Deposition rate (µm/min) | 0.2 at 0.7 A/dm$^2$ | 0.2 at 0.7 A/dm$^2$ |
| Solution density (Bé) | 12 - 16 | 14 |
| Anode/Cathode ratio | 3-4:1 | 4:1 |
| Anode type | Titanium platinized or mixed oxides | |
| Agitation | Moderate | |

| Metal concentration (g/l) | Range | Optimal |
|---|---|---|
| **Gold (Au)** | 3.5 - 4.5 | 4.0 |
| **Copper (Cu)** | 1.8 - 2.2 | 2.0 |



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## PREPARATION

**GT4PINK** is a ready-to-use plating bath at the concentration of 4 g/l of gold. No preparation is required while filling the working tank.

## EQUIPMENT

**Working vessel materials:**

- Pyrex glass / PVC / polypropylene
- Power supply: DC current rectifier with low residual AC(<5%)
- Heating element
- Anode type: Platinized titanium [1.5-2.5 µm] or stainless steel

**For larger bath volumes:**

- Magnetic driven filter pumps with 5-15 µm cartridge (before use, boil and wash the cartridges with demineralized water for 3 hours to prevent organic contamination)
- Amp/min counter

## PRE TREATMENT

**GT4PINK** can be deposited directly onto Palladium, Nickel, and precious metal substrates. An intermediate deposit of Palladium or Nickle is required over Silver, and all alloys containing copper to prevent copper migration. An intermediate deposit or precious metal plating strike is necessary before depositing onto Tin, Lead, Zinc, Cadmium, Aluminum and Iron.

## POST TREATMENT

Electrolyte should be removed from the surface of the items hanged on the rack as quick as possible. Rinse off the bath rests in a recovery tank (still rinse) then wash in circulating deionized water (washing tank) and finally dry.

## WATER PURITY

To prevent contamination of the bath both during its preparation and any subsequent replenishing operations, use demineralized water with a conductivity of less than 3 µS/cm (containing no traces of organic compounds, Chlorine, Silicon, or Boron).

## BATH MAINTENANCE

It is necessary to maintain the bath according to the optimal operating conditions by the addition of a gold solution (obtained by dissolving salts of GOLD (I) POTASSIUM CYANIDE 68.3% in hot demineralized water) and some units of REPLENISHER.

The REPLENISHER units contain alloying metals, additives, and brighteners necessary for maintaining the electrolyte at optimal parameters. Replenishment is pre-calibrated based on Amp/minute consumption.

Maintenance schedule:

Every 900 Amp/min. restore with:

50 grams of gold salt to 68% AUS683
1 liter of replenisher K18R

The solution contains small amounts (ppm) of iron (Fe) which is mainly consumed by drag-out so it is important to keep it at the optimum concentrations, in the range of 50 – 100 ppm by the addition of standard replenisher K18R.

In addition to REPLENISHER, K18Rcommon system recovery products, may be necessary to maintain the electrolyte over the long term. The latter are listed here below:



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• K18BR, brightener useful in the event that the deposit lacks brilliance or if cloudy effect is visible at the medium-low current density areas.

• K18M, wetting agent to increase the wettability of the pieces.

• K18SCA and K18SCB, acidic and alkaline conductive salts respectively to increase the density of the bath in case it is too low or to adjust the pH in case it is not too far with respect tot the reference values range.

• K18A, liquid additive to be used in the case of a hazy deposit

## SUPPLEMENTARY INFORMATION

For maximum performance and in particular in terms of resulting color do not use an excessive agitation. A moderate agitation of the pieces to be plated will be sufficient. For larger volumes it is sufficient the use of a magnetic drive filter pump with a not too much high capacity.

## SAFETY INFORMATION

Being an acidic solution, the electrolyte is an irritant to the skin, eyes and mucous membranes. Caution should be exercised when using the product, avoiding contact with the eyes and skin. Use gloves and safety goggles. Keep away from acid based chemicals. For further information please refer to the relative MSDS.

Regarding the shipment of GT4PINK we remind that it is classified as dangerous good with class 9: ENVIRONMENTALLY DANGEROUS GOOD. For further information please refer again to the related MSDS on paragraph 14.

## DISCLAIMER





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