


**JEWELRY
PLATING**
GT4A

24 KT YELLOW GOLD MICRON SOLUTION FOR BATH PLATING 4 G/L (READY-TO-USE)

GENERAL INFORMATION

GT4A is a mildly acidic gold plating electrolyte that deposits a color which is near that of pure 24 kt gold. The additional metal which is co-deposited with the gold as an alloy allow for an achievable thickness of 3 micron in a layer which remains 99.7% gold by weight. The wider range of obtainable thicknesses combined with the ability to solder the plating deposit, allow for this electrolyte to be used in both technical and decorative applications.

Product form

Metal concentration	4 g/l (Au)
Solution form	Liquid
Plating solution color	Red
Storage time	2 years
Volume	1 liter

Deposit data

Solution appearance	Shiny
Purity (%)	99.7
Hardness [HV 0.01]	155-220
Density [g/cm ³]	17.0
Plating solution color	24 kt Gold Yellow
Thickness range [μm]	0,5 - 3



Operating data	RANGE	OPTIMAL
pH	3.2 - 3.8	3.5
Voltage [V]	3.5 - 4.5	4.0
Current density [A/dm ²]	0.5 - 10	4.0
Working temperature [°C]	35 - 45	40
Exposure time (sec)	30 - 180	120.0
Cathode efficiency [mg/Amin]	20	
Anode type	Platinized titanium or mixed oxides	
Agitation	Moderate	

Color coordinates

L*	82.0
a*	8.1
b*	33.6
c*	34.6

Metal concentration (g/l)	Range	Optimal
Gold (Au)	2.0 - 4.0	4.0
Cobalt (Co)	1.0 - 1.5	1.25

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PREPARATION

GT4A is a ready-to-use plating bath at the concentration of 4 g/l of gold. No preparation is required while filling the 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

GT4A can be deposited directly onto Palladium, Nickel, and precious metal substrates. An intermediate deposit of Palladium or Nickel 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 as quick as possible. Rinse off the bath rests in a recovery rinse (still rinse). Rinse the parts in circulating deionized water and dry.

WATER PURITY

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

BATH MAINTENANCE

This process is easy to maintain, but will initially requires frequent analytical controls in order to obtain a correct concentration level of all the metals present. Metal concentrations greatly influence the final deposited color; therefore, an incorrect management of these parameters shall inevitably lead to unwanted colors.

SUPPLEMENTARY INFORMATION

Agitation: 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.

pH: The solution pH should be held at the nominal value; it is possible to correct it by adding a contrasted solution of cytric acid to lower it, or potassium hydroxide (KOH) to raise it.

Temperature: GT4A gives excellent performance in a temperature range between 35°C and 45°C.

Drag-out: In case a strong drag-out is present, the solution density should be brought back to its initial value by adding GT-SC conductive salts, knowing that 20 g/l raise the density of 1 Bè.

Info: All the operative parameters influence the colour deposited, especially temperature and pH. It is strongly recommended to consult our Technical Customer Service before modifying the nominal operative conditions.

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.

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, is made by Legor Group, its subsidiaries of 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.

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RELATED PRODUCTS LIST**Prodotto Complementari**

AUS683	Gold (I) potassium cyanide 68.3%
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