
AUROMEX®

TECHNICAL

INSTRUCTIONS

DATA SHEETS

AUROMEX P14K **DECORATIVE 14K GOLD PROCESS**

INTRODUCTION

AUROMEX P14K is a slightly alkaline rose gold electroplating process that produces 14 karat deposits. The process is specially designed for fine jewelry finishes, watch industry and spectacle frame industry.

AUROMEX P14K produces extremely ductile, fully bright deposits with a uniform color and long durability. High Hardness in the range of 260-300 Vickers makes these coatings hard wearing with excellent resistance to tarnishing and corrosion. **AUROMEX P14K** process is extremely stable, easy to operate and will deposit stable color within 40 seconds.

PROCESS ADVANTAGES

- * Economic
- * Uniform rose gold color.
- * High resistance to tarnishing and corrosion.
- * Uniform distribution, thickness.
- * Exact matching, reproducibility.

DEPOSIT CHARACTERISTICS

Karat	14-16 K.
Hardness	260-300 mHv20g
Specific gravity	14.5-15.5 g/cm ³
Color of deposit	Rose gold color
Deposit Composition	Gold-Copper-Nickel-Cadmium alloy.

P-1

AUROMEX®

CHEMICALS CORPORATION

UNIT NO. 2, 4/F., INTERNATIONAL PLAZA, 20 SHEUNG YUET ROAD, KOWLOON BAY, KOWLOON, H.K.
TEL: 2796 7238 FAX: 852-2796 7117

EQUIPMENT REQUIRED

Tank	Polypropylene containers or steel containers lined with a suitable plastic material such as Tygon, polyvinyl chloride, or koroseal are recommended. Glass tanks may also be used
Rectifier	A standard DC power supply with an ampere output capacity sufficient to meet the requirements of the plating operation, should be used.
Filtration	Solution clarity should be maintained by continuous filtration through double cotton cartridges
Agitation	Moderate agitation is necessary to maintain metal distribution. Mechanical (radial) agitation at 8 m/min may be used, combined with a jet stream equipped with special diffusers.
Temperature	Solution temperature should be maintained at optimum by thermostatically controlled stainless steel or titanium immersion heaters.
Anodes	Platinized titanium ruthenium anodes may also be used.

PLATING BATH PREPARATION

AUROMEX P14K make up agent is supplied in unit form. Each unit contains all the products required to make 10 liters of solution. It does not contain gold. The following instructions are for the preparation of 10 liters of solution.

Materials required :

Potassium Gold Cyanide (68.3%)	14.6 grams
AUROMEX P14K Make Up Concentrate (Code 1400)	2 liters
AUROMEX P14K ACID	
Potassium Hydroxide	

Procedures :

- 1) Fill to a clean plating tank 2/3 of the required final volume with distilled or deionised water.
- 2) Add in the 2 liters **AUROMEX P14K** Make Up Conc. (Code 1400) stir until completely mixed.
- 3) Check and adjust pH to 11.0 with 10% potassium hydroxide or **AUROMEX P14K ACID**.
- 4) Dissolve the gold potassium cyanide (68.3%) in a separate quantity of demineralised or distilled water and then add to the above solution.
- 5) Stir and check the pH again if necessary.
- 6) Dilute the solution to 10 liters with demineralised or distilled water, the solution is then ready to use.

OPERATING CONDITIONS

	<u>UNIT</u>	<u>RANGE</u>	<u>OPTIMUM</u>
Gold metal content	g/l	0.5 - 1.5	1.0
Anode to Cathode ratio		1 to 2	
Cathode current density	A/dm ²	4.4 - 5.5	4.95
Voltage	Volts	4 – 7	5.0
pH electrometric at 60°C		10 – 12	11
Temperature	°C	63 – 70	70
Cathode Agitation	m/min	8 – 12	12
Plating rate	mgm/Amp-min	60 – 65	65

BATH MAINTENANCE

The gold metal content should be maintained at the recommended concentration (0.5 to 1.5 g/l) with periodic additions of gold potassium cyanide 68.3% .

Gold metal replenishment :

Replenishment should be based on regular analysis is the best method of control but replenishment can be made according to ampere-minutes consumed.

Amp-min
2300

Gold consumed
100 grams

For every 100 grams gold metal replenishment(147 grams 68.3% PGC) add one units 500 mls. **AUROMEX P14K** replenishment.

As drag out losses cannot be accounted for accurately, analytical checks should be preformed periodically.

pH Adjustment : This should be measured daily, using a meter, at the operating temperature of the bath. In order to maintain the pH value of **AUROMEX P14K** between 10-12 electrometric, proceed as follows:-

To raise pH, use 10% w/v solution of potassium hydroxide (chemically pure)

To lower pH, add **AUROMEX P14K Acid**.

PACKING

AUROMEX P14K Make Up Conc.	2 liter
AUROMEX P14K Replenishing Brightener	500 mls.
AUROMEX P14K Conducting Salt	10 or 20 kgs/pack
AUROMEX P14K Acid Solution	1,2 or 5 liter/bot.
AUROMEX P14K Copper Concentrate	1,2 or 5 liter/bot.
AUROMEX P14K Cadmium Concentrate	1,2 or 5 liter/bot.
AUROMEX P14K Nickel Concentrate	1,2 or 5 liter/bot.