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# AUROMEX®

TECHNICAL

INSTRUCTIONS

DATA SHEETS

## **DECORFIN 24KC**

### **DECORATIVE GOLD PLATING PROCESS**

#### **INTRODUCTION**

**DECORFIN 24KC** is a new mild acid / Neutral electrolyte cobalt hardened gold process, developed to obtain flash deposits of a 24Kt gold colour for low priced costume jewellery and similar decorative wear. The formulation produces fully bright, ductile and high corrosion and wearing resistance deposits.

**DECORFIN 24KC** is a extremely economic process, it has a very high tolerance to metallic contamination and can operate at low gold concentration to minimise dragout losses. The process is ideal for both still vat and barrel plating.

#### **PROCESS FEATURES**

- \* Economic, easy to operate
- \* Uniform colour, distribution
- \* Low gold concentration, less drag out loss
- \* High tolerance to metallic contamination

#### **DEPOSIT CHARATERISTICS**

Appearance : Mirror bright, lustrous deposit  
Karat : 23.5 Kt.  
Hardness : 120 – 160 mHv20g  
Specific Gravity : 17.5 – 18.5

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## EQUIPMENT REQUIRED

Tank	Polypropylene or PVC glass fibre reinforced tanks are suitable.
Heater	Heating is required and temperature regulation is essential. Therefore, thermostatically controlled immersion heaters are recommended.
Rectifier	A standard D C power supply should be used with an ampere output capacity sufficient to meet the requirements of the plating operation. The power supply should be equipped with a Voltmeter, ammeter and stepless control for accurate regulation of the current.
Filtration	The solution should be filtered continuously through polypropylene or cotton cartridges to maintain clarity.
Agitation	Moderate to vigorous agitation is necessary to maintain uniform metal distribution. Jet stream and mechanical agitation at 7-14 m/min may be used.
Anodes	Insoluble anodes should be used, Platinum - Titanium or Ruthenium - Titanium anodes with an area sufficient to provide a maximum current density of 0.25 A/dm <sup>2</sup> are recommended.

## PREPARATION OF SOLUTION

The following instructions are for the preparation of 10 litres of Electrolytes.

Materials required :

Potassium Gold Cyanide (68.3%)	14.7 grams
<b>DECORFIN 24KC</b> Make Up Salt (Code 22000)	1.5 kg
<b>DECORFIN 24KC</b> Make Up Brightener (Code 22001)	100 mls
<b>DECORFIN</b> Acid (Code 2090)	
Potassium Hydroxide	

### Make Up Procedure

1. Pour 6 litres of demineralised or distilled water into the clean plating tank.
2. Add in the 1.5 kgs Make Up Salt (Code 22000), stir until completely dissolved and then add the 100 mls. Make Up Brightener (Code 22001) and stir.
3. Check and adjust pH to 7.0 with 10% potassium hydroxide or **DECORFIN** Acid.
4. Dissolve the gold potassium cyanide in a separate quantity of demineralised or distilled water and then add to the above solution.
5. Stir and check the pH again. Adjust to pH 7.0 if necessary with **DECORFIN** Acid or potassium hydroxide.
6. Dilute the solution to 10 litres with demineralised or distilled water. The solution is then ready to use.

## OPERATING CONDITIONS

	<u>Unit</u>	<u>Range</u>	<u>Optimum</u>
Metallic gold content	g / l	0.5 – 1.5	1.0
pH electrometric		6.5 – 7.5	7.0
Temperature	°C	40 – 70	60
Cathode current density	A/dm <sup>2</sup>		
Still Vat Platin		0.5 – 1.2	1.0
Barrel Plating		0.2 – 0.4	0.2
Density	°Be	8 – 20	16
Anode : Cathode ratio, Vat		3 : 1 – 5 : 1	4 : 1
Barrel		2 : 1 – 3 : 1	2 : 1
Agitation		vigorous	vigorous
Plating rate	mgm/Amp-min	25 – 50	35

## BATH MAINTENANCE

Gold metal content of the solution should be maintained at the recommended concentration (0.5 - 1.5 g/l) by periodic additions of gold potassium cyanide 68,3%. Replenisher Brightener is supplied as a liquid in units of 100 mls. One unit contains all the necessary agents to be added with the appropriate quantity of gold salts corresponding to 100 grams of gold metal. Replenishment should be based on regular analysis but optimum operating conditions, **DECORFIN 24KC** process deposit metal at the following rates

Amp-min	Gold consumed
2850	100 grams

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

For every 100 grams gold replenishment (147 grams 68.3% PGC) add one units (100 mls) **DECORFIN 24KC** Replenisher Brightener (Code 22005).

Conductivity : Specific gravity of the solution should be maintained between 8-20 Baume. If for any reason excessive drag out occurs, and the specific gravity of the solution drops below 10° Be, conducting salts (Code 22095) should be added to the solution. For every 16 g/l addition of this conducting salt will increase 1° Be at 45°C.

pH adjustment : The pH of the solution will rise slowly during use and should be checked Periodically. To lower the solution pH by addition of **DECORFIN** Acid. To increase pH by addition of 10% w/v potassium hydroxide.