

# DECRAGOLD RC 100

## INTRODUCTION

Decragold RC 100 is one of a series of decorative gold plating processes specially formulated to give improved deposit distribution.

The process produces deposits of consistent rich gold colour and is suitable for rack and barrel plating, and for flash or heavy (5 $\mu$ ) deposits.

## BENEFITS

Excellent throwing power - reduced deposit thickness at high current densities.  
- significant gold savings.

Consistent deposit colour.

Ease of control.

## SOLUTION MAKE-UP

Decragold RC 100 is supplied ready for use at the gold concentration suitable for the application (See NOTES).

## INSTALLATION

The following cleaning and leaching procedure should be followed before installing a Decragold RC 100 Solution.

1. Thoroughly wash the tank with clean water.
2. Leach overnight at 50-60°C with a 50g/L solution of citric acid.
3. Wash out tank thoroughly with clean water then add the Decragold RC 100 solution.
4. Heat to operating temperature.

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**OPERATING CONDITIONS**

	BARREL	RACK
Gold Concentration	1-3g/L	4-6g/L
Cobalt Concentration	1.5g/L	1.5g/L
Cathode current density	0.1-0.6 A/sq.dm.	0.5-2.0 A/sq.dm.
Anode current density	0.25 A/sq.dm.	0.25 A/sq.dm.
Temperature	30-40°C	30-40°C
pH	4.5-5.0	4.5-5.0
Density	15°Be (S.G. 1.115 min)	15° Be (S.G. 1.115 min)
Plating rate	SEE NOTES	

**EQUIPMENT**

Tanks	Moulded polythene or PVC
Anodes	Platinised titanium
Agitation	Solution movement
Filtration	Glandless all plastic construction capable of 3-4 turn-overs/hour through a 5µ polypropylene cartridge free of winding lubricant.

**MAINTENANCE AND CONTROL**

The solution should be regularly analysed for gold and cobalt and kept within 5% of the optimum concentrations.

The gold and cobalt concentrations will be approximately maintained by the following additions every ampere-hour:

3gm gold as Potassium Gold Cyanide  
7.5ml/ Decragold RC 100 Replenisher

These materials are supplied in Units of Decragold RC 100 Replenishment, each Unit consisting of:

100gm gold as Potassium Gold Cyanide  
250ml Decragold RC 100 Replenisher

Specific gravity	Maintain the solution density at 15° Bé (S.G. 1.115). To raise the density add Decragold RC 100 Conductivity Salts (a 10g/L addition will raise the density approximately 1° Bé).
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pH Maintain the pH at 4.5-4.9 by additions of Decragold RC 100 Acid Adjuster (the pH will increase with electrolysis). A 5ml/L addition will reduce pH by 0.1. If it is necessary to increase the pH a 25ml/L addition of a 20% w/w potassium hydroxide (lab. reagent grade) will increase the pH by 0.1.

**NOTES ON THE USE OF DECRA GOLD RC 100**

Gold concentration	For heavy deposits (1-5 $\mu$ ) the solution should be used at 5g/L gold; for flash deposits (0.1 - 0.5 $\mu$ ) the gold concentration can be reduced to 1g/L.
Plating rate	This can be increased by: a. increasing current density. b. increasing pH. c. increasing temperature. d. increasing gold concentration. eg. in rack plating at 5g/L gold, 1A/sq.dm, pH 4.6, 40°C - 1 $\mu$ in 4 minutes in barrel plating at 1g/L gold, 0.1A/sq.dm, pH 4.6, 40°C, - 1 $\mu$ in 30 minutes
Current density	The process has been formulated so that efficiency decreases as current density is increased, thereby improving deposit distribution. Higher gold concentrations will allow the use of higher current densities at increased efficiency. Consult the PMD Technical Department for the optimum gold concentration for a specific application.

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**DISPOSAL**

Dispose of in accordance with local authority requirements.

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## **PRODUCT FAMILIES**

The following products or families of products are referred to in this data sheet:

<u>Product Name</u>	<u>Product Number</u>
Decragold RC 100 RTU	037049
Decragold RC 100 Base Solution	037048
Decragold RC 100 Replenisher Unit	047052
Decragold Conductivity Salts	060018
Decragold Acid Adjuster	067028
Gold as GPC - 100gm unit	029003

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