



CIRGOLD PG900

GOLD PLATING PROCESS

INTRODUCTION

PMD Cirgold PG900 is a pure gold plating process specially formulated to produce deposits with optimum bonding, heat resistant and corrosion resistant properties. Cirgold PG900 deposits are ideal for transistor headers, lead frames and hybrid circuit package pins where high purity gold deposits are required. Deposits obtained from this system meet the requirements of Mil-G-4504C and ASTM B-488, Type III Grade A Class 1.

The process can be used for rack and barrel plating. Deposits produced are fine-grained and matte yellow.

BENEFITS

- Wide pH operating window
- Wide operating gold concentration
- High tolerance to impurities

SOLUTION MAKE-UP

Cirgold PG900 - Base Solution is supplied ready-for-use at the gold concentration recommended for the application - see Notes, Page 2.

CAUTION: Cirgold PG900 plating solution contains cyanide and therefore the correct precautions should be taken during make-up and operation.

OPERATING DATA

Temperature	60 - 70°C
pH	7.0 – 11.0
Specific Gravity	1.075 – 1.110
Current density A/dm ²	0.1 - 0.5 Rack
	0.05 – 0.3 Barrel
Deposition Rate	0.5A/dm ² will deposit 1µm in 4 minutes



EQUIPMENT

Tanks	Moulded polythene or welded PVC.
Anodes	Platinised titanium.
Agitation	Vigorous solution movement
Filtration	Glandless all plastic construction capable of at least 3 - 4 turn-overs/hour through a 5 micron polypropylene cartridge guaranteed free of winding lubricant.

Prior to using a new or used tank it should be leached with a 10 g/l solution of citric acid at 50 - 60° C overnight.

MAINTENANCE

The gold and additive concentrations will be approximately maintained by the following addition every 1 ampere hour:

7 gm of gold as potassium cyanide (PGC or GPC).
7ml Cirgold PG900 Replenisher.

These materials are supplied in units of Cirgold PG900 replenishment, each unit consisting of:

100 gm gold as PGC + a Cirgold PG900 100 ml "R" unit.

Solution pH will increase very slowly with use and should be adjusted by the addition of Cirgold PG900 pH - Adjuster - a 5 ml/L addition will reduce the pH by 0.5. If it is necessary to increase the pH, a 3 ml/L addition of Cirgold PG900 pH+ Adjuster will raise the pH by 0.5

NOTES

Gold Concentration: this is determined by the plating rate required and the type of agitation available. For normal rack and barrel plating the following concentrations are recommended:-

Rack	6 - 8 g/l gold
Barrel	3 - 5 g/l gold

The use of higher gold concentrations will allow the use of higher current densities.

Temperature: generally, the higher the temperature the greater the current density range.

pH: the normal operating pH is 7.0 - 8.0 and when plating the pins of hybrid circuit packages, no immersion gold deposit will be obtained on the can provided the can is plated with electroless nickel. However, if the can is plated with electrolytic nickel it may be necessary to raise the pH to 9.0 - 9.5 to prevent immersion gold deposition.

DISPOSAL

Dispose of in accordance with local authority requirements.

PRODUCT FAMILIES

The following products are referred to in this data sheet.

PRODUCT NAME	PRODUCT NUMBER
Cirgold PG900 Base Solution	037024
Cirgold PG900 100 ml "R" Unit	047024
Cirgold PG900 pH- Adjuster	067010
Cirgold PG900 pH+ Adjuster	065004
Gold as PGC - 100 Gram Unit	029003

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