

AURICOR 524 series

GOLD PLATING SOLUTION FOR THICKNESS (Au/Co/In)

Colour : **Yellow**Use : **Bath**Colour coordinates **L : 85.5 a: 9.0 b: 33.0****Product description**

AURICOR 500 is a line of weak acid plating solutions for use in gold brightened thickness deposition with transition metals and innovative organic additives. These galvanic solutions produce strong bright gold coats of 23 -24 carats which provide excellent resistance to corrosion and have the following characteristics:

- Able to work at low temperatures
- high electrical current density range
- excellent distribution
- Low specific weight of gold deposits
- Easy control and conduction

Application field

AURICOR 500 is not only a modern gold plating acid but also is a new concept to present to users in the decorative application sector (for example, costume and fashion jewelry , eyewear, watch industry, lighters, decorative and gift objects, furniture, etc..)

Operative conditions and deposit data

Parameter	UM	Operative range	Optimum
Gold metal concentration	g/l	4.0 - 10.0	In relation to the thickness desired
Indium metal concentration	g/l	0.5 - 1.5	1.0* (only if necessary)
Cobalt metal concentration	g/l	0.5 - 3.0	1.0
Treatment time	Min	1 - 10	4
pH	Un	3.6 - 4.4	3.8
Density of solution	°Bè	9.0 - 14.0	10.0
Temperature	°C	25 - 35	30
Voltage	V	2.8 - 4.0	3.5
Current	A/dm ²	0.5 - 5.0	3.0
Cathodic efficiency	mg/Amin	20 - 35	25
Gold deposited every 1000 A/min	g	20 - 35	25
Deposition speed	u/min	0.2 - 0.6	0.45
Density of the deposit	g/cm ³		17.0
Anodes			Ti/Pt net
Anode/cathode rate		1:1 - 4:1	2:1
Agitation			Moderate
Filtration			Necessary over 5 litres

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Packaging

The product is contained in a high-density polyethylene bottle or can.

Equipment

It is more practical to use Pyrex glass containers for quantities up to 5 litres, whereas for larger quantities it is best to install PTFE or PP plants equipped with a current rectifier with an ampere meter and voltmeter, with low residual AC (<5%), amp/min counter, platinum-coated titanium anodes, coated with 2.5 μ of platinum, magnetic drive filter pump with 5-15 μ cartridge.

N.B. Before use boiling and washing of the cartridges with demineralised water is recommended to prevent organic contamination.

Preparation of galvanic bath AURICOR 524

AURICOR 524 can be supplied ready to use or by make up solution. In case of using the Make up solution follow the steps :

1. Arrange the working tank switching on the ventilation and all the safety devices.
2. Add the AURICOR 524-BS
3. Add 40ml/l of AURICOR 500RGL
4. Add demineralised water to the final volume
5. Switch on the filter pumps and heaters adjusting the right working temperature
6. Wait till the working temperature and start with plating operation

Demineralised water

To prevent contamination of the bath both during its preparation and in any subsequent replenishing operations, use demineralised water with a conductivity of lower than 3 μ S/cm (containing no traces of any organic compounds, Silicon or Boron).

Agitation of the solution and/or pieces

For maximum performance, mainly in terms of colour, do not use a strong agitation. A moderate agitation will be sufficient to remove the hydrogen from the pieces surface. In case of large volumes it's important to provide a filter pump with a right flow suggested by our technical department.

Temperature

AURICOR 500 series gives excellent performance between 25 and 35°C.

pH

It's important to maintain the pH value into the optimal range . To increase the pH use potassium hydroxide 100 g/l , to lower use only AURICOR 500SA

Maintenance of plating bath

For small plating solution volumes (up to 10 litres) we suggest to use the bath without replenisher, but simply throw away the solution when is not working or when the final colour is much different compared to the new solution.

For higher volumes we suggest to use the related replenisher using the Ampereminute meter properly calibrated in relation to the analytical checks. The average of additive consumption every 1000 Amp/min are : 200 ml of AURICOR 500RGL , 10 ml of AURICOR 540RC ; 10 ml of AURICOR 540RI(adding of indium are necessary only if required in the deposit),20 ml of AURICOR 500RA

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Duration of the solution

In case of maintenance using replenisher or additives (usually for volumes bigger than 10 liters) we strongly suggest to change the bath after 10 turnovers of metal. It means that if the plating solution is starting with 50 g of gold metal, the bath should be changed after 500 g of gold adding as replenisher.

Analytical controls

This process is easy to maintain, but initially it requires frequent analytical controls in order to obtain a correct concentration level of all the metals present. The metal concentrations has a great influence on the final deposited colour. Some general guidelines for maintenance are below described:

- **AURICOR 540RI** It is the Indium replenisher, it's necessary in order to improve the hardness of the deposit 10ml = 0.4g di In metal
- **AURICOR 540RC** It is the Cobalt replenisher, it's necessary in order to improve the brightness of the deposit 10ml = 0.4g di Co metal
- **AURICOR 500RA** It is an additive necessary in order to use high currents without burn the pieces
- **AURICOR 568RGS** It is the gold replenisher in powder form 1.47g = 1g Au metal
- **AURICOR 500RGL** It is the gold replenisher in liquid form 10ml = 1g Au metal
- **AURICOR 500SA** they are the pH corrector salts
- **AURICOR 500SB** they are the balancing salts
- **AURICOR 500SC** they are the conducting salts , adding of 20 g/l increase the solution density of 1 °Bè.
- **AURICOR 524R** it is a replenisher unit developed for small users. This unit is containing all the compounds properly balanced for the consumption of 2 g of gold. Adding of 20ml of AURICOR 524NR = 0.4g of gold metal.

Notes

Instructions indicated in Our Process technical data sheets are the result of attentive checks and have been written as a guideline. They represent the best of our knowledge and refer to a normal use of our products. Such products are guaranteed in their quality up to the delivery: we cannot guarantee for the correct use of them, as this action is not under our direct control (addition or correction to plating baths are made by customer's personnel). As a consequence, process instructions have not to be intended as a guarantee of the final result in the use of our products.

Safety Information

Being an irritating solution , check carefully the related safety data sheet. (MSDS)

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Related products

Cod.Article	Description	Colour	Packaging
OR013701	AURICOR 524 Gold plating solution ready to use	24 k	4.0 g/l
OR015001	AURICOR 524-BS Make up solution		1 - 25 L
OR010101	AURICOR 524R Replenisher unit		2g/100ml
OR013901	AURICOR 540RI Indium replenisher		100 ml
OR014001	AURICOR 540RC Cobalt replenisher		100 ml
OR014201	AURICOR 500RA Additive replenisher		100 ml
OR014301	AURICOR 568RGS Gold replenisher in powder form		68g/100g
OR014401	AURICOR 500RGL gold replenisher in liquid form		100g/l
OR014501	AURICOR 500SA pH corrector salts		1 Kg
OR015101	AURICOR 500SB Stabilizing salts		1 Kg
OR011501	AURICOR 500SC Conducting salts		1 Kg