

PROCESS TECHNICAL DATA SHEET

PLATINOR 100 *series*

PLATINUM FOR PLATING BATH

Colour : **White platinum**

Use : **Bath**

Colour Coordinates : **L : 87.5**

a: 0.6

b: 3.5

Product description

PLATINOR 100 series is a platinum plating bath with incomparable technical and qualitative characteristics. The properties of the deposit make this plating bath a point of reference for all goldsmiths looking for of unparalleled finishing titanium gray for their jewellery items.

Application fields

PLATINOR 100 can be used for flash plating and It is particularly suitable on all jewellery items where a white pure platinum colour is required. PLATINOR 100 can be deposited directly on Silver, Palladium, Gold, ; an intermediate deposit of Nickel and Gold is necessary before to plate Tin, Lead, Zinc, Cadmium, Aluminium, copper, nickel and Iron.

Operating conditions and deposit data

Parameter	UM	Operative Range	optimum
Platinum concentration	g/l	2 - 20	4 - 10 (see pg.2)
Sulphuric Acid	ml/l	8 - 15	10
Deposition time	Sec	60 - 300	Depend of the thickness
Temperature	°C	40 - 60	50
Voltage	V	2.0 - 4.0	3.0
Current density	A/dm ²	0.5 - 3.0	2.0
pH	Un	0.5 - 2.0	1.5
Density of the solution	Bé°	3 - 10	6
Cathodic efficiency	mg/Amin	12 - 19	15
Platinum plated every 1000 A/min	g	12 - 19	15
Deposition speed	u/min	0.12 - 0.16	0.14
Deposition time for 0.2 microns	s	80 - 100	90 (see pg.2)
Density of deposit	g/cm ³		21.4
Anodes			Ti/Pt Net
Anode/Cathode rate		2:1 - 5:1	3:1
Agitation			moderate
Filtration			Necessary over 5 litres

PLATINOR 100 *series*

PLATINUM FOR PLATING BATH

Colour : **White platinum**

Use : **Bath**

Colour Coordinates : **L : 87.5**

a: 0.6

b: 3.5

Additional information 1/2

Packaging

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

Equipment

It is more practical to use Pyrex glass containers for quantities up to 5 litres, whereas for larger quantities it is better 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.

Ventilation necessary.

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

Preparation of the galvanic bath

The PLATINOR 104 is available ready-to-use with 4 g/l or concentrated 4 g/250 ml. In order to prepare 1 liter ready to use starting from the concentrated solution, follows these steps :

1. In one liter beaker, add 250 ml of PLATINOR 104-250ML
2. Add 750 ml of distilled water
3. Mix the solution e heat up to the working temperature

Choosing the concentration

A concentration of 2 g/l is recommended for thicknesses up to 0.2 μ m. For higher thickness In the instance or more technical then decorative uses it is better to use a concentration of 8 g/l or more. Briefly we can say that for thickness up to 20 microns the right concentration is 10 g/l; for thickness higher than 20 microns we suggest a 20 g/l solution.

Demineralised water

To prevent contamination of the bath both during its preparation and 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, particularly in terms of colour, do not use a strong agitation. Moderate agitation will suffice 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

PLATINOR 104 gives excellent performance at 50 °C.

Additives

The additives necessary for a correct maintenance of the bath PLATINOR 104 is the replenisher PLATINOR 125RPL Normally with the adding of PLATINOR 125RPL the process is stable but can be necessary sometimes to check the pH value and the density of the solution in Bè°. These values must be maintained into the optimal range. PLATINOR 125RPL is a 25 g/l litre solution of pure platinum and it's necessary in order to adjust the metal concentration into the bath. 10 ml of PLATINOR 125RPL = 0.25 g of pure platinum.

PLATINOR 100 *series*

PLATINUM FOR PLATING BATH

Colour : **White platinum**Use : **Bath**Colour Coordinates : **L : 87.5****a: 0.6****b: 3.5****Additional information 2/2****pH**

The pH value is extremely important and can be increased by ammonium hydroxide 1:1 or lower by sulphuric acid 1:10.

Analytical checks

The process in question is particularly easy to maintain and does not require frequent analytical checks. For baths under 3 litres normally we suggest to use the bath without replenisher, simply throw away when is not working anymore. However, for process over 5 litres, we suggest the analytical check once a week initially in order to understand the real consumption every "Kg" of goods in relation at your specific production. In this case the maintenance consist of adding the replenisher PLATINOR 125RPL.

Galvanic bath maintenance

Small-sized platinum baths (3 litres or less) can be used until the platinum solution is completely exhausted without adding any platinum concentrate. For larger-sized baths add PLATINOR 125RPL replenisher concentrate to restore the optimal platinum concentration. For perfect galvanic bath performance it is advisable to maintain the platinum concentration not under the 20% of the initial concentration; for example, with a bath operating at a concentration of 4 g/l, additions should be made after a maximum consumption of 0.8 g/l of platinum. When introducing the additives, bear in mind that in optimum working conditions bath which is working at 4 g/l normally deposits about 15 mg of platinum every Ampere/minute (Amin).

Add 20 ml of PLATINOR 125RPL every 35 Amin.

Guide lines for brighteners and conducting salts

- PLATINOR 100RA - brighteners - PT011301 - increases penetration and makes the deposit more uniform, eliminates dark stains that come out during intensive use in galvanic tanks.
- PLATINOR 100RW - wetting agent - PT011401 - assists the rinse aid function by eliminating the hydrogen that forms on the parts more effectively - to be added only in the event of a prescription from our technical service.
- PLATINOR 100SC - Conducting salts - PT011501 - to be used to increase the conductivity of the bathroom in cases of barrel deposition - slightly darkens the deposit - not to be used for frame depositions.

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 platinum metal, the bath should be changed after 500 g of platinum adding as replenisher.

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

Please refer to the safety data sheets for any information regarding safety and disposal (MSDS).

PROCESS TECHNICAL DATA SHEET

PLATINOR 100 *series*

PLATINUM FOR PLATING BATH

Colour : **White platinum**

Use : **Bath**

Colour Coordinates : **L : 87.5**

a: 0.6

b: 3.5

Products related to the PLATINOR 100 series

Cod.Articles	Description	Colour	Packaging
PT010301	PLATINOR 104 platinum plating ready to use solution	White	4 g/l
PT010101	PLATINOR 104-250ML concentrated platinum plating solution	White	4 g/250ml
PT010401	PLATINOR 125RPL platinum replenisher		25 g/l
PT011001	PLATINOR 125RPL-200ML platinum replenisher		5 g/200ml
PT011301	PLATINOR 100RA - Brightner		1 L
PT011401	PLATINOR 100RW - Wetting agent		1 L
PT011501	PLATINOR 100SC - Conducting salt		1 KG