

RODINOR 110 series

RHODIUM FOR PLATING BATH

Colour : **White**Use : **Bath**Colour coordinates **L :91.5/91.8 a:1.0/1.1 b:1.5/1.6****Product description**

RODINOR 110 series is a white rhodium plating bath with incomparable technical and qualitative characteristics. RODINOR 110 is characterised by the use of innovative additives capable of giving a level of **whiteness and shine** never before achieved by any other rhodium plating on the market**. Combined with advanced coating power, RODINOR 110 is the choice for anyone searching for top performance in white rhodium plating.

Application fields

RODINOR 110 can be used for flash plating and It is particularly suitable on all jewellery items where a extremely white rhodium colour is required. RODINOR 110 can be deposited directly on Silver, Palladium, Gold, ; an intermediate deposit of Nickel or Bronze 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
Rhodium concentration	g/l	0.8 - 2.5	2.0
Sulphuric acid concentration	Bé°	18 - 35	30
Deposition time	S	20 - 60	40
Temperature	°C	25 - 60	40
Voltage	V	2.0 - 5.0	3.5
Current density	A/dm ²	0.5 - 10.0	4.0
pH	Un	3 - 5	4
Cathodic efficiency	mg/Amin	0.1 - 0.5	0.4
Rhodium plated every 1000 A/min	g	3 - 5	4
Deposition speed	u/min	0.1 - 0.3	0.2
Deposition time for 0.2 microns	s	50 - 70	60
Density of deposit	g/cm ³		12.4
Anodes			Ti/Pt net
Anode/Cathode rate		1:1 - 4:1	2:1
Agitation			strong
Filtration			Necessary over 5 litre

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The product is contained in a high-density polyethylene bottle

Equipment

It is more practical to use pirex glass containers for quantities up to 5 litres, whereas for larger quantities it is best to install PTFE or PP plants equipped with a **digital current rectifier with an ampere minute meter necessary to calculate the consumption and with low residual AC <5%**). platinum-coated titanium anodes, 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 the galvanic bath

RODINOR 110 is supplied in concentrated version 2g/200ml. In order to prepare 1 liter of ready to use solution in necessary following the right steps :

1. Arrange the working tank switching on the ventilation and all the safety devices.
2. Add 1 bottle of RODINOR 110 containing 2g/200ml
3. Add 800 ml of demineralised water and mix
4. Set the right working temperature
5. Wait till the working temperature and start with plating operation

Choosing the concentration

A concentration of 2 g/l is recommended for thicknesses up to 0.2 μ m. In the instance of higher thicknesses or for technical uses to speed up the electrolyte it is better to use a concentration of 4 g/l or more.

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

RODINOR 110 gives excellent performance between 30 and 50°C.

Additives

Additives responsible of the colour and brightness of the deposit are contained and correctly batched in the RODINOR 115R replenisher, so standard adding of replenisher will be enough to maintain optimum levels.

pH

Normally the pH value into a rhodium bath does not require any adjustment. The sulphuric acid presence is enough in order to maintain the pH value into the optimal parameters

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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 trough 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 RODINOR 115R.

Galvanic bath maintenance

Small-sized rhodium baths (3 litres or less) can be used until the rhodium solution is completely exhausted without adding any rhodium concentrate. For larger-sized baths add RODINOR 115R replenisher concentrate to restore the optimal rhodium concentration. For perfect galvanic bath performance it is advisable to maintain the rhodium concentration not under the 20% of the initial concentration; for example, with a bath operating at a concentration of 2 g/l, additions should be made after a maximum consumption of 0.4 g/l of rhodium. When introducing the additives, bear in mind that in optimum working conditions bath which is working at 2 g/l normally deposits about 4 mg of rhodium every Ampere/minute (A/min) it means to add 4 g of RODINOR 115R every 1000 Ampere/minute

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 (addiction 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)

Related products

Cod.Articles	Description	Colour	Packaging
RH010601	RODINOR 110 concentrated rhodium for bath	White	2 g/200ml
RH010701	RODINOR 115R Rhodium replenisher		5 g/200ml