



OroDec RH-100 Rhodium Plating Process

“OroDec RH-100R” is a sulphuric acid type high purity (>99%) Rhodium plating solution. The solution is specifically designed to produce a hard(>800Hv), brilliant and white deposits for decorative accessories requiring a thin coating. It is suitable for the use of Jewelry, Watch, Spectacle frame and Optics instrument.

OPERATING CONDITIONS

	RANGE	OPTIMUM
Rh Content (g/l)	0.5 – 2.5 (g/l)	2 (g/l)
Sulphuric Acid Content (ml/l)	20 -50 (ml/l)	30 (ml/l)
Operating Temperature °C	25 - 50	40
Current Density	0.5 - 2.5	1.0
Agitation	Strong	-
Deposit Rate	~ 0.025µm/min (Rh 2g/l, 1ASD)	
Deposit Efficiency	~ 4mg/amp min	

EQUIPMENT :

Tanks	-	PP or PVC	Filtration	-	5 µm Polypropylene cartridges
Heaters	-	Quartz or PTFE	Anodes	-	Platinum or platinised titanium anodes are recommended..
Voltage	-	2 - 10V			

REPLENISHMENT

Maintenance of the rhodium should be based on analysis. As a guide, however, the following replenishment rates can be used for reference. For one gram of rhodium (approximately 200ampere minutes) should add 10ml OroDec RH-100R solution and 10ml OroDec RH-100W additive.

PLATING BATH PREPARATION (1 lit with 1g/.l Rh metal content)

Thoroughly clean the container. Add 800ml D.I. water. Stir with 30ml AR grade Conc Sulphuric acid. Then add 10ml ‘OroDec RH-100R’ solution and add 10ml OroDec RH-100W additive with constant stirring and top up to 1 Litre. Finally heat up to 40°C and the rhodium solution is ready to use. (Ratio of the rhodium solution and the additive is 1:1)



PRECAUTIONS

1. In case the material to be plated is iron, zinc or tin, nickel or palladium-nickel or palladium cobalt must be used as an undercoat.
2. Use rubber gloves and goggles when handling OroDec RH-100R and conc. sulphuric acid.
3. Heat generated when adding OroDec RH-100R and conc. sulphuric acid into DI water.
4. Never add water into conc. sulphuric acid directly.
5. Rinse plating parts with 5% conc. Sulphuric acid and swirl completely before dipping in the Rhodium bath.

Notes:

1. Rhodium content of the solution should be maintained above 1.0gm per litre.
2. For every 200 ampere minutes replenish with 10ml (Rh 1g) of Rhodium Solution OroDec RH-100R
3. The Rhodium metal content of the solution can be controlled either on basis of weighing electroplated deposits or ampere minutes passed through the electrolyte. However, a periodical check of the solution by quantitative analysis is recommended.
4. Use deionised or distilled water for the adjustment of solution volume lost as a result of heating.
5. Periodic carbon treatment is recommended. Organic contamination result in dull deposit.
6. Regular analysis of sulphuric acid is recommended. Lower than 20ml/lit sulphuric acid result in poor conductivity. Higher than 50ml/lit sulphuric acid will decrease the cathode efficiency and also cause acid attack on the Pt/Ti anode.
7. OroDec RH-100R Rhodium solution is a low acid type rhodium solution so acid build up is avoided.
8. A high grade conc sulphuric acid is a key factor to produce an excellent brilliant white metal finish. (Germany made AR grade conc. Sulphuric acid is recommended)
9. Avoid metallic contamination such as Zn, Ni, Cu, Fe, which will damage the physical property and decrease the whiteness of the pure Rhodium finish. Consult your distributor when the final finish is not white enough.
10. RH-100R solution is compatible to all kinds of rhodium plating solution.

Products

OroDec RH-100R (10g Rh /100ml)

OroDec RH-100W (100ml/unit)