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Short Instructions for RHODUNA® J1



Bath Characteristics:

The RHODUNA® J1 electrolyte is intended for the deposition of brilliant-white, very light, bright coatings. It is particularly suitable for rhodium plating of jewellery, watches, spectacle frames and other articles of decorative refinement. The usual coating thicknesses for these applications are 0.1 – 0.3 µm.

Bath Makeup:

Makeup sequence: first thoroughly mix the Initial Concentrate by shaking. For 1 litre of RHODUNA® J2 bath stir 100 ml of RHODUNA® J1 Initial Concentrate (minimal flocculations or precipitations must not be filtered off - they will dissolve during the makeup of the bath) slowly into 500 ml of deionized water. Stirring constantly and fill up to 1 litre with deionized water.

Operating Conditions:

- Voltage:** Under normal conditions 2 – 4 Volt.
For complex articles or passive layers much higher voltages are possible. Higher voltages will not adversely effect the coatings. There will be more foam during the higher evolution of hydrogen which will not effect the coatings.
- Current density:** Under normal conditions 1 A/dm² (0,5 – 2 A/dm²)
As mentioned in „Voltage“ much higher current densities are possible.
- Operating temperature:** 20 – 40 °C, preferably 35 °C
At low temperatures (< 20 °C) deposition rate, efficiency and deposition speed will be reduced. This will not adversely effect the rhodium coatings.
High temperatures (> 50 °C) will destroy the organic components in the bath.
Use only immersion heaters coated with porcelain, quartz or teflon.
- Product agitation:** Required
- Barrel plating:** RHODUNA® J1 is also excellently suited for barrel plating. In order to reach a better throwing Power, a higher current density than usual for rack plating should be chosen. For more technical details refer to the Operating Instructions of RHODUNA® J1.
- Anodes:** Platinized titanium. We recommend PLATINODE® coated with 2.5 µm of platinum.
We recommend removing the anodes from the bath during non-plating periods (during the night or weekends). DON'T USE STAINLESS STEEL!
- Bath tanks:** Tanks of acid-proof materials, preferably polypropylene, glas or porcelain.
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- Current source:** Infinitely variable, with voltage display and eventually a current display. We recommend an ampere-hour meter for a more precise bath replenishment.
- Bath Replenishment:** The rhodium content of the bath should be constantly kept at a level of 2 g/l. Replenish at the latest when 20% of rhodium content (= 0.4 g/l Rh) have been consumed. Per 1 g of Rh deposited, add to the bath 20 ml RHODUNA® J1 Replenisher Solution.

Avoid any metallic contaminants (silver and copper in particular) and drag-in of cyanide!

Please refer to the Operating Instructions of RHODUNA® J1 for more technical details!!

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Trouble Shooting List

RHODUNA® J1, J2 and TD



Troubles	Reason	Remedy
1. greyish colour	a) time too short b) voltage/current density too low c) temperature too low d) H ₂ SO ₄ content too low	a) increase time up to 4 minutes b) increase voltage up to 2,5 - 3,0 V c) increase temperature up to 35 °C d) increase H ₂ SO ₄ chem. pure
2. hazy, milky	Rh-thickness too high	reduce Rh-thickness
3. unplated area, stripe (streak)	a) voltage/current density too low b) impurities with Au, 25 mg/l c) organic impurities	a) increase voltage/current density b) + c) increase temperature up to 40 °C c) add 2 g/l activated carbon Eponit 114S into the warm solution, filter, see working instruction
4. poor adhesion, Rh-spots	Rh on Rh plated, poor contact	fix goods properly at the rack
5. solder connection after Rh-plating visible		pre-gilding or pre-silver
6. dark stains, pits	hydrogen bubbles	remove by tapping or knocking on the rack
7. low brightness	a) plating time too short b) voltage/current density too low	a) increase the plating time, 4 min. = 0,1 micron b) increase voltage (up to 10 V)/ check current density