

RHODIUM READY TO USE PLATING BATH 2g/l WHITE COLOR

Colour **White**

[L: 90,5 a: 0,8 b: 1,4 c: 1,8 Yl: 3,4]

Product description

RH2M is a rhodium plating bath with uncomparable features. The properties of the deposit and its degree of whiteness make this plating bath a point of reference for the worldwide market.

The higher degree of whiteness is due to a more compact deposition with respect to those achieved with the corresponding C, D or W solutions at the same dipping times and amperages. As consequence, the deposition affords a higher white degree but the consumption in terms of Rhodium results to be around 15% higher at the same working time.

The main features of this electrolyte are as follows:

- *Flash rhodium-plating until 0.5 micron*
- *Exceptionally brilliant white deposits*
- *Wider plating range of voltage and amperage*
- *Possible to use even at room temperature*
- *Good distribution and penetration power*
- *Exceptional coverage and deposition speed*

Recommended applications

RH2M is used for flash plating. It is particularly suitable in applications where an extremely white colour is required to use as a base for the setting of brilliant-cut diamonds. RH2M can be deposited directly on Silver, Palladium, Gold, Copper, Nickel and its alloys. An intermediate deposit of Nickel and Gold or Palladium is necessary before use to plate Tin, Lead, Zinc, Cadmium, Aluminium and Iron. RH2M stands out for its excellent deposition efficiency, even at room temperature, which leads to a reduction in treatment times, working temperature and materials and a consequent increase in productivity.

Deposit data

Purity [%]	99.9
Density [g/cm ³]	12.4
Hardness [HV 0.01]	800-900
Thickness [µm]	0.02-0.50
Appearance	Shiny

Operating data

	Range	Optimum
Optimal working concentration [Rhodium, g/l]	1.6-2.5	2
pH	< 1	< 1
Time of exposure [s]	15-120	30-50
Operating temperature [°C]	20-60	40-60
Current density [A/dm ²]	0.5-10	3
Voltage [V]	2-6	3-4.5
Cathode efficiency [mg/Amin"]	4-12	8
Anodes	---	Pt or Ti/Pt
Agitation	Null-moderate	Moderate
Anode/Catode surface ratio	1:1-4:1	2:1

RH2M

Technical chart

Last revision

20/05/2013

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Additional informations

Packaging

The product comes in a high-density polyethylene bottle.

IMPORTANT: when you receive the product make sure that the cap is intact.

Equipment

It is more practical to use glass containers for quantities up to 5 litres, whereas for larger quantities it is best to install PTFE or polypropylene plants equipped with:

- a current rectifier with an ampere and voltmeter, with low residual AC <5%).

- amp/min counter.

- platinum-coated titanium anodes, coated with 2.5 µ of platinum.

- magnetic drive filter pumps with 5-15 µ cartridge.

N.B. Before use, boiling and washing process of the cartridges with demineralized water (also with 10% sulphuric acid) is recommended to prevent organic contamination.

Preparation of the galvanic bath

The product coded RH2M is a ready-to-use galvanic bath at the concentration of 2 g/l. This bath can be also obtained by adding 750 ml of demineralised water to 250 ml of RH2FM initial concentrate.

Choosing the concentration

A concentration of 2.5 g/l is recommended for thicknesses up to 0.4 µm.

Demineralized water

To prevent contamination of the bath both during its preparation and any subsequent replenishing operations, use demineralized water with a conductivity of less than 3 µS/cm (containing no traces of any organic compounds, Silicon or Boron). To achieve maximum deposit quality we recommend using our high-grade purity WATER.

Best conditions to get the higher level of luminosity and brightness of Rhodium

For maximum performance, particularly in terms of colour, do not use excessively vigorous agitation. Gentle agitation will sufficient to remove the hydrogen development from the pieces. So that, for processing tanks containing considerably large volumes, agitation of the solution using a magnetic filter pump with not too high a capacity is recommended; while for containers of modest size, moderate agitation of the pieces is adequate.

Higher current density and voltage is advantageous to achieve the best brightness and luminosity. For excellent results with a very short plating time we recommend the following operating data:

VOLTAGE: 4 V

TEMPERATURE: 60°C

IMMERSION TIME: 15-20 seconds.

Temperature

"Ultrabright Rhodium™" M version gives excellent performance at 40-60°C.

Additives

The additives responsible for the colour and brightness of the deposit are contained and correctly measured in the "Ultrabright Rhodium" product line, so standard additions of replenisher solutions will be enough to maintain optimum levels.

Analytical checks

The process in question is particularly easy to perform and does not require frequent analytical checks. However, our Technical Assistance Service is at hand to offer suggestions, advice and periodic analytical checks on all bath components.

Galvanic Bath Maintenance

Small-sized rhodium baths (up to 2-3 litres) can be used until the rhodium solution is completely exhausted without adding any rhodium concentrate. For larger-sized baths add RH5RM replenisher rhodium concentrate to restore the optimal rhodium concentration. For perfect galvanic bath performance it is advisable to maintain the rhodium concentration at a minimum of 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 a bath working at 2 g/l normally deposits about 8 mg of rhodium per Ampere/minute. Given the high cost of rhodium and to precisely assess consumption it is advisable to perform periodic analytical checks.

ALWAYS USE RH5RM to correct and restore the rhodium content.**The important organic components withdrawn from the rhodium electrolyte after an active carbon treatment or after several drag-out steps can be easily replenished by addition of RH2RM-C (see related technical chart for further information about its use).**

Safety Information

Being an acidic solution, the ready-to-use Ultrabright Rhodium RH2M galvanic rhodium bath is an irritant to the skin, eyes and mucous membranes. Caution should be exercised when using the product, avoiding contact with the eyes and skin. Use gloves and safety goggles. For further information please refer to the relative safety sheet.

<i>Ultrabright Rhodium M bath plating solutions</i>	<i>Code</i>
"Ultrabright Rhodium™" M, ready-to-use plating bath (2 g/l package)	RH2M
"Ultrabright Rhodium™" M, initial concentrate for plating bath (2g/100 ml package)	RH2FM
"Ultrabright Rhodium™" M, replenisher solution for plating bath (5g/100 ml package)	RH5RM
"Ultrabright Rhodium™" M, replenisher correction for plating bath (2g/100 ml package)	RH2RM-C