


**GENERAL INFORMATION**

RH2B is a ready-to-use black rhodium for bath plating. This black rhodium electrolyte has been designed specifically for decorative electroplating applications by granting alternative color options for finishes. The final color produced can be considered black with yellow undertones which makes the black color appear deeper. This room temperature procedure makes it ideal for two-tone designs as high temperature plating processes typically destroy traditional plating masks. RH2B can be replenished and maintained by completely restoring the rhodium content and the color with an all inclusive replenisher. The formulation is 100% arsenic free both in the metal deposited and in the chemical itself and falls within REACH compliance.

**Product form**

Metal concentration	2g/l (Rh)
Solution form	Liquid
Plating solution color	Black
Storage time	2 years
Volume	1 liter

**Deposit data**

Solution appearance	Shiny
Hardness [HV 0.01]	700
Density [g/cm <sup>3</sup> ]	11.2
Plating solution color	Black
Thickness range [μm]	0,02 - 0.4



Operating data	RANGE	OPTIMAL
Voltage [V]	1.8-3	2.5
Current density [A/dm <sup>2</sup> ]	1-1.5	1.2
Working temperature [°C]	20-35	25 - 30
Exposure time (sec)	60 - 180	120.0
Cathode efficiency [mg/Amin]	14 - 16	15.0
Anode-cathode ratio	1:1-4:1	2:1
Anode type	Plattonized titanium	
Agitation	Moderate	

Metal concentration	METAL	RANGE (g/l)	OPTIMAL (g/l)
	Rhodium	0.6-5.0	2.0

**Color coordinates**

L*	57.9
a*	0.4
b*	1.3
c*	1.3

**PREPARATION**

**RH2B** is a ready-to-use galvanic bath at the concentration of 2 g/l. No preparation is required.

**EQUIPMENT**

Working vessel: Pyrex glass / PVC / polypropylene.

Power supply: DC current rectifier with low residual AC (<5%).

Heating element.

Anode Type Platinized Titanium [1.5-2.5 µm].

For larger bath volumes:

Magnetic driven filter pumps with 5-15 µm cartridge (before use, boil and wash the cartridges with demineralized water for 3 hours to prevent organic contamination).

Amp/min counter.

**PRE TREATMENT**

**RH2B** can be deposited directly onto Silver, Palladium, Gold, Nickel and its alloys. An intermediate deposit or precious metal plating strike is necessary before depositing onto Tin, Lead, Zinc, Cadmium, Aluminum and Iron.

**POST TREATMENT**

The electrolyte should be removed from the surface as quick as possible. Wash off the bath residual in a recovery rinse (still rinse). Rinse the parts in circulating deionized water and dry.

**WATER PURITY**

To prevent contamination of the bath both during its preparation and any replenishing operations, use demineralized water with a conductivity of less than 3µS/cm (containing no traces of organic compounds, Chlorine, Silicon, or Boron).

**BATH MAINTENANCE**

Small-sized **RH2B** (until 5 liters) can be used until the rhodium solution is completely exhausted without adding any rhodium concentrate replenisher solution. For larger volumes add **RH2RB** replenisher solution to restore the optimal rhodium concentration. For perfect electrolyte performance it is advisable to maintain the rhodium concentration at values not lower than 80% of the initial concentration; for example, with a bath operating at a concentration of 2 g/l, additions should be done after a consumption of 0.4 g/l of rhodium. Keep in mind that at optimum conditions a bath working at 2 g/l deposits about 10-15 mg of Rh per ampereminute. Given the cost of rhodium and to have a precise evaluation of the metal consumption it is advisable to perform periodic analytical checks.

**SUPPLEMENTARY INFORMATION**

Free sulfuric acid concentration has to stay close to 20 g/l.

**SAFETY INFORMATION**

Being an acidic solution, the electrolyte is corrosive therefore 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. Keep away from cyanide based chemicals. For further information please refer to the relative MSDS.

**DISCLAIMER**

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