

**Technical data sheet and product guideline**



**RH2XL**

**White rhodium for bath plating 2 g/l ready-to-use**

**Color coordinates**



L	<b>90.5</b>
a	<b>0.8</b>
b	<b>1.5</b>
c	<b>1.6</b>

**Product form**

Metal concentration	<b>2 g/l (Rh)</b>
Form	<b>Liquid</b>
Material color	<b>Orange</b>
Storage time	<b>2 years</b>
Volume	<b>1 liter</b>

**Operating data**

	Range	Optimal
Voltage (V)	<b>2-6</b>	<b>3-4</b>
Current density (A/dm <sup>2</sup> )	<b>0.5-10</b>	<b>1-2</b>
Working temperature (°C)	<b>20-65</b>	<b>40-60</b>
Exposure time (sec)	<b>15-120</b>	<b>30-60</b>
pH	<b>&lt; 1</b>	<b>&lt; 1</b>
Cathode efficiency (mg/Amin)	<b>4-12</b>	<b>8</b>
Anode/cathode ratio	<b>1:1-4:1</b>	<b>2:1</b>
Anode type	<b>Platoned titanium</b>	
Agitation	<b>Moderate</b>	

**Metal concentration**

Metal	Range (g/l)	Optimal (g/l)
Rhodium	<b>0.6 - 5.0</b>	<b>2.0</b>

**Deposit data**

Purity (%)	<b>99.9</b>
Hardness (HV 0,01)	<b>800-900</b>
Density (g/cm <sup>3</sup> )	<b>12.4</b>
Thickness (um)	<b>0.02-0.50</b>
Appearance	<b>Shiny</b>
Color	<b>White</b>

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### Preparation

RH2XL 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.

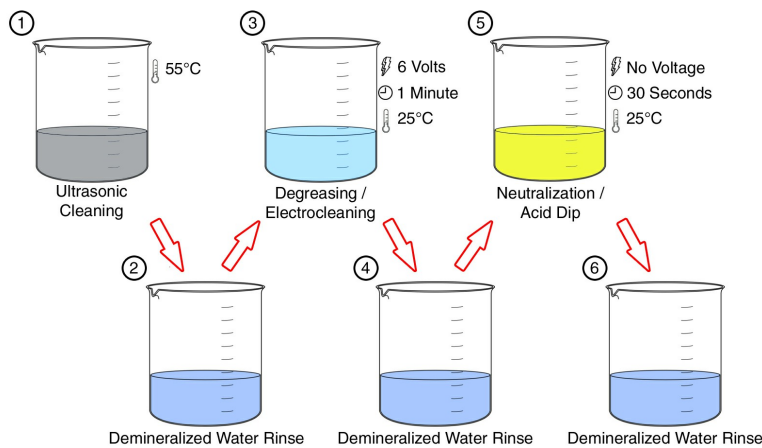
Anode Type Platinized Titanium [1.5-2.5 µm].

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



### Bath maintenance

Small-sized RH2XL (until 5 liters) can be used until the rhodium solution is completely exhausted without adding any rhodium concentrate replenisher solution. For larger volumes add RH5RM 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 8-10 mg of Rh per ampere-minute. Given the cost of rhodium and to have a precise evaluation of the metal consumption it is advisable to perform periodic analytical checks.

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**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 subsequent replenishing operations, use demineralized water with a conductivity of less than 3 µS/cm (containing no traces of organic compounds, Chlorine, Silicon, or Boron).

**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.

**Additional hints**

For maximum performances, particularly in terms of color, do not use excessive agitation. Gentle agitation will be sufficient to remove the gaseous hydrogen developed close to the pieces to be plated. So that, for processes which involve large volumes, agitation of the solution using a magnetic filter pump with not too high capacity is recommended; while for smaller tanks a 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
- PLATING TIME: 15 - 20 seconds.

An initial rhodium concentration of 2.5 g/l is recommended to get thickness higher than 0.4 microns.

**Packaging**



