



<b>Product Code</b>	307-183
<b>Colour</b>	Black
<b>Preparation</b>	900 ml deionised water to heat 20 – 25 °C and add the rhodium during continuous stirring
<b>Tanks</b>	Polypropylene, Teflon or Glass
<b>Anodes</b>	Platinised Titanium
<b>Heaters</b>	Porcelain or PTFE
<b>Agitation</b>	Solution and/or work movement is recommended

**USAGE:** Heat the mixture we prepared for use to 20 - 25°C. Dipping the platinum coated titanium (+) anode into it. Put the material you want to plate into the solution with the help of a current-conducting (-) hanger (Platinex hanger is recommended). Perform the plating process by immersing it and applying 2.0- 2.2V voltage and moving it for 60 seconds. Provides 0.1 micron coating with 2 - 3 minutes of application.

**IMPORTANT NOTE:** The more accurate the pre-treatment processes before plating, the better the plating quality will be. Please contact our company regarding the pre-treatment preparation.



### **OPERATING CONDITIONS**

<b>Rhodium Content:</b>	2.0 g/l ± 0.5
<b>Sulfuric Acid:</b>	50 g/l +5
<b>pH:</b>	< 1.0
<b>Temperature:</b>	20 - 25 °C
<b>Voltage:</b>	2.0 – 2.2 V (0.8 – 1 A/dm <sup>2</sup> )
<b>Anode-To-Cathode Ratio:</b>	2 : 1 or higher
<b>Anode Material:</b>	Platinized Titanium
<b>Deposition Rate:</b>	~ 0.1 µ 2 – 3 Minute
<b>Plating Time:</b>	1 – 3 Minute



## **DEPOSITION CHARACTERISTICS**

<b>Purity:</b>	99.9 %
<b>Hardness:</b>	400 HV
<b>Density:</b>	12 g/cm <sup>3</sup>
<b>Colorimetric Values:</b>	L: 62 a: 0.9 b: 3.5



## **MAINTENANCE RATE**

### **Consumed 4.000 Amps Per Minute**

- 10 gr of BLACK RHODIUMREPLENISHER

## **SOLUTION MAINTENANCE**

The Rhodium metal content should be maintained at the recommended concentration (1.5 – 2.5 g/l) with periodic additions of BLACK RHODIUM REPLENISHER containing 20 g/l Rhodium metal.

BLACK RHODIUM REPLENISHER is supplied in units of 100 ml or 1 liter. The Replenisher contains all necessary agents to be added every 4'000 A.min.

The temperature should be maintained at the recommended temperature of 20-25°C for BLACK RHODIUM. An increase in temperature will produce a mat deposit. A decrease in temperature will give a too low plating efficiency. Agitation should be 7 m/min.



## **EQUIPMENT REQUIRED**

### **1. TANKS**

Tanks should be made from Polypropylene or Teflon. Prior to use, the tank should be leached with a 5 % Sodium Hydroxide solution for several hours and subsequently rinsed in several changes of water and sulfuric acid.

### **2. HEATERS**

Heaters should be made from Porcelain or PTFE.



### **3. FILTRATION**

Filtration of the solution is not necessary.

### **4. AGITATION**

A moderate agitation is recommended. Work movement should be 7 m/min.

### **5. ANODES**

Platinized titanium anodes should be used with this solution. The area should be sufficient to provide an anode-to-cathode ratio of 2 : 1 or better.



### **TROUBLE SHOOTING**

<b>CONSTITUENT</b>	<b>LOW</b>	<b>HIGH</b>
<b>Rhodium</b>	Low Plating Efficiency	Hazy deposits.
<b>pH</b>	Low Plating Efficiency	Mat Deposits and Precipitation of the Solution
<b>Temperature</b>	Low Plating Efficiency	Hazy deposits
<b>Current Density</b>	Low Plating Efficiency and Dark Deposits	---
<b>Sulfuric Acid</b>	Hazy deposits	Low plating efficiency but bright deposits. Low throwing power