

# **TWL: TECHNOLOGY WITHOUT LIMITS, INC.**

57 Service Road, West Warwick, RI 02893

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## **TWL PALLADIUM PLATING PROCESS Pg1**

**PALLADIUM** is a slightly alkaline well buffered, electroplating formulation producing an almost pure Palladium deposit. The Plated Palladium deposit is compact, shiny, and reflective. The deposit does not tarnish and has an excellent corrosion wear resistance. It can be used as an undercoating before the highly expensive Rhodium plating layer. Palladium plating adds increased oxidation protection of the substrate metal.

### **Palladium Product Types Available**

- 1) TWLPDCOQt2G Palladium plating solution 1Lt ready to use
- 2) TWLPDCO500ML1G Palladium plating solution 500ML ready to use
- 3) \*TWLPHAK1 Palladium pH adjustment kit. Adds life to the Palladium

### **OPERATING CONDITIONS**

<b>Palladium content</b>	<b>2.0 g/l <math>\pm</math> 0.2</b>
<b>Temperature</b>	<b>43°C (100°F-114°F)</b>
<b>Electrolyte Density</b>	<b>6 – 9 (at75°F)</b>
<b>Volts</b>	<b>1.8-2.4V</b>
<b>pH</b>	<b>7.8-8.0</b>
<b>Cathode current density</b>	<b>0.5 – 1.0 A/dm<sup>2</sup></b>
<b>Deposition rate (at 0.5 A/dm<sup>2</sup>)</b>	<b>0.2 <math>\mu</math> (micron) in 1 minute</b>
<b>Plating efficiency</b>	<b>22-25 mg/A/min</b>
<b>Anode-to-cathode ratio</b>	<b>2 : 1 or higher</b>

### **DEPOSIT CHARACTERISTICS**

<b>Alloy</b>	<b>Pd 95-98%</b>
<b>Hardness (HV)</b>	<b>480 - 500 kg/mm<sup>2</sup></b>
<b>Specific weight</b>	<b>11.1 g/cm<sup>3</sup> 1 <math>\mu</math>/dm<sup>2</sup> = 111 mg</b>
<b>Colour</b>	<b>White to light grey</b>

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**TWL PALLADIUM PLATING PROCESS Pg2**

**Perfect Plating Sequence:**

- 1) Electro clean 60 seconds (Tiva Clean)
- 2) Distilled water rinse
- 3) Distilled water rinse
- 4) Activation rinse (Sparex No.2)
- 5) Distilled water rinse
- 6) Distilled water rinse
- 7) Palladium Plate 30-60 seconds
- 8) Distilled water rinse
- 9) Distilled water rinse
- 10) \*Return to Activation rinse (Sparex No.2)
- 11) Distilled water rinse
- 12) Distilled water rinse
- 13) Rhodium Plate
- 14) Distilled water rinse
- 15) Distilled water rinse
- 16) Distilled water rinse
- 17) Steam & clean air dry

**Add distilled water when there is evaporation of the plating solution**

**In general many organic or metallic contamination can interfere with the operation of the PALLADIUM Plating bath and should therefore be prevented by proper rinsing in pure distilled or DI water. A final rinse in distilled hot water is recommended.**

**Practice the daily control of pH, by using paper Lyphan strips or rolls. For easy pH control purchase TWL Palladium pH adjustment kit. Product Code# TWLPHAK1**

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