

Platinum Plating Bath PT 10

Status 3.2015

Product description

Platinum Plating Bath PT 10 deposits brilliant, white, rhodium-like coatings with high corrosion resistance and hardness. The purity of platinum in the deposited coatings is 99.9%. Platinum is highly suitable for decorative purposes. High levels of hardness, abrasion and corrosion resistance and low contact resistance also enable it to be used in the electronics industry as a finishing layer. The plating solution is suitable for both rack and barrel electroplating. The maximum coating thickness is 1 µm.

Supplied as

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|--|--------------------------|
| Platinum Plating Bath PT 10, 2 g Pt/l (ready to use) | Item no. 81010880 |
| Platinum Plating Bath PT 10, 2 g Pt/100 ml (concentrate) | Item no. 81010877 |
| Regeneration Solution PT 10 R (2 g Pt/100 ml) | Item no. 81010879 |
| Regeneration Solution PT 10 R (20 g Pt/l) | Item no. 81010878 |

Coating properties

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| Plating: | pure platinum |
| Colour: | white |
| Hardness HV: | approx. 500 |
| Density: | 21 g/cm ³ |

Equipment

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| Anode material: | platinised titanium |
| Anode/cathode surface: | 2:1 |
| Heating element: | PTFE or quartz glass heater |
| Tank material: | PPH |
| Bath filtration: | required (no permanent filtration with activated carbon) |
| Moving product: | required |
| Extraction: | recommended |

Caution: do not use PVC for tanks or pumps under any circumstances!

Operating parameters

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| Voltage: | 1.5–2.5 V |
| Bath temperature: | 30–40°C |
| Deposition weight: | approx. 10–12 mg/min |
| Deposition rate: | approx. 0.08 µm/min at 1.5 A/dm ² |
| Current density: | 1.5 A/dm ² |
| Platinum content: | 2 g/l |
| pH value: | <1 |
| Max coating thickness: | 0.3 µm |

Bath preparation (from concentrate)

Per litre of *Platinum Plating Bath PT 10*, you need:

- 100 ml of *Platinum Concentrate PT 10*
- 800 ml of deionised water

Procedure

To prepare one litre of *Platinum PT 10*, gradually add 100 ml of *Platinum Concentrate PT 10* while stirring to about 800 ml of deionised water. Then slowly add 60 ml of concentrated sulphuric acid (96% chemically pure) and make up to the designated bath volume of one litre.

Process overview

Intensive surface pretreatment is required for a strongly adhesive platinum plate. This should be performed using *Ultrasonic Cleaning Concentrate ULTRA CLEAN*, *Degreasing Salt A* and subsequent pickling in 10% sulphuric acid. After the respective process baths, the parts need to be rinsed several times in water. The last rinsing step before platinum-plating should be performed in deionised water. The product rack should be contacted before immersing in the bath.

Bath control and regeneration

In the event of regular replenishment, you should not take more than 0.5 g/l of platinum from of the electrolyte. Regenerate the bath using *Regeneration Solution Platinum PT 10 R*. For each prepared gram of platinum, add 50 ml of the replenishment solution to the electrolyte. The replenishment solution should be stored in a cool and dark place.

Bath analysis

To analyse the metal content and acid, please send us 100 ml of the electrolyte. If you would like us to perform further investigations, we require 1,000 ml of electrolyte.

Hazard information, storage, disposal

The bath contains sulphuric acid and must **not** come into contact with cyanides or cyanide-based solutions. The occupational safety measures and regulations specified in the safety data sheet must be observed. The baths must be sealed and stored separately from food in suitable and labelled containers. Spent bath solutions and drag-out rinses must **not** be discharged into the waste water without first being treated. The spent solutions or drag-out rinses contain precious metals that we would be happy to reprocess for you. Recovering this solution can be profitable from 10 litres.

The information on our product and the method are based on intensive research and technical experience of this application. We provide these results to the best of our knowledge and reserve the right to make technical changes in the course of product development.

However, this does not relieve the user of their responsibility to check our specifications for their own use before application. If you have any questions or would like a consultation, please contact our application technology service at any time. We would also be happy to discuss our further electroplating product range.