

Gold Plating Bath GP 204

Status 3.2015

Product description

Bright Gold Plating Bath GP 204 is used for gold-plating thicker gold coatings (max. 8 µm) in the decorative and technical field. The plating bath provides a deep-yellow, vibrant gold coating. The purity of the deposited coating is 22 to 23 carats. This bath needs little investment in terms of management and regeneration and is therefore easy to manage. For this reason, it is also suitable for users of smaller bath volumes. The plating solution is available in three different gold concentrations.

Supplied as

Gold Plating Bath GP 204 (ready to use)

Item no. 86902300 (3 g/l Au) 
Item no. 86902500 (5 g/l Au)
Item no. 86902700 (8 g/l Au)

Gold Plating Bath GP 204 (salt)
 Regeneration Solution GP 204 R
 Potassium gold cyanide 68.2% Au

Item no. 86938230
Item no. 86938235
Item no. 81009262

Coating properties

Plating: gold approx. 99.6%, cobalt approx. 0.4%
 Colour: deep yellow
 Hardness HV: approx. 150–170
 Density: 18.1 g/cm³

Equipment

Anode material: platinised titanium
 Anode/cathode surface: 2:1
 Tank material: PPH
 Bath filtration: required
 Moving product: required
 Extraction: recommended

Operating parameters

Voltage: 3–5 V
 Bath temperature: 20–30°C
 Time for 1 µm: 8 minutes 
 Deposition weight: approx. 25–30 mg/amine
Current density: 0.8–1.8 A/dm²
 Gold content: 3, 5, or 8 g/l
 pH value: 3.8–4.5
 Max coating thickness: 8 µm 

Bath preparation (from salt)

Per litre of Gold Plating Bath GP 204, you need:

- 50 g of Make-Up Salt GP 204 A
- 4.41 g of potassium gold cyanide 68.2% Au = 3 g Au
 7.35 g of potassium gold cyanide 68.2% Au = 5 g Au
 11.76 g of potassium gold cyanide 68.2% Au = 8 g Au

Procedure

Completely dissolve the make-up salt for one litre of plating solution in 900 ml of heated (approx. 40°C) deionised water. Dissolve the potassium gold cyanide separately in approximately 100 ml of deionised water. Combine the two solutions.

Process overview

Intensive surface pretreatment is required for a strongly adhesive gold 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 gold-plating should be performed in deionised water.

The plating solution is not suitable for direct deposition on stainless steel. We recommend our *Pre-Gold Plating Bath VG 204* for this purpose.

Bath control and regeneration

This includes maintaining a constant pH level and gold content. At request, we can perform a regular bath analysis in our application technology laboratory. To do this, we need one litre of the gold-plating bath.

Adjusting the pH value:

Measuring the pH with indicator paper is sufficient. If the pH value is high, it can be reduced by carefully adding 10% citric acid. If the pH value is too low, it can be increased by carefully adding 10% potassium hydroxide solution.

Adding potassium gold cyanide:

For every gram of fine gold that is taken out of the bath, add 1.47 g of potassium gold cyanide 68.2% Au and 5 ml of Re-generation Solution GP 204 R.

We recommend using an amp-minute meter or our metal weight meter to monitor the bath accurately.

Hazard information, storage, disposal

The bath contains 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 20 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.