Pre-Gold Plating Bath VG 204

Status 3.2015

Product description

Gold Plating Bath VG 204 is used as a pre-gold-plating bath for stainless steel and cyanide-based gold-plating baths or other baths that require pre-gold-plating as an adhesive base layer. *Pre-Gold Plating Bath 204 VG* has excellent stability and has a long service life. The deposited gold coatings are ductile and have low porosity and can also be used as a decorative finish.

Supplied as

Pre-Gold Plating Bath VG 204 (ready to use)	**Item no.** 86901600
Pre-Gold Plating Bath VG 204 (salt)	**Item no.** 86938160
Regeneration Solution VG 204 R	**Item no.** 86938165

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 0.5 µm:	approx. 3–4 minutes
Deposition weight:	approx. 10–15 mg/amine
Current density:	4–10 A/dm²
Gold content:	2 g/l
pH value:	1.5
Max coating thickness:	0.5 µm

Bath preparation (from salt)

Per litre of Pre-Gold Plating Bath VG 204, you need:

- 50 g of Make-Up Salt VG 204 A
- 2.95 g of potassium gold cyanide 68.2% Au

Procedure

For one litre of plating solution, stir *Make-Up Salt VG 204* in 900 ml of heated (approx. 40°C) deionised water until it is entirely dissolved. Completely dissolve the *potassium gold cyanide* separately in approximately 80 ml of deionised water. Thoroughly combine the two solutions. Adjust the pH value to 1.5 by **carefully** adding sulphuric acid.

Process overview

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

Heimerle + Meule GmbH
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Since 1845

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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:
Check the pH value daily and ensure that it does not exceed 1.5. By **carefully** adding concentrated (for smaller bath volumes even diluted) sulphuric acid, you can adjust this value.

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 *Regeneration Solution VG 204 R*.
Until its regeneration, 40% of its target gold content can be removed from the bath. We recommend using an amp-minute meter or our metal weight meter to monitor the bath accurately.

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.

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