Silver Plating Bath SCANDIA 360

Status 3.2015

Product description

Silver Plating Bath SCANDIA 360 guarantees an exceptionally high-shine white fine-silver deposit with excellent throwing power. It is ideally suited to silver-plating decorative and technical products. The electrolyte is low maintenance and highly suited to rack and barrel products. Preliminary silver-plating is not strictly necessary. For specialist applications such as pen- or tampon-plating, we can offer our *Silver Bath 360-S*.

Supplied as

Silver Plating Bath SCANDIA 360 (ready to use)	**Item no.** 86909400
Silver Salt SCANDIA 360 (salt)	**Item no.** 86909100
Brightener A	**Item no.** 86938810
Brightener B	**Item no.** 86938816

For larger order quantities, we would be happy to supply you with our tenfold concentrates:

Brightener A, 10-Times Concentrate	**Item no.** 86938811
Brightener B, 10-Times Concentrate	**Item no.** 86938812

Coating properties

Silver content:	99.5–99.9%
Plating:	fine silver
Colour:	bright white
Hardness HV:	100–110
Density:	10.5 g/cm³
Contact resistance:	5–10 mΩ at 10 cN tracking force

Equipment

Anode material:	fine silver in a protective bag
Heating element:	regulated quartz glass immersion heater
Anode/cathode surface:	1:1
Tank material:	PPH
Bath filtering:	required (for larger bath volumes)
Moving product:	required
Extraction:	required

Operating parameters

Voltage:	0.5–1.2 V (depending on the size of the surface being coated)
Bath temperature:	20–25°C
Time for 1 µm:	approx. 2 minutes (1 A/dm²)
Maximum coating thickness:	>100 µm shiny layer of up to 10 µm
Deposition weight:	approx. 65 mg/amine
Current density:	
Barrel products:	0.1–0.5 A/dm²
Rack products:	0.5–5.0 A/dm²
Fine silver content:	34–38 g/l
Content of free potassium cyanide:	120–140 g/l

Heimerle + Meule GmbH
Gold and silver refinery
Since 1845

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Bath preparation (salt)

Bath chemicals for 100 litres of bath formulation:

26.67 kg of Silver Salt SCANDIA 360
2.5 l of Brightener A
1.5 l of Brightener B

Procedure

After thoroughly cleaning the tank, fill it to two-thirds full with deionised water and dissolve *Silver Salt SCANDIA 360* in the water.
Then add the brighteners, fill the tank to its final volume with deionised water and mix thoroughly. After a resting phase of about ten hours, the electrolyte is ready to use.

Process overview

Intensive surface pretreatment is required for a strongly adhesive silver plate. The surface should be pretreated using *Ultrasonic Cleaning Concentrate ULTRA CLEAN* and *Degreasing Salt A*.
Surfaces made of copper or its alloys should be contacted before immersing in *Silver Plating Bath SCANDIA 360* or pre-silver-plated with *Pre-Silver Plating Bath VS 60*.
Surfaces made from iron, tin, zinc, lead or their alloys should first be copper-plated using *Copper Plating Bath CU 540*.
Surfaces made from silver, nickel or palladium can be silver-plated directly.
Stainless-steel surfaces must be coated prior to silver-plating with *Pre-Nickel Plating Bath 216* or *Pre-Gold Plating Bath 204 VG*.
We recommend post-treatment with *anti-tarnish protection system CRFs* to improve the resistance of the silver coating to tarnishing.
After the respective process baths, the parts need to be rinsed several times in water. The last rinsing step before silver-plating should be performed in deionised water.

Bath control and regeneration

Bath control includes maintaining a constant silver and potassium cyanide content and constant brightener level.
For large bath volumes, we recommend adding
approximately 750 ml of *Brightener A* and

approximately 500 ml of *Brightener B* after 1,000 Ah**.**
To ensure optimum bath control, the plating solution should be regularly analysed in our application technology laboratory. To do this we, need one litre of the electrolyte. We would be happy to provide you with the relevant specifications for the correct analysis at request.

Hazard information, storage, disposal

Silver Plating Bath SCANDIA 360 is classified as highly toxic according to the German Hazardous Substances Ordinance (GefStoffV). The bath contains cyanides and must **not** come into contact with acids or acidic 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 solution or drag-out rinse contains 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.

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