Black Ruthenium Bath JE12-1

Description

The Black Ruthenium Bath JE12-1 deposits dark to gray-black ruthenium layers. The bath maintains gloss and a high color consistency can be achieved. The layer is gripped firmly and impresses with their decorative color. The maximum layer thickness to be achieved is 0.2-0.5 µm.

For base metals or silverware, a pre-gilding layer is strongly recommended as an underlayer.

Operating data

Ruthenium content	5.0 g/L Ru
pH-value	1.0 – 1.6
Density	1.036 g/cm^3

Working conditions

Voltage	2.2 – 3 Volt
Bath temperature	65°C (60 – 70°C)
Exposure time	2 min (2 – 4 min)
Anodes	Platinum-plated titanium, MOX
Agitation	required, low speed
Currency density	0.5 – 3 A/dm^2
Bath filtration	from 10 Liter
Deposit rate	1 – 3 mg/Amin
Deposit speed	0.02 µm/min bei 1.5 A/dm^2

Deposition data

Hardness	Ca. 800 HV
Layer thickness	Max. 0.5 µm
Layer density	Ca. 12 g/cm^3

Form of delivery

- Ready for use (5 g Ru/L)
- Concentrate form (5 g Ru/100 ml) from 10 Ltr.

Bath operation concentrated form

The following are required per liter of black ruthenium bath:

- 100 ml Makeup concentrate JE12
- 20 ml Black Additive JE12-A
- 2 ml Wetting Agent JE12-N

Fill the container 2/3 with deionized water and dissolve the concentrate in it. Then add the black additive and wetting agent and fill up to the final volume. Mix it well.

Special post-treatment

After the ruthenium bath, the parts must be immersed in an alkaline solution in order to neutralize electrolytic residues that are still on the surface or in pores. This also gives you a nice, even and anthracite-black color.

Processing instructions for post-treatment:

- Solution 50 g/l NaOH
- Temp. 50°C
- Time 15 – 30 sec.

Bath control / regeneration

Regeneration should take place at the latest after 20% ruthenium processing. For 1 g of deposited ruthenium, 20 ml of ruthenium concentrate JE12 (50 g Ru/L) must be added. We recommend an ampere minute counter to check the deposited precipitation weight.

The metal content should be checked at regular intervals, especially for larger baths. We would be happy to carry out a bath analysis for you.

After a longer period of use (at the latest after a total of 50% ruthenium has been worked out), the loss of the wetting agent JE12-N (carryover during the rinsing process) must be compensated. In this case add 0.5 ml /L JE12-N.

If the color deviates (too light), the black additive JE12-A can be added in small increments of 1-2 ml /L .

Attention: If the dosage is too high (approx. 20 ml /L), the deposition speed slows down and the precipitation can have defects and a slight porosity. The black additive cannot be removed by an activated carbon treatment.

Jentner Plating Technology GmbH | Johann-Staib-Str. 2 | 75179 Pforzheim, Germany | Tel.: 07231 41 80 94-0 | Fax: -77 | www.jentner-plating.com

Checking the pH is occasionally necessary. The pH can be adjusted with 1:10 sulfuric acid (p.A. quality).

The bath is sensitive to metallic contaminants such as iron, but also zinc, copper and lead.

Storage
Store it in closed containers and separated from food products in suitable special marked bottles.
Do not bring in contact with cyanide or alkaline solutions.

Risks/ Disposal
Used solutions should be disposed of by a specialist company who will treat it before discharging.
Check it with the local water authority for permitted discharge levels.

Please note our
Safety Data Sheet !

Jentner Plating Technology GmbH | Johann-Staib-Str. 2 | 75179 Pforzheim, Germany | Tel.: 07231 41 80 94-0 | Fax: -77 | www.jentner-plating.com