![umicore Metal Deposition Solutions]

AURUNA® 311 For Technical Applications Gold Cobalt Electrolyte

For the adhesive direct gold-plating of stainless steel and nickel

AURUNA® 311 For Technical Applications is a strongly acidic alloy electrolyte for the adhesive direct gold-plating of stainless steel. It is preferably used for chromium-nickel steels, molybdenum steels and nickelbased alloys difficult to activate. Due to its strong activation effect, the electrolyte can be often used successfully as well for other passive materials difficult to plate.

The gold electrolyte is suitable for both strike gold layers and thick coatings in the technical field. The coatings are ductile, low in pores and protect against corrosion.

AURUNA® 311 For Technical Applications can be used for rack and barrel operation as well as in reel-to-reel plating (e.g. spray and dip cells and brush).

Electrolyte characteristics

Electrolyte type	Strongly acidic
Metal content	2 (1 - 10) g/l Au
pH value	0.6 (0.1 - 0.8)
Operating temperature	25 (20 - 40) °C
Current density range	2 - 6 A/dm²
Plating speed	0.08 µm/min at 2 g/l Au, 2 A/dm²
Anode material	Pt-Ti, MMO (type PLATINODE® 177)

Coating characteristics

Coating	Gold-cobalt

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Alloy composition	Approx. 99.7 weight % Au 0.3 weight % Co
Colour of deposit	Deep yellow
Brightness	Bright
Hardness	160 HV
Max. coating thickness	10 µm

Advantages

- Strongly acidic gold alloy electrolyte for the direct gold-plating of stainless steel and nickel
- Very good activation effect – without halogenides
- Low-pore, ductile and crack-free coatings
- Suitable for strike gold layers as well as for thick coatings
- Good throw pdf-rowing power
- The coatings are RoHS compliant
- Also available as a cobalt-free special version
- Suitable for rack, barrel and reel-to-reel plating

Applications

- Electrical contacts
- Stainless steel contacts
- Stainless steel springs

Deposition Speed Depending on Gold Content, Temperature and Current Density

Legend:
- 2 g/l Au, 20 °C
- 2 g/l Au, 40 °C
- 4 g/l Au, 20 °C
- 4 g/l Au, 40 °C
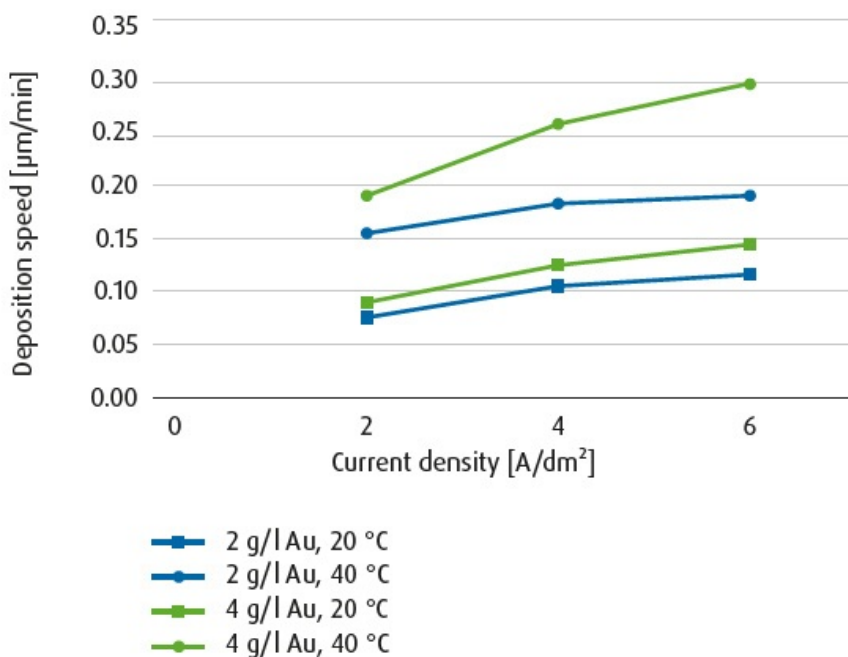
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