Au Fe

Version: 19 December 2024

umicore

# AURUNA® 313

## GOLD IRON ELECTROLYTE

### Cobalt-free alternative to direct gold plating of stainless steel

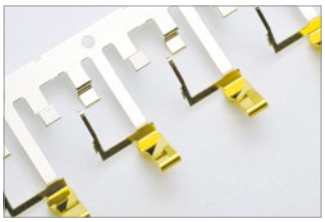
The highly effective, strongly acidic gold electrolyte AURUNA® 313 enables direct gold plating of stainless steels with good adhesion. It is particularly suitable for chromium-nickel steels, molybdenum-containing steels and nickel-based alloys that are difficult to activate. Thanks to its activating effect, AURUNA® 313 can also be used successfully for other passive materials that are difficult to electroplate. If necessary, activation can be supported by special pre-treatment measures.

Base metal intermediate layers and a reduction in corrosion resistance are avoided. The electrolyte is free of chloride or fluoride and is suitable for both decorative and technical applications. It has a large operating range and is suitable for rack, barrel and reel-to-reel applications.

The coatings made of AURUNA® 313 are crack-free, ductile and non-porous. They can be deposited brightly up to a coating thickness of 0.5 µm. The deposition speed is sufficient to economically deposit the desired coating thickness directly from the electrolyte in many cases. The coatings retain their bright appearance.

### Advantages

- Good activation effect - without halides
- Adhesive direct gold plating of stainless steel
- Coatings are crack-free, ductile and low-porous
- Corrosion-resistant
- Large operating range
- For decorative and technical applications
- Suitable for rack, barrel and reel-to-reel equipment



### Applications

- Watches
- Household articles
- Writing instruments
- Spectacle frames
- Costume jewelry
- Cutlery
- Electrical contacts
- Stainless steel contacts
- Stainless steel springs

# AURUNA® 313

## GOLD IRON ELECTROLYTE

## TECHNICAL SPECIFICATIONS

| Electrolyte characteristics | |
|---|---|
| Electrolyte type | strongly acidic |
| Metal content | 2 (1 - 3) g/l Au<br>0.5 (0.3 - 1.0) g/l Fe |
| pH value | 0.9 (0.8 - 1.0) |
| Operating temperature | Room temperature up to max. 30 °C |
| Electrolyte density | 1.04 g/cm³, increasing |
| Current density | 4 (0.5 - 8.0) A/dm² |
| Deposition speed | approx. 0.07 µm/min at 4 A/dm² |
| Deposition rate | approx. 3.4 mg/Amin at 4 A/dm² |

| Coating characteristics | |
|---|---|
| Coating | Gold iron |
| Purity | 99.5 % Au<br>0.5 % Fe |
| Colour of deposit | Deep yellow |
| Hardness of deposit | approx. 165 HV |
| Max. coating thickness | 0.5 µm |
| Density | approx. 19 g/cm³ |

## YOUR CONTACT

Do you have a specific question or would you like a no-obligation quote calculation?
Our specialist will be happy to help you with any technical questions you might have.

Markus Legeler
Manager Sales International

Mail: markus.legeler@eu.umicore.com
Phone: +49 (0) 7171 607 - 204

umicore