

RHODUNA[®]- ALLOY 1

TECHNICAL - RHODIUM-RUTHENIUM-ELECTROLYTE

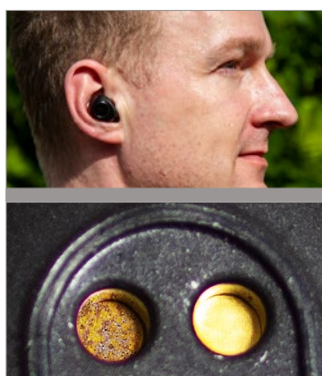


Meets the new requirements for wearables and mobile phones

Ease of use, attractive design and strong performance have always been the main arguments for buying wearables and mobile phones. But more and more important are the small differences such as a long lifetime and compatibility with fast chargers.

These expectations cannot be fulfilled with gold-plated charging contacts & connectors (USB-C, Pogo Pin, etc.). Gold-plated contacts corrode during the charging process if they have been in contact with salt water, swimming pool water, sweat or beverages, which leads to numerous complaints and the costly replacement of damaged devices.

If the contacts are coated with RHODUNA[®]-Alloy 1, they are protected against corrosion. This does not affect the ability of the devices to charge quickly. RHODUNA[®]-Alloy 1 has been used since 2016 for electronic contacts in reel-to-reel equipment as well as in barrel and rack operation in series production.



Advantages

- Very light, white and ultra-bright coatings
- Uniform layer thickness
- Crack-free up to 4 µm
- Wide operating range
- Extremely abrasion-resistant (Hardness of > 900 HV)
- Less expensive than pure rhodium layers
- Protects reliably against corrosion
- No influence on fast charging
- Suitable for reel-to-reel, rack and barrel

Applications

- Smartwatches
- Headphones (In-Ears)
- Mobile phones
- Fitness tracker
- Plug contacts

RHODUNA®-ALLOY 1

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TECHNICAL SPECIFICATIONS

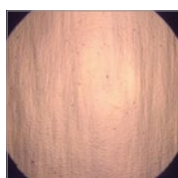
Electrolyte characteristics	
Electrolyte type	Strongly acidic
Metal content depending on the application and the thickness of the layers	1.6 to 10 g/l Rh 0.1 to 0.5 g/l Ru
Operating temperature	45 (40 - 50) °C
Current density range (Rack, barrel and reel-to-reel)	2 - 50 A/dm ²
Plating speed (10g Rh, 0.2g Ru)	approx. 0.84 µm/min (6 A/dm ²) approx. 1.02 µm/min (10 A/dm ²) approx. 1.29 µm/min (20 A/dm ²)

Coating characteristics	
Coating	Rhodium-ruthenium
Alloy composition	70 - 98 % Rh 2 - 30 % Ru
Colour of deposit	White
Brightness	Bright
Hardness of deposit HV 0.015 (Vickers) approx. values	900 HV
Density	approx. 12.4 g/cm ³

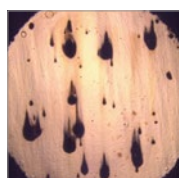
Excellent Corrosion Protection (Test in NaCl Solution*)

Identical gold layer does not withstand corrosion test

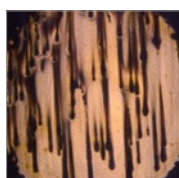
Nickel + 0,75 µm Gold



Initial conditions

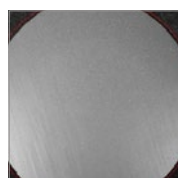


After 1 minute

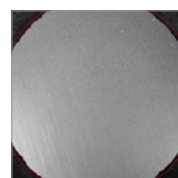


After 2 minutes

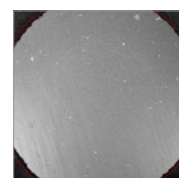
Nickel + 0.75 µm RHODUNA®-Alloy 1



Initial conditions



After 1 minute



After 5 minutes

* anodic 5V, 11 g/l NaCl, 40°C

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.



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