Pt Rh

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umicore
Metal Deposition Solutions

PLATUNA®-ALLOY RH

PLATINUM RHODIUM ELECTROLYTE

Abrasion-resistant platinum-rhodium layers for sparkling jewelry

With the strongly acidic alloy electrolyte PLATUNA®-Alloy RH, smooth, bright and crack-free platinum-rhodium coatings can be deposited up to a layer thickness of 0.5 µm. The deposited coatings are characterized by a brilliant luster and, in contrast to conventional platinum coatings, do not exhibit a yellow tint.

An important advantage of the coating is the high hardness due to the rhodium content. Furthermore, the electrolyte has a low sulfuric acid content and is therefore less aggressive to the coating substrate. The deposition rate is independent of the current density, which leads to an optimum layer thickness distribution. No precipitation occurs and the platinum concentrate does not have to be stored in the refrigerator.

Advantages

- Excellent brillance without yellow tint
- Longer durability
- High abrasion resistance
- Current density independent
- Easy handling - no cold storage and no precipitation

Applications

- Jewelry
- Watches
- Writing implements
- Spectacles frames
- Bathroom fittings

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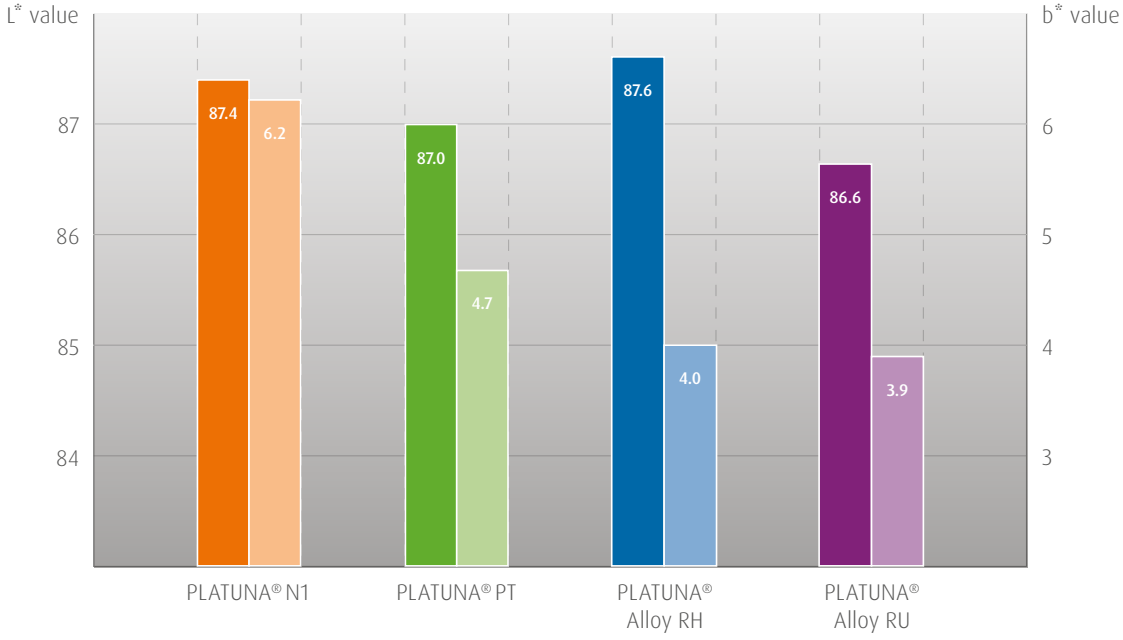
TECHNICAL SPECIFICATIONS

Electrolyte characteristics	
Electrolyte type	Strongly acidic
Metal content	1.2 (0.8 - 1.6) g/l Pt 0.3 (0.2 - 0.4) g/l Rh
pH value	< 1
Operating temperature	60 (55 - 65) °C
Current density range	5 (0.5 - 10) A/dm²
Plating speed	approx. 0.12 µm/min at 5 A/dm²
Deposition rate	approx. 4.7 mg/Amin at 5 A/dm²

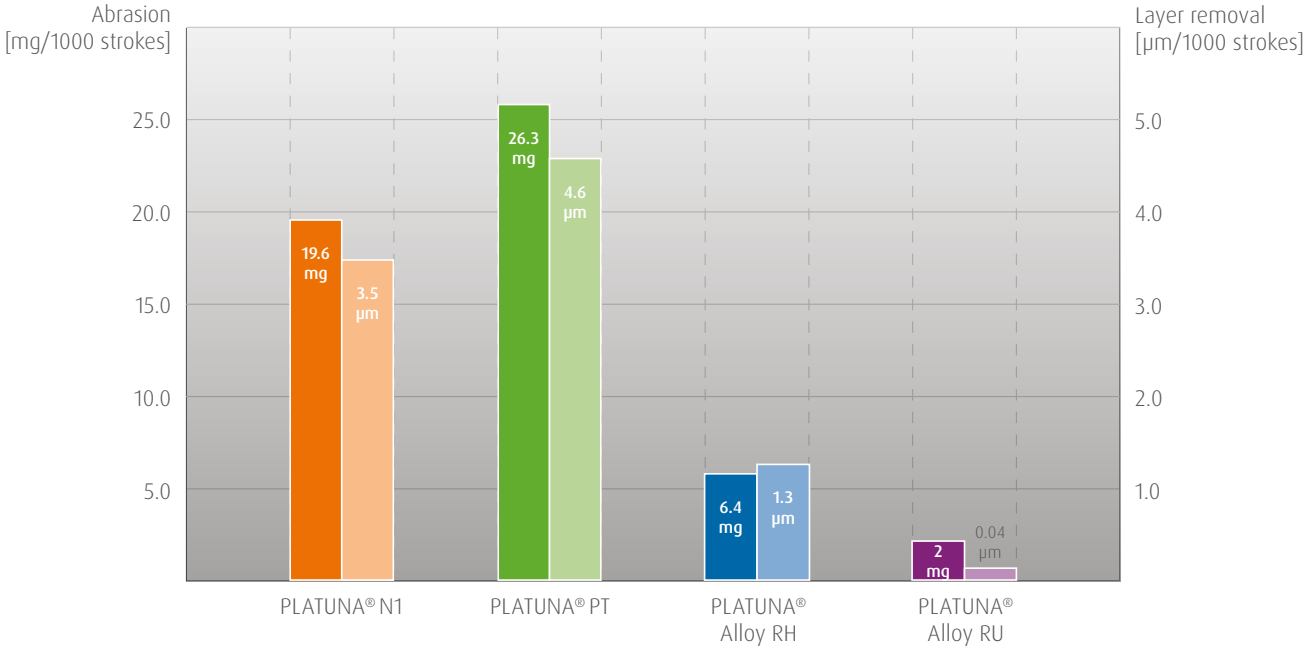
Coating characteristics	
Coating	Platinum rhodium
Purity	approx. 80 % Pt approx. 20 % Rh
Colour of deposit	White
Brightness	Bright, brilliant
Hardness of deposit HV 0.015 (Vickers) approx. values	not measurable, approx. 600 HV
Max. coating thickness	approx. 0.5 µm
Density	approx. 18.7 g/cm³

Color measurement L* and b* value
Neutral gray axis and blue-yellow axis



Wear test (Bosch-Weinmann)

1000 double strokes for 2 µm layer / emery strips with a grit size of 1000



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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Passion for perfect surfaces

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