

New Umicore hard gold plating without hazardous substances



The cyanide-free Umicore gold-copper electrolyte Auruna 3408 does not contain any hazardous substances or grain refiners such as arsenic, thallium, lead, cadmium, cobalt or tellurium (Image: Umicore)

With Auruna 3408, Umicore Metal Deposition Solutions (MDS) presents an innovative hard gold electrolyte that uncompromisingly meets the requirements of modern electroplating technology in terms of environmental compatibility, occupational safety and technical performance.

The cyanide-free gold-copper electrolyte Auruna 3408 from Umicore does not contain any hazardous substances or grain refiners such as arsenic, thallium, lead, cadmium, cobalt or tellurium - and offers the highest material quality and process reliability. It offers users the high-performance coating solution they have come to expect from Umicore MDS. At the same time, the elimination of hazardous substances enables a significantly simplified and safer production process in everyday operations. For example, no special protective measures such as respiratory protection or protective suits are required. There are no restrictions due to hazardous substance limit values, and disposal is simple and cost-effective as no toxic residues are produced. The elimination of hazardous substances minimizes the risk of regulatory requirements, incidents or temporary production stops, and its use creates a competitive advantage through sustainability. Despite their high fine gold content of 99.7 percent, the bright yellow high-gloss coatings deposited with Auruna 3408 impress with their exceptional corrosion resistance and a hardness of around 180 HV. Even in the standard electrolyte with a gold concentration of 5 g/l, layer thicknesses of up to 10 µm can be achieved. If the concentration is increased to 20 g/l, coating thicknesses of up to 200 µm are possible without cracking.

Gold-copper electrolyte with a wide range of applications

According to the manufacturer, Auruna 3408 impresses with its versatility in a wide range of applications. In the decorative segment, the electrolyte ensures high-quality, durable surfaces for jewelry, watches or spectacle frames that are not only visually appealing but also resistant to environmental influences. The high-gloss, light yellow gold surface gives jewelry, watches or eyewear a particularly elegant and durable finish. In technical applications such as connectors and contact surfaces, the deposited layer ensures excellent electrical conductivity and abrasion resistance. Auruna 3408 shows its strength particularly in the area of printed circuit board production. The low-stress, smooth surface provides excellent adhesion for solder and bonding wire and is also compatible with common materials such as copper, nickel, palladium or solder resists. The coatings offer excellent electrical conductivity, corrosion protection and abrasion resistance, making them ideal for demanding applications such as connectors or contact surfaces. Auruna 3408 also meets the highest requirements in highly specialized areas such as defence technology. 'The purity and hardness of the deposited layers enable compliance with the MIL standard - a decisive advantage for our customers in the defense and high-tech industries,' explains Martin Stegmaier, Division Manager at Umicore MDS. 'At the same time, we offer a solution that can be used worldwide without restrictions - safe, sustainable and high-performance.' Auruna 3408 can be easily integrated into existing production lines - in both rack and barrel processes. The simple refreshing of the electrolyte with coordinated supplementary solutions reduces downtimes and simplifies maintenance.

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