

Issue 37/2022


umicore
Metal Deposition Solutions

umicore goldpost

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In **Shenzhen**, we will participate in the International Electronics Circuit Exhibition from April 7 - 9. This is one of the most important exhibitions for PCBs in China.

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You can download this Goldpost issue as a PDF file from our website [mds.umicore.com](https://www.mds.umicore.com)



Dear readers,

A turbulent year, which was characterized by many challenges, has ended successfully.

I invite you to take a look back with this Goldpost issue. Our main focus in 2021 was on the development of new, innovative products. This includes the introduction of our RHODUNA® PT One, an alternative for pure rhodium for small scale applications. Furthermore, we were able to achieve several further developments in the anode area. I am also particularly proud that, despite the current restrictions imposed by Covid, we have been able to further strengthen our already very cooperative customer relationships.

Let us know how we can support you in your new challenges - gladly by digital means and hopefully soon again in a personal conversation.

All the best,

Thomas Engert
Managing Director

We are now Metal Deposition Solutions

We have decided to combine the expertise of the established Electroplating (EP) and Thin Film Products (TFP) business units under the Metal Deposition Solutions (MDS) business unit. Under this name, we will in future develop and market products for both high-quality electroplating and physical vapour (precious metal) deposition processes. This will enable us to offer high-quality products for both processes from a single source in the future.

The change in name has no effect on current day-to-day business

The most important thing for our customers is that the change of name of our business unit will not affect existing business relationships with our customers. We will retain all relevant business data, such as the legal name, our contact and bank data, or product names, unchanged.



The merger of the two business units Electroplating and Thin Film Products to form the Metal Deposition Solutions business unit also brings with it a new logo and a relaunched website: mds.umicore.com



Our existing product segments will be continued and developed without restriction.

Two business units with a joint goal

The current merger of the previously largely autonomous business units was the logical consequence, since the Electroplating unit also offers solutions for the semiconductor sector. The joint goal is to establish ourselves in the semiconductor segment as well as in the existing business areas through innovative products or to expand the business.



You can find more detailed information at: mds.umicore.com/we-are-now-mds



Umicore Inside - Personnel changes



As of 01.01.2022, **Mr. Uwe Wohlfarth** will take over as production manager for the electrolyte and salt production, job shop and electrode production areas at our site. At the same time he will become a member of the management. Uwe Wohlfarth has already been employed in our company since October 2004 and was successfully active as head of the EHS/QM staff unit in the past years.

Our customers, partners and interested parties in Europe can look forward to a new main contact: **Ms. Andrea Grau** has taken over the management of the European sales team as of November 1. From 2004 to 2016, the proven sales expert successfully led our International Sales team and thus already has extensive product and industry knowledge.



Mr Volker Wohlfarth will work for us at our Shanghai site in 2022. The aim is to promote business in the area of semiconductor processes and products locally and to intensify cooperation with our partner SHINHAO Materials.



Discover open positions at Umicore at:
mds.umicore.com/career



Proactive shipment tracking ensures delivery times

From experience, you and we know that there are sometimes events that can lead to delays through no fault of our own, especially in the international shipment of our goods. For this reason, we have introduced a customer-based tracking platform in which all milestones defined in our supply chain are stored. This allows delays or unplanned events to be reported proactively and appropriate actions to be taken in a timely manner.

However, the platform not only brings together the tracking data of our participating transport service providers. In future, we will also be able to provide you online with all the necessary shipping and customs documents.



When the goods are collected from our factory, the shipment information for your ordered goods is made available. From then on, the delivery process is constantly updated.



You can find more detailed information at:
mds.umicore.com/shipment-tracking





RHODUNA®
PT ONE



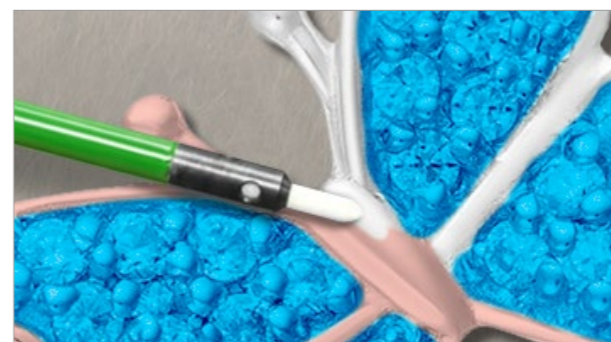
Due to the high social value of platinum, your product simultaneously gains psychological value and its price acceptance increases significantly.

Unique rhodium alternative for small batches



A RHODUNA® PT ONE layer consists of 20% rhodium and 80% platinum. This makes coating with RHODUNA® PT ONE far more attractive in price for you as a producer than coating with a pure rhodium electrolyte.

Like its big brother RHODUNA® PT, the ONE variant is an economical alternative for pure rhodium. However, with the difference that RHODUNA® PT ONE is designed for small batches and the metal content is reduced to one gram per liter. This allows extremely economical rhodium plating starting with the first liter of electrolyte - and with almost constant layer properties. Additional benefits include easy handling thanks to a simple work area and the reduction of the necessary components to an absolute minimum - apart from the initial concentrate, only water is required for electrolyte makeup.



PT PEN: Pen variant for targeted, partial rhodium plating

With RHODUNA® PT PEN, targeted, partial rhodium plating is possible with a pen plating unit. This is mainly required for multicolor coatings, repair work and coatings of small areas. The layer consists of 40% rhodium and 60% platinum.

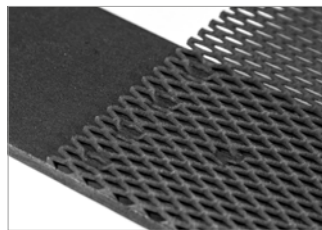


You can find more detailed information at:
mds.unicore.com/pt-one



PLATINODE® Cr3 sets the course for a future-oriented chromium(III) process

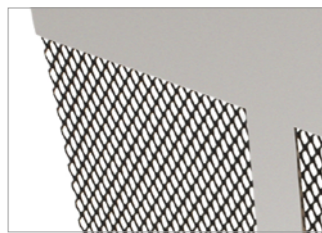
Chromium(VI) processes have had their day. Due to today's environmental and safety aspects, as well as legal developments, the industry has been using chromium(III)-containing processes for several years.



PLATINODE® Cr3 - MMO 187 LOC

Decorative chromium(III) processes

In order to maintain the stability and permanent function of the electrolyte and thus the quality of the coating during chromium deposition from trivalent solution, the use of insoluble anodes is essential. With our insoluble anode system PLATINODE® Cr3 - MMO 187 LOC, which is equipped with a special layer structure, there is no disturbing concentration of chromium(VI) even in continuous operation.



PLATINODE® Cr3 - Nb/Pt

Chromium(VI)-free Etching Systems

In Chromium(VI)-free etching systems, functional components are chemically reduced and must be re-oxidized in a separate electrolysis cell at an insoluble anode surface. This is perfectly possible with our PLATINODE® Cr3 - Nb/Pt. Our molten salt plating process applied to niobium for this purpose helps the anode to achieve enormous corrosion stability and longevity. At this high-quality level, this is a unique selling point in the equipment of Chromium(VI)-free processes.



You can find more detailed information at:
mds.umicore.com/platinode-cr3



Produce Economically Despite the High Increase of Iridium Prices with PLATINODE®



The sharp rise in iridium prices, and thus increased production costs, make a quick change necessary.

Change quickly to stay in the race

When is the right time for a change? Whenever the advantages outweigh the disadvantages! And this is the case with MMO anodes, which have remained stable in price in the past - a price increase of around 350% for Iridium in a very short time makes a pit stop necessary in the figurative sense. Therefore,

change now to an up to 25% Iridium reduced version - PLATINODE® MMO 186 LOC / 186 50 / 176. Thanks to optimization of the layer, the lifetime is the same as with higher iridium use. The efficiency of the anode also remains at a constantly high level.



You can find more detailed information at:
mds.umicore.com/change-quickly





AURUNA®
215 Pale

The subtle pale gold tones, which stand out from the crowd for this very reason, continue to be absolutely trendy.

Pale gold coatings are now also possible without allergies



Until now light gold layers were mostly only possible with the addition of nickel or cobalt - metals that not infrequently trigger allergic reactions for the wearer. Skin irritations in the form of reddened and itchy areas are the result.

AURUNA® 215, already established on the market due to its skin compatibility, was the basis for us to create a customer-oriented solution for pale gold end layers. The gold-iron-indium electrolyte, which deposits yellow-gold in the basic version, was fundamentally revised for this purpose.

The new "pale" version is in no way inferior to the conventional pale gold coatings in terms of appearance and quality - but with the decisive difference of being skin-friendly. A competitive advantage that opens up a significantly larger circle of buyers for you.



You can find more detailed information at:
mds.unicore.com/auruna-215-pale



Rose gold layers for fine jewelry

Whether earrings, bracelets or necklaces - rose gold is still very much in trend. To achieve the warm copper tone, our AURUNA® 500 LC is particularly suitable. The neutral electrolyte deposits 18-karat red gold-copper coatings. It also operates with a low gold content, no free cyanide and has a stable pH. The coatings are very hard and abrasion resistant. For gold-saving coatings, they also exhibit very good corrosion and tarnish resistance.

Rose gold jewelry is very popular because it flatters almost every skin type.



You can find more detailed information at:
mds.unicore.com/auruna-500-lc

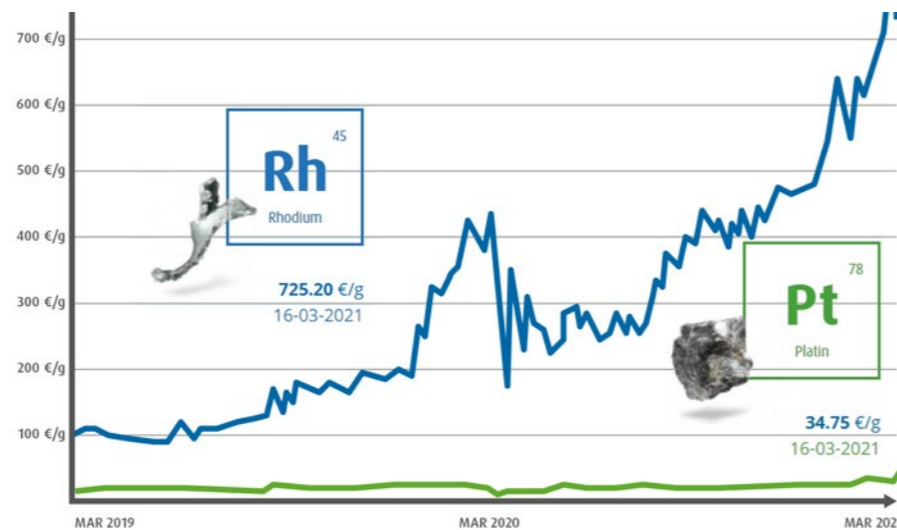


Foresighted calculation with platinum



Due to their skin compatibility, platinum coatings for medical applications have been established for years. More and more producers are switching to platinum coatings here due to the price of rhodium, as the switch also has no disadvantages in terms of quality. For example, our PLATUNA® N 1 with a purity of 99.99% does not cause skin reactions as known from typical metal allergies. But also for other decorative applications, the solid, white and high-gloss coatings are a real alternative.

For years, platinum coatings have had an enormous price advantage over coatings finished with rhodium. The almost constant platinum price enables a forward-looking calculation.



You can find more detailed information at:
mds.unicore.com/calculation-with-platinum



Coatings with PLATUNA® N 1 prevent the usual problems that occur with gold contacts.

PLATUNA® N 1 is also suitable for charging contacts and connectors

For wearables and cell phones, sales arguments such as a long service life and compatibility with fast charging devices are becoming increasingly crucial. But gold-plated charging contacts and connectors cannot meet these expectations because they corrode through contact with salt water, sweat, etc. RHODUNA® Alloy (rhodium-ruthenium) has therefore been established for years. Due to the current high price, however, we are looking for alternatives.

This is where our PLATUNA® N 1 comes into play. With its good electrical properties, high abrasion resistance and excellent corrosion resistance, the platinum layer offers a cost-effective alternative.



You can find more detailed information at:
mds.unicore.com/platuna-n-1





The report in the trade magazine PLUS (Leuze Verlag) highlights the challenges for new coating systems in high-frequency (HF) technology.

Changeover to new high-end PCB coatings

Recently, the renowned technical magazine PLUS (Leuze Verlag) published a report on our processes for high-end PCB coating. Editor-in-chief Volker Tischen and editor Sven Gramatke go into detail about our ENIG and ENEPIG processes in the 6-page technical report and show the possibilities of our DIG process.

Changeover to ENIG/ENEPIG processes through virtual setup

The report is based on last year's successful process conversion at our Austrian customer Piu-Printex. Georg Pohanka, CEO of the Viennese company, describes from the customer's point of view the virtual changeover under pandemic conditions during ongoing production and the reasons and the necessity of the changeover due to increased requirements.



You can find more detailed information at: mds.unicore.com/plus-report



Further product changes or innovations in 2021

15% gold saving thanks to inhibitor

By putting additives to the electroplated gold electrolytes, such as the proven AURUNA® 8100 or AURUNA® 8400, we offer you the possibility of reducing the amount of gold used.

Excellent bonding and solderability

PALLUNA® 452 has established in semiconductor technology. The electrolyte is now used especially where excellent bonding and solderability is required.

Suitable palladium complex

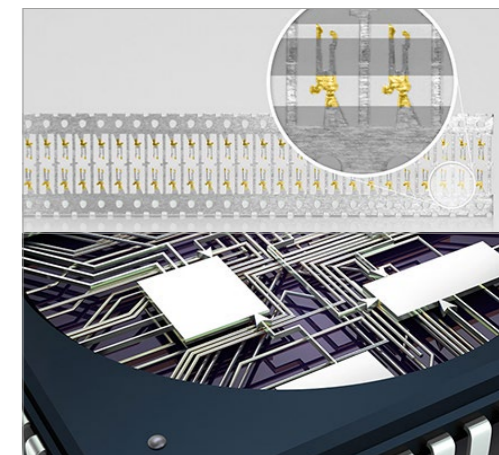
PALLUNA® 460 as well as its HP version is particularly suitable for palladium and palladium-nickel electrolytes with special requirements regarding impurities and pH-value.

Indium electrolyte for press-fit technology

Our new Indium 9200 is the first choice especially for reflow soldering, low temperature soldering and thermal interface material due to its easier maintenance and lower additive consumption.

Wear-resistant palladium-nickel

Our PALLUNA® 4700 is a high-speed electrolyte for the deposition of a hard and wear-resistant palladium-nickel alloy with good corrosion resistance.



Our employees are continuously working on product improvements and variations.



You can find a comprehensive product overview at: mds.unicore.com/product-finder



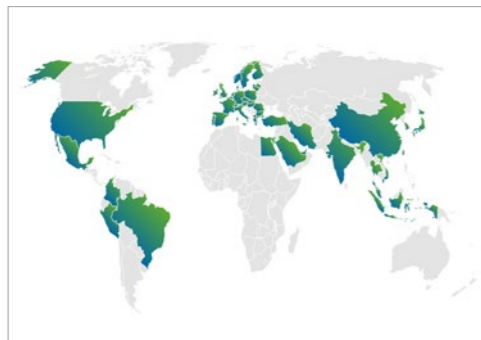
Events 2022



We look forward to welcoming you back to events in-person in 2022.



Last year, with a heavy heart, we deliberately withdrew from many planned face-to-face events. Only a few trade fairs were held on site when the pandemic situation permitted.



We hope to be able to welcome our customers and interested parties again in person at events in all parts of the world in the course of the coming year. Preparations for this are underway as usual in order to be able to be on site under the appropriate conditions. Due to the still vague situation, we recommend to visit our event website regularly if you are interested in a personal exchange - or more conveniently, to subscribe to our newsletter.



All events constantly updated at: mds.unicore.com/events



Let's go for zero

Net Zero GHG. Zero regrets. Endless possibilities.

The Umicore Group has set itself the goal of becoming climate neutral by 2035.

Umicore Group sets ambitious sustainability targets

At Umicore, we see it as our corporate responsibility, or rather our mission, to use our technological know-how, scientific expertise and entrepreneurial reach to be an industry leader in sustainability. We are committed to rethinking and transforming processes. By 2035, our goals are: Zero greenhouse gas emis-

sions, Zero harmful consequences, Zero inequality and Zero regrets.

Let's make a real impact. Let's go for zero!



You can find more detailed information at: mds.unicore.com/responsibility



Right composition.
Perfect surface.



mds.umicore.com

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