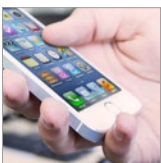


No more fear of contact with the plating systems of the future



Anyone allergic to nickel knows the problem well: shiny silver surfaces often contain nickel, and they're everywhere. If your skin comes into contact with these objects, an allergic reaction can be quick to follow. Lawmakers are reacting with regulations - now you have to replace the nickel without compromising on quality.

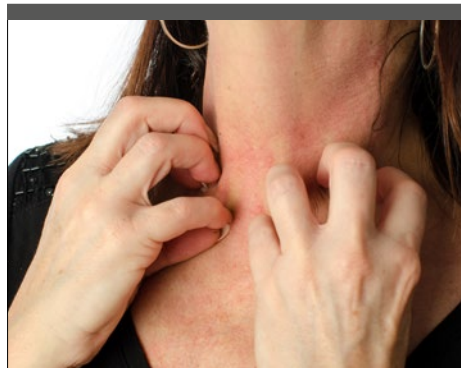
YOUR PARTNER OF CHOICE: UMICORE ELECTROPLATING

With over 30 years of experience in nickel-free plating systems, we are happy to help you on your way to nickel-free production.

Nickel is the world's main contact allergen.

In Europe, around 15 to 20 percent of women and around five percent of men are sensitive to nickel. This sensitivity affects around 40 percent of women under 30. Once someone has developed a sensitivity, constant or repeated contact with the allergen causes the skin or mucus membrane to react with inflammation (e.g. skin rash).*

Does your skin itch and go red where your necklace was touching yesterday? It could be a nickel allergy. But it's not just in jewellery that nickel is used - a range of other everyday items often contain nickel, and can therefore lead to allergic reactions.



The most commonly affected areas are earlobes (earrings), necks and arms (jewellery, watches), hands (writing tools, needles and handles) and hips (metal zips and trouser buttons).

In order to reduce the risk of sensitivity to nickel, the use of nickel in consumer objects was already being regulated by the European Nickel Act in the 1990s (later replaced by §27, ann. XVII, Reg. (EC) No 1907/2006).

This set out maximum levels of nickel that could be released on direct and prolonged contact with skin. The maximum was established as 0.5µg/cm²/week for a period of two years under normal use. The idea of prolonged skin contact was not defined.



In order to close this gap, the ECHA (European Chemical Agency) developed a scientifically supported interpretation of 'prolonged skin contact' in relation to the nickel limit (entry 27, annex XVII to REACH). This interpretation was introduced in 2014 and published on the ECHA website (ECHA Q&A No 935).

* Source: <http://www.apotheken-umschau.de/allergie/nickelallergie>

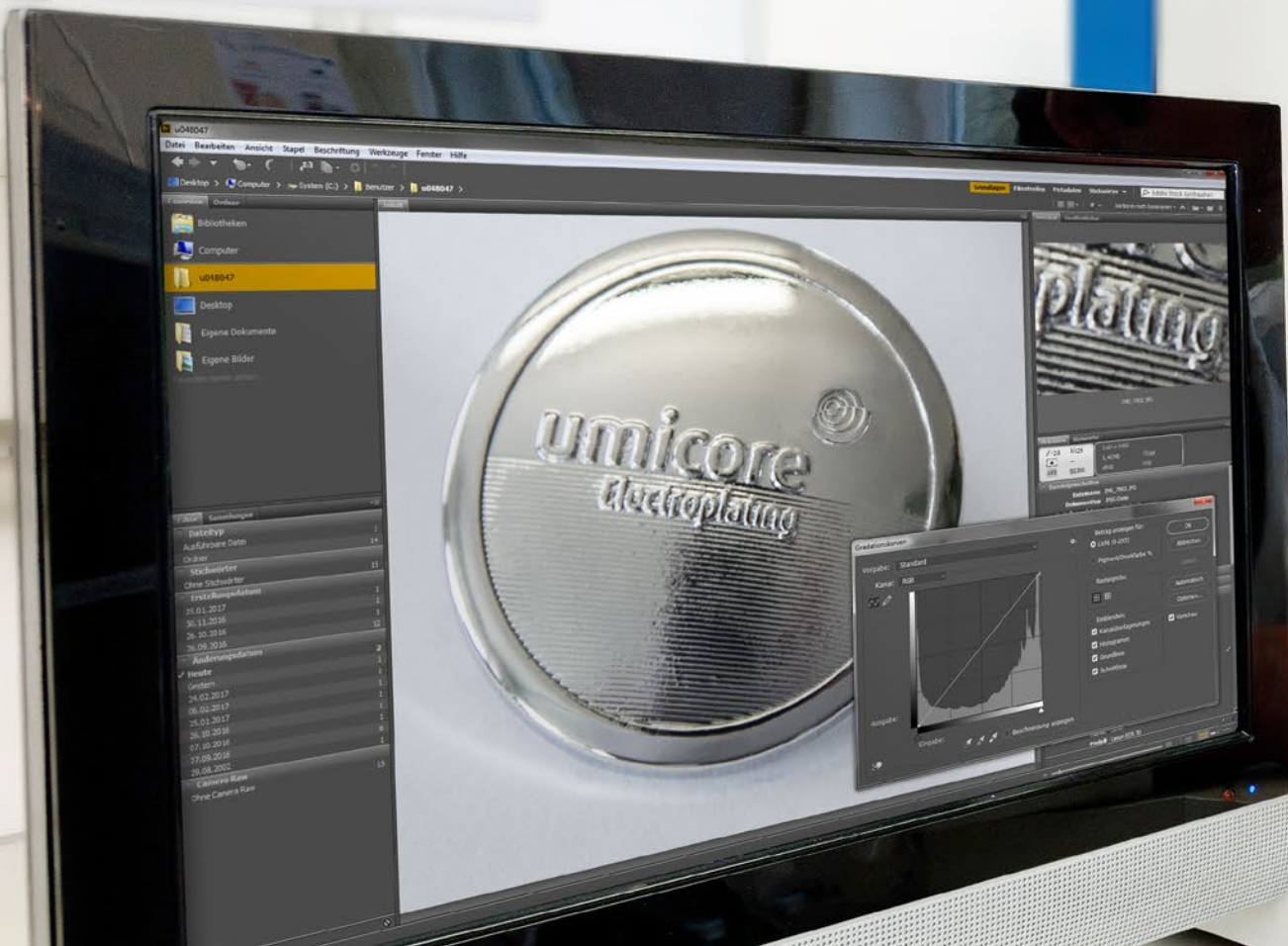


ECHA DEFINITION OF PROLONGED SKIN CONTACT

Prolonged contact with the skin is defined as potential contact between the skin and items containing nickel for more than

- 10 minutes for three or more occasions within two weeks, or
- 30 minutes for one or more occasions within two weeks.

This definition of terms has resulted in many consumer objects that previously were not affected by the nickel limit now being covered by the 0.5µg/cm²/week maximum: fashion jewellery, clothing accessories, craft tools, writing tools, glasses frames, tools, buckles, handles and steering wheels, personal hygiene tools, mouthpieces, kitchen appliances and electronic devices, and many more.











UMICORE GALVANOTECHNIK GMBH OFFERS YOU VARIOUS ALTERNATIVES TO MEET THE REQUIREMENTS OF REACH

ALTERNATIVE PLATING TO AVOID NICKEL

You don't use nickel in your products for no good reason. Nickel fulfils several tasks that you don't want to do without: corrosion protection, a glossy finish, colour, strength and resistance to abrasion.

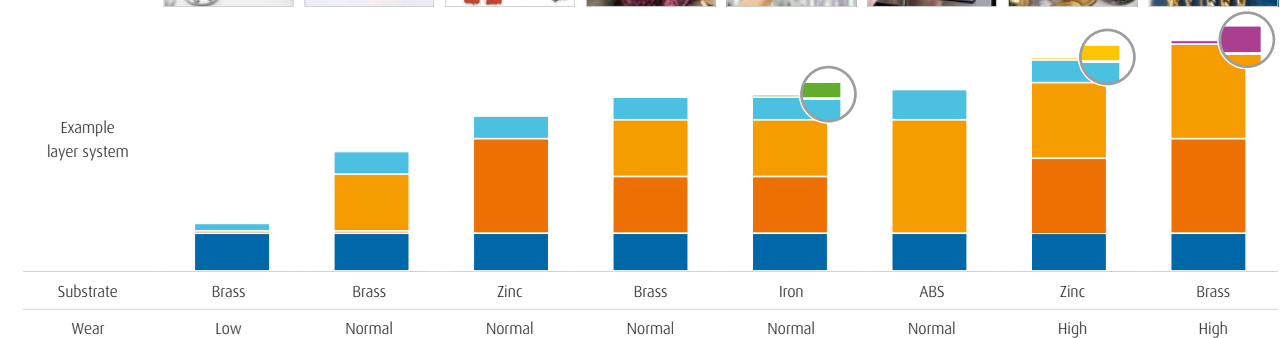
Plating using our processes retain these properties by using two separate layers. This lets you guarantee nickel-free production without compromising on quality and function.

Further layer (if required)	Chrome, gold etc			palladium, gold, chrome, anti-tarnishing process etc	Further layer (if required)
Colour, gloss, levelling, texture, corrosion resistance, hardness, wear	Nickel			White bronze, palladium	Colour, corrosion resistance, hardness, wear
Bonding layer (if required)	Nickel, copper			Copper	Levelling, gloss, texture (if required)
Substrate	Fe, Al, Cu, CuZn, ABS, Zn			Copper	Bonding layer (if required)
				Fe, Al, Cu, CuZn, ABS, Zn	Substrate

THE RIGHT LAYER DEVELOPMENT FOR THE PRODUCT

There is no standard solution when replacing nickel. We can quickly find the right process for your product, as we can use our experience to differentiate between three different levels of wear (low, normal and high).

It goes without saying: the more wear, the more materials used and the higher the cost. We can help to establish a high-quality and yet cost-optimised layer system for your product.



■ Substrate ■ Copper (CN) ■ Copper (acidic) ■ Copper-tin-zinc (White bronze) ■ Chrome ■ Gold ■ Palladium

Do you have any questions, or would you like
a non-obligation offer to suit your product?
We would be happy to help, and look forward to you getting in touch.

UMICORE GALVANOTECHNIK GMBH

Klarenbergstrasse 53 - 79
73525 Schwaebisch Gmuend
Germany

E-mail: galvano@eu.umicore.com

Phone: +49 (0) 71 71 / 607 - 186

Fax: +49 (0) 71 71 / 607 - 315

www.ep.umicore.com


umicore
Electroplating