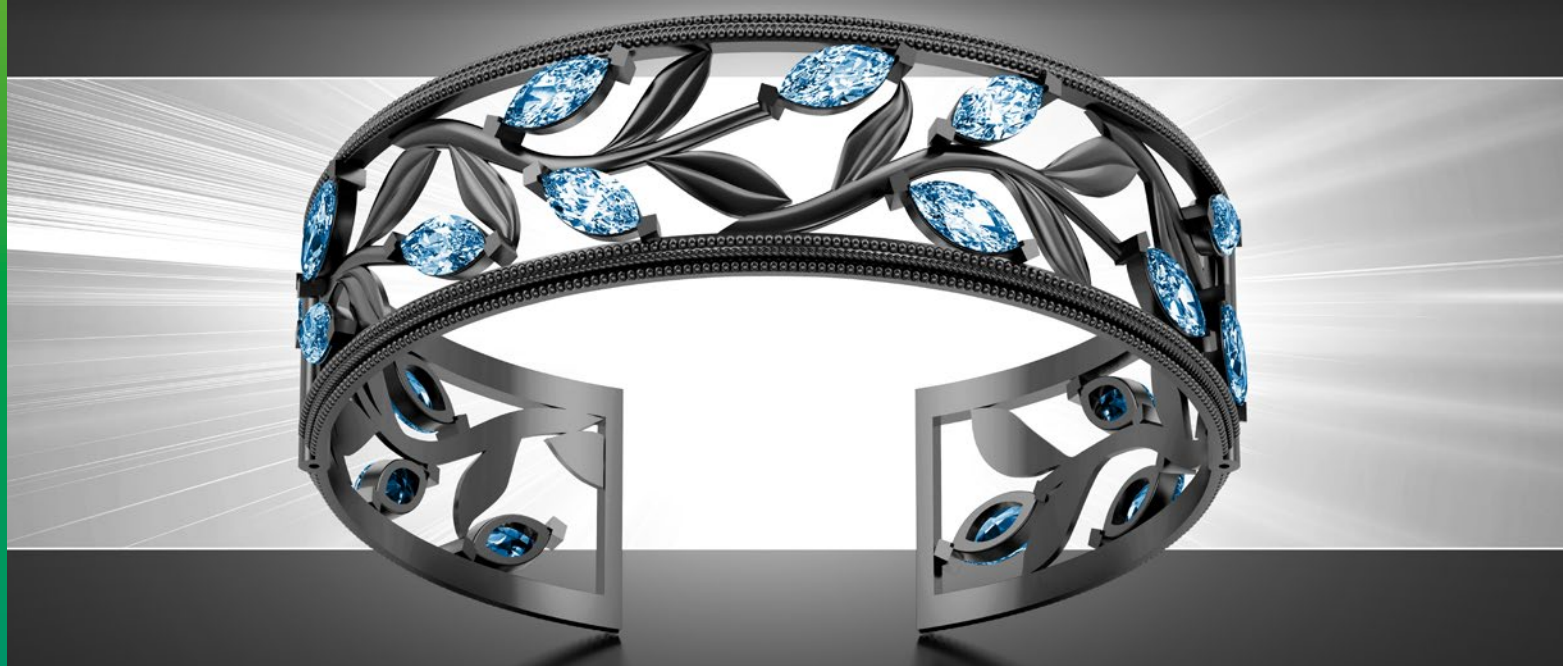
RHODUNA®-Alloy Black 1



Give the day
the elegance of night.

www.rhoduna.com

Attractive, appealing and elegant. This is as true for the night as well as for precious metals. Transfer this elegance to your products - also at daytime.

ALLOY WITH UNEQUALED CHARACTERISTICS

RHODUNA®-Alloy Black 1 deposits a dark precious metal alloy of rhodium and ruthenium with a noble anthracite hue - without colour shift. The coatings produced are extremely resistant to abrasion and offer a price advantage of almost 50 percent.*

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Dark precious metal alloy with impressive properties

RHODUNA®-Alloy Black 1 is probably the only alloy to combine all the properties required of a dark precious metal surface. The most important features are abrasion resistance, an attractive price and, of course, a sophisticated and adjustable shade of black are surely the most important features.

Black rhodium is only of minimal interest to most mass producers due to the high price of the precious metal.

Black ruthenium is only suitable for everyday objects due to its low abrasion resistance and slightly brown tone.

RHODUNA®-Alloy Black 1 combines both metals in equal parts into one electrolyte without the negative properties of either.

In combination with RHODUNA® Black 471, even deep black final coats are possible.

The elegant RHODUNA®-Alloy Black 1 alloy exceeds previous expectations of a dark precious metal coating, making it a real milestone in surface finishing.

Especially in mass production, the incredible color consistency of the sophisticated dark anthracite stands out - differences from the set black shade cannot be recognised with the naked eye. This applies whether the coating is glossy or matt.

The degree of blackness is limited in favor of color consistency and easy handling of the electrolyte. If a darker or completely black final result is desired, we have you covered. RHODUNA®-Alloy Black 1 is ideal as an interim coating for RHODUNA® 471 Black. This lets you adjust the degree of blackness up to a deep black final layer to meet your needs.

Jewelry, plug contacts, writing implements, bathroom fittings or even car interiors can now be given a finish in the black shade of your choice.

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Joachim Grimm (Sales Manager, Technical Services) and Inge Baumann (Technical Services Decorative Applications) have a knack when it comes to dark surface finishes.

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RHODUNA®-Alloy Black 1

FULFILS ALL REQUIREMENTS FOR A DARK PRECIOUS METAL SURFACE FINISH

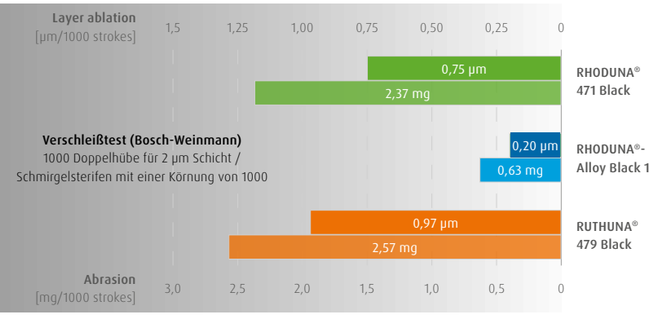
COST SAVINGS OF ALMOST 50% COMPARED TO A PURE RHODIUM ELECTROLYTE

Due to the 1:1 ratio of rhodium and ruthenium, the electrolyte is not just extremely easy to use but also provides financial benefits.

Ruthenium has almost always had a very stable and comparably low price. The price of rhodium, on the other hand, has almost quadrupled within two years. Thanks to the composition of the electrolyte, a saving of 45% or more is realistic compared with a pure rhodium electrolyte.

Find out how the introduction of or transition to RHODUNA®-Alloy Black 1 can impact your business with an individual price calculation. Together with the opportunity to have your own color pattern, we give you no-obligation support in making your decisions.

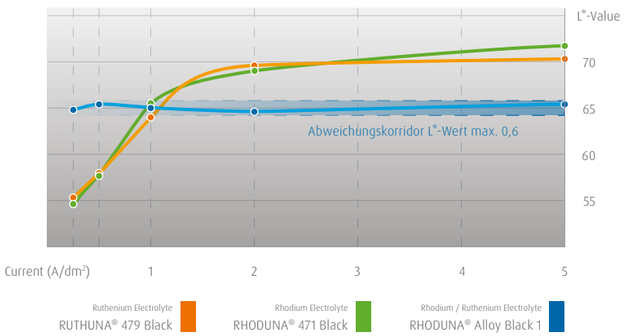
INCOMPARABLE ABRASION RESISTANCE FOR DARK PRECIOUS METAL LAYERS



Maximum layer removal of just 0.2µm or 0.63mg (measured using Bosch-Weinmann) is another USP of RHODUNA®-Alloy Black 1. Compared with black rhodium or ruthenium electrolytes, the results are four times better.

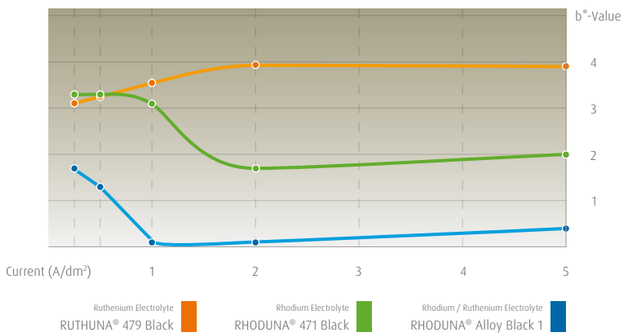
This abrasion resistance promises a long life for your coated product, and can be compared to that of abrasion-resistant light rhodium layers.

SOPHISTICATED ANTHRACITE WITHOUT COMPROMISE / COLOUR CONSISTENCY



The sophisticated look of the final layer is not a matter of luck. Up to now, the degree of black was adjusted by current. With RHODUNA®-Alloy Black 1, this is no longer needed thanks to almost perfect color consistency. The result is an almost unknown consistency of the L* value (L*a*b* color space) through standard current strengths - so shade deviations are mostly prevented during production and during any follow-up batches.

SOPHISTICATED ANTHRACITE WITHOUT COMPROMISE / COLOUR NEUTRALITY



For optical colour neutrality, you need a* and b* values under 1 in the L*a*b* colour space. This can be realised for a* for many dark layers, but b* under 3 is almost impossible. Yellow and brown shades are the result.

With an average b* value of 0.6 above the standard currents strengths, RHODUNA®-Alloy Black 1 displays no discolouration that can be seen with the naked eye.

Please note: all prices, price comparisons and calculations are based on Umicore Electroplating's average values as of August 2019.

Right Composition.
Perfect Surface.

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