

Application example

Rohde & Schwarz GmbH & Co. KG

© Image source: Rohde & Schwarz

Oemeta NOVAMET 910 has a proven track record in the machining of high-frequency technology products.

About Rohde & Schwarz

At the Rohde & Schwarz plant in Teisnach, around 800 tonnes of aluminium are processed into high-performance products every year in the metal-cutting production department, which operates more than 80 machine tools. "Aluminium accounts for about 80 per cent of the material mix, which also includes copper, bronze, brass and of course steel," says Martin Ebner, a technology specialist in metal-cutting production.

High-frequency technology in particular places the highest demands on precision. Here, compliance with tolerances of $\pm 2 \mu\text{m}$ is required. The 3- and 5-axis machining centres mill, turn, drill, ream and cut threads. The machining volume is often large for the workpieces, which are clamped as blocks, often leaving the machine as a filigree grid structure.

The challenge.

At Rohde & Schwarz, housings, half-shells, shafts or frames and connector pieces for sophisticated products are manufactured to a high degree of vertical integration.

The site in the Bavarian Forest is highly specialised, and the processes applied subsequent to the machining place enormous demands on the cooling lubricant. The water is very soft, for example, which means a lot of foam is produced. "With the previous product, we had to use a lot of de-foaming agent," recalls Martin Ebner of Rohde & Schwarz. "There was also a very irritating odour, and skin irritation even occurred in some cases. "Overall performance was not satisfactory – and consumption was very high, too."

Approval for NOVAMET 910 took place after an extensive test phase.

Oemeta came in as a partner for lubrication and the supply of the suitable cooling lubricant (MWF). So from the summer of 2014 onwards, extensive testing was carried out before the relevant cooling lubricant was approved for series production from autumn 2015. The highly versatile boron-free and formaldehyde-free cooling lubricant NOVAMET 910 is now used.

NOVAMET 910 offers exceptionally good performance with a wide range of applications and materials, low consumption, high stability and long tool life. "So we've actually been able to halve some of the coolant maintenance intervals at the plants and feed the cleaned coolant back into the overall process," says Ebner. "We're really satisfied with that."

The solution

NOVAMET 910

NOVAMET 910 is ideal for machining – whether turning, drilling or milling. The product offers impressive high performance with a wide range of applications and materials, as well as low consumption. In addition, NOVAMET 910 is free of boric acid and formaldehyde.

The switch to Oemeta MWFs improves results in several dimensions.

Good material compatibility with aluminium, stainless steel and non-ferrous metals.

NOVAMET 910 is a water-miscible, broadly applicable cooling lubricant for machining which is free of boron and formaldehyde. It offers a particularly high level of performance in a wide range of applications and materials as well as reduced consumption.

Material compatibility is as good with aluminium and stainless steel as it is with non-ferrous metals. "Precisely what we need," says Ebner.



© Image source: Oemeta

At Rohde & Schwarz Teisnach, housings, outer bodies, shafts or frames and connectors for the sophisticated products are manufactured in great depth.

Improvements in various machining operations.

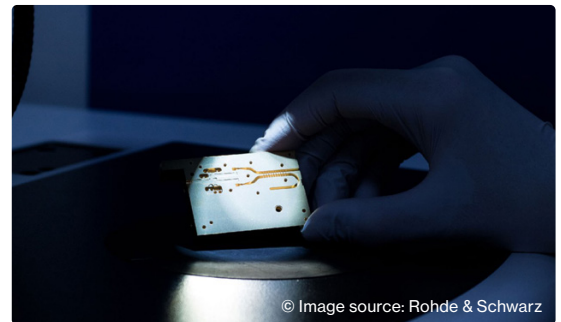
The concentration at the Teisnach plant is 7 – 9%. The individually filled machines are replenished via a central supply system. And it wasn't just the machining processes that saw striking improvements: in addition to the improved residue behaviour and significantly extended service life with extended cleaning intervals, the odour almost completely disappeared, too.

“In addition, the surface quality and the subsequent coating result improved with our NOVAMET 910,” says Hubertus Hatzl, Area Sales Manager South-East at Oemeta and longstanding advisor to Rohde & Schwarz.

Thumbs up for occupational safety and cleanliness thanks to NOVAMET 910.

Occupational safety has also improved – due to the excellent skin compatibility of NOVAMET 910 with a pH value of 9.4 at 5%.

And there's something else that Rohde & Schwarz machining production specialist Martin Ebner is keen to mention: “Our machines and workpieces are much cleaner than before.” “That's because of NOVAMET 910“, explains Hubertus Hatzl.



© Image source: Rohde & Schwarz
The machining volume is large for workpieces that are clamped as blocks and often leave the machine as filigree components.

Intense collaboration work ensures measurable success while at the same time strengthening the partnership.

All these improvements have led to a solid trusting relationship between Rohde & Schwarz Teisnach and Oemeta – a great example of sound partnership through collaboration, which is just what the two companies' philosophies are all about. In this way, products manufactured with precision at the Rohde & Schwarz plant in Teisnach for transmitter systems, digital radio, DAB radio or critical infrastructure such as air traffic can continue to contribute to secure communications – also helping ensure that holiday flights land safely – “roger and over”.

The following improvements were achieved:

- Improvement of surface quality and the subsequent coating result
- Improved occupational safety due to the excellent skin compatibility of NOVAMET 910
- Cleaner machines and workpieces
- Better residue behaviour
- Significantly extended service life with extended cleaning intervals
- No more odour



© Image source: Suxes
The improvements have led to a solid relationship of trust between Martin Ebner (left) of Rohde & Schwarz and Hubertus Hatzl of Oemeta

Company profile – Rohde & Schwarz GmbH & Co. KG

With its leading solutions in the fields of Test & Measurement, Technology Systems and Networks & Cybersecurity, the Rohde & Schwarz technology corporation is one of the pioneers of a secure and interconnected world. Founded more than 85 years ago, the Group is a reliable partner around the globe for its customers in the business and administrative sectors.

When it comes to communication, Rohde & Schwarz is in its element: among other things, the Group manufactures components, devices and systems for measurement, radio and transmission technology to a high degree of vertical integration. Precision in the μm range is ensured by the plant in Teisnach: it is a system supplier within the company's own network and a competence centre for mechanical and electronic production.

