



FOCUS:

Sustainable, systematic
value creation

Targeted recycling enables innovative and sustainable material solutions.

Play. And learn.



Immerse yourself in the world of materials in a playful way. Our new material quartets card game combines guaranteed fun with educational value! Enter our raffle to win one of these exclusive card games.

More on page 2

New standards in titanium recycling for the Diver [AIR] diving watch

Like the watch manufacturer Ulysse Nardin, thyssenkrupp Materials Schweiz also strives to push the boundaries of what is feasible. In collaboration with titanium manufacturer TiFast, the recycling rate for titanium was increased from 30 to 50 % to an impressive 90 % while adhering to the strict standards for aviation and medical technology applications. The result of this groundbreaking collaboration is the Diver [AIR] diving watch, which recently celebrated its world premiere.

More on page 3



Your partner for an environmentally
conscious future

Sustainability is crucial for the future of our industry. With the greenability programme, we support you in finding sustainable and economically viable ways to continuously reduce your emissions.

More on page 3



thyssenkrupp

Sustainability in times of crisis



Dear Reader

In challenging times, we all understandably focus on being able to pay the bills. In such situations, sustainability often seems like a luxury. Nevertheless, you and we are only in the market because we have handled our internal and external resources sustainably and economically over the years.

The hunt for attention

Greenability, CO₂ emissions and circular economy are buzzwords that have been heavily stressed and sometimes misused. Nowadays, everything is green, vegan and recycled – at least if you believe the commercials. What can you believe and what will be different tomorrow? True sustainability is not a buzzword, it is an attitude – making it visible to the outside world is our job.

Data you can count on

As the leading materials service provider, it is our stated goal to provide you with data and information that you, as our valued customers, can count on and that is reliable in the long term. Not only did we help co-develop our 90 % recycled titanium ECO-90 “made in Italy”, but we also had the processes DNV-certified. We stand behind that with our name.

Our support for your sustainability

We offer you a wide range of options for demonstrating your sustainability ethos to the outside world, complying with new CO₂ emission regulations and sourcing raw materials locally and sustainably. Sustainability is not rocket science. You have been doing it for a long time. Today, it just needs to be improved, documented and communicated to the outside world – that’s what we are here for as your strong materials service provider.

I hope you enjoy reading this issue of Gazette, which contains many fascinating topics!

Sincerely yours

Daniel Hagen

Head of Department Special Alloys,
thyssenkrupp Materials Schweiz AG

“Doing is like wanting – just bolder”

Sustainability is not a matter of big words but rather our day-to-day actions. At thyssenkrupp Materials Schweiz, responsible business practices have long been more than a strategic goal – they are part of our corporate culture. In this interview, CEO Claudio Roth talks about how we create closed cycles, how we work with our customers on sustainable solutions and the importance of traceability.



Claudio Roth,
CEO thyssenkrupp
Materials Schweiz

Sustainability is a big issue. What are the specific ways that it is put into practice at thyssenkrupp Materials Schweiz?

We like to say: “Doing is like wanting – just bolder.” This guiding principle sums up our approach. For us, sustainability is not an add-on but an integral part of our business. It starts with every single employee – whether in shop-floor meetings, on safety days or in the training of our apprentices. We promote awareness that resources are valuable and that responsible action begins on a small scale.

One point of emphasis is the circular economy.

How is it being implemented in specific terms?

We see metals as valuable materials – never as waste. Together with our customers, we develop return processes in order to separate materials and return them to the production cycle. For

example, our customers’ plastic injection moulding tools are not simply disposed of after their planned service life but are taken back by us and sent for recycling after being sorted into different types of scrap. This reduces the carbon footprint of our products while helping our customers achieve their sustainability goals.

Transparency is a key issue. How do you support customers in this process?

Examples include the new ink and laser marking system and the t-kontrol® customer platform. Both enable our products to be traced back to their origin. This builds trust and supports our customers in complying with regulatory requirements. It also gives them the opportunity to demonstrate sustainability, such as in audits or in their communications with their end customers.

What can our customers expect in the future?

We are continuously developing our sustainability strategy together with our customers. Whether that is through more efficient logistics processes, new digital solutions for collecting data or investing in renewable energies. Our aim is not simply to keep pace but to lead the way. For us, sustainability is not a project with an end date but rather an attitude that drives us on a long-term basis.

Claudio Roth, thank you for this interview.



[Read the complete interview here](#)

Discover metallic materials in a playful way

What could be more exciting than exploring a challenging subject through play? To make it easier for people to familiarise themselves with the world of metallic materials, our apprentices set out to develop a quartets card game for materials.



Material quartets

For starters, our apprentices defined the structure of the playing cards. Then they determined the content of the 32 cards. There would be four materials from each of the eight groups: tool steel, stainless steel, engineering steel, aluminium, titanium, nickel, brass and copper. The apprentices wrote a short description and developed the six game criteria with the corresponding values. And of course, there had to be a picture of a typical application for visual clarification. The results are impressive – and a fun way to explore our materials. Let’s play!

Scan the QR code now and win one of 25 exclusive material quartets sets!



Quartet raffle

The impossible, made possible: The lightest mechanical dive watch Diver [AIR] from Ulysse Nardin



Find out more about
Ulysse Nardin



Find out
more about TiFast

“If it’s possible, it is done. If it’s impossible, it will be done,” said Paul-David Nardin, son of the founder of the Ulysse Nardin watch factory of the same name, in 1876. This philosophy also inspires thyssenkrupp Materials Schweiz and TiFast, the Italian titanium manufacturer, to create groundbreaking innovations.

Recycling steel and aluminum is okay, but titanium? Impossible!

That’s how it sounded when the founders of TiFast decided to produce high-quality titanium alloys with a previously unprecedented recycling percentage. TiFast, near Rome, is now known as a pioneer in the sustainable production of titanium, e.g. for aviation, medical technology and motor racing. Driven by passion and conviction, the engineers at TiFast started the manufacturing process long before the words recycling and CO₂ reduction dominated the headlines.

Melted under vacuum

Oxygen is destructive for titanium; depending on the alloy, the maximum percentage may be 0.40 %, 0.20 % or even 0.13 %. Once oxygen has been dissolved in titanium, it is hard to get rid of it. Unlike other metals, titanium must therefore be melted under vacuum to avoid contact with oxygen under all circumstances. The process is energy intensive. To reduce energy and raw material costs, TiFast uses up to half titanium scrap, which is collected locally, i.e. in Switzerland and other European countries. The remainder consists of high-purity titanium sponge, which is free of oxygen. By mixing 30–50 % titanium scrap with titanium sponge, it is possible to comply with the maximum limits for the oxygen content. To do this, however, you need to know what type of scrap is being delivered – i.e. each individual part is checked for its chemical composition. The surface is then cleaned of the natural oxide layer to ensure that as little oxygen as possible enters the melt.



Image: ©Ulysse Nardin

Recycling titanium okay, but 90 %? Impossible!

Like Ulysse Nardin, thyssenkrupp Materials Schweiz wanted to push the boundaries and increase the recycled content of titanium from 30–50 % to at least 90 % (hence the name ECO-90). This while complying with the standards for aviation and medical appli-

cations. Thanks to TiFast, the feat was a success. The close collaboration inspired top performance and created new manufacturing processes. As a side effect, CO₂ emissions were reduced by almost half compared to traditional titanium production. After all, around 50 % of total CO₂ emissions occur in the production of the titanium sponge, which is now almost completely replaced by carbon-neutral recycling. The remaining half is generated through vacuum melting and subsequent processing into rods. In order to meet the very high requirements of the watch industry and in particular of Ulysse Nardin, the Titanium ECO-90 bars produced by TiFast were additionally subjected to the well-known HORLOBARRE process under our direction. This special treatment, developed by thyssenkrupp Materials Schweiz AG, makes titanium stress-relieved and easy to machine. This is what enables the production of extremely dimensionally stable micromechanical components. Such as those required for the lightest mechanical dive watch ever made, the Ulysse Nardin Diver [AIR]. This world premiere was recently unveiled at the Watches and Wonders in Geneva.

Less waste, lower costs, more sustainability

HORLOBARRE ECO-90 titanium bars from thyssenkrupp Materials Schweiz AG also significantly reduce tool wear and reduce scrap, saving time and money. Less waste also means a sustainable reduction in the CO₂ footprint during processing.



Sustainability solutions with greenability

Sustainability is crucial for the future of industry in general and for projects using metallic materials in particular. With our greenability programme, we support our customers in their individual endeavours to find sustainable and economically viable solutions to continuously reduce their emissions.

greenability materials: We offer a range of CO₂-reduced materials specifically designed to minimise the environmental impact of your production processes. These materials meet the highest quality standards and enable you to achieve your sustainability goals without compromising on performance.

greenability transparency: Our DNV-validated product carbon footprint calculator (PCF calculator) allows you to accurately calculate the carbon footprint of your products in detail. By taking into account all relevant emissions sources throughout the value chain, you get a comprehensive understanding of the climate impact of your products.

greenability services: We support you in analysing your current processes, identifying potential improvements and implementing measures that lead to more sustainable value creation. Our expertise in environmental management, energy efficiency and CO₂ reduction helps you achieve your sustainability goals.



Learn more about the greenability programme (in french)

Order your product carbon footprint report now!

Our product carbon footprint report (PCF) provides your company with detailed insights into the carbon footprint of your products. With the help of our PCF calculator, we analyse every stage of the product life cycle according to the cradle-to-gate approach and provide you with a well-founded calculation to improve your sustainability strategies.

Are you interested in the carbon footprint of your materials ordered from us, or have you already received specific requests from your customers? Then please contact Marco Näf (see back for contact details) and order your product carbon footprint report.



Download a PCF sample
report now

Making steel lighter



Image: © Otto Hofstetter AG

Together with thyssenkrupp Materials Schweiz, Otto Hofstetter AG aims to reduce its carbon footprint.

Many customers of Otto Hofstetter are under pressure to improve the environmental impact of their company and its products. Together with thyssenkrupp Materials Schweiz, the tool manufacturer is looking for ways to reduce the environmental footprint of its tools.

As a manufacturer of high-performance tools for PET preforms, packaging and medical applications, Otto Hofstetter AG develops solutions that are impressive in terms of quality and durability and help to meet ever more demanding requirements.

Many of its customers are national or globally renowned brands that are under growing pressure to reduce their CO₂ emissions. This development is also increasingly influencing the choice of production equipment. The environmental footprint of a plastic injection moulding tool and the supplier's commitment to ESG issues are increasingly becoming decisive criteria when awarding contracts – an assumption that has been confirmed by specific enquiries from the market.

One of the primary factors in reducing the carbon footprint is the selection of materials. Otto Hofstetter AG and thyssenkrupp Materials Schweiz have been working closely together for many years to use high-performance steels with a favourable CO₂ footprint. Motivated by the successes that have already been achieved, we are continuously breaking new ground to further optimise the use of materials and develop methods for increasing the recycling rate for processing waste and tools. The objective is to provide tools with an even longer lifespan, greater efficiency and improved recyclability. Customers therefore benefit not only from technical excellence but also from more resource-efficient production.



Find out more
about Otto Hofstetter AG



Otto Hofstetter

Empowering a clean industry for future generations

When renewable energy becomes industrial progress: thyssenkrupp nucera combines technological strength with sustainable thinking for the transformation of the industry.

thyssenkrupp nucera offers world-leading electrolysis technologies with extensive knowledge in engineering, procurement, and construction of electrochemical plants. With over 600 successfully installed projects in the chemical industry, the company has developed two strong portfolio segments in chlor-alkali and green hydrogen that create synergies and provide innovative solutions for industrial progress and green value chains.

thyssenkrupp nucera's water electrolysis technology harnesses the power of renewable energy to produce green hydrogen at industrial scale, leaving no greenhouse gas emissions behind. For an industry fueled by clean energy – a major step towards climate-neutrality.



Image: © thyssenkrupp nucera

Alkaline Water Electrolysis Technology scalum® for the production of green hydrogen.



Find out more

“tk360” no. 4 on pump and compressor engineering

In the next issue of our customer magazine “tk360”, we turn to another exciting topic: pumps and compressors. Manufacturers of pumps and compressors literally keep the world flowing. We are already looking forward to sharing interesting projects and solutions on this topic with you next autumn.

Your contact person for the topic of sustainability

Do you have any questions about our greenability programme, or would you like a personal consultation on the complex issue of sustainability? Marco Näf will be happy to help you meet the requirements, regulations and customer demands that are relevant to you.

“I look forward to supporting you
on your path to sustainable
and economically viable solutions.”



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2025 trade shows: We look forward to your visit



3–6 June
EPHJ Geneva
Stand N46



9–10 September
Swiss Medtech Expo Lucerne
Stand B2040



19 September
Ostschweizer Technologie Symposium St.Gallen

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