



Furniture brands “definitely want this”, insist Smit & Zoon. CREDIT: ONDARRETA/IMM COLOGNE

## The ultimate circular raw material



RENEWABLE



SUSTAINABLE



RECYCLED



GREEN TAX



GREEN JOBS

Continuity is a constant in the minds of the leadership team at leather chemicals manufacturer Smit & Zoon. Owner of the group, Marc Smit, is a representative of the seventh generation of the family that set up the Netherlands-based company. Next year, it will celebrate its 200th anniversary.

Chief executive, Hans van Haarst, says the current management team’s main challenge is to pass the company on to future generations “in better shape than we inherited”. And, because the only market for which the company develops and produces chemicals is leather, the continuity of the leather value chain is a fundamental part of that challenge. “For this reason, we have to drive sustainability, inside the company and outside, in the wider market,” Mr van Haarst says. Leather lends itself to this; he describes it as “the ultimate natural, circular, renewable raw material”.

*Leather chemicals manufacturer Smit & Zoon has launched a new company, Nera, through which it will bring to market tanning solutions that it describes as “truly sustainable”. A first new tanning system, Zeology, is already available. It is based on the mineral zeolite and produces leather that is chrome-free, heavy metal-free and aldehyde-free.*

For most of its long history, Smit & Zoon's main focus has been on fatliquors, syntans and pigments and it has built up particular strengths in automotive and furniture upholstery. At the end of 2017, it acquired Italian leather chemicals producer Codyeco, broadening its product portfolio to encompass beamhouse chemicals, wet-end auxiliaries, fatliquors, syntans, dyes and finishing chemicals. With this, it appeared to have the wet end and finishing covered. In addition, Tuscany-based Codyeco brought the group "closer to fashion and footwear", Mr van Haarst says.

#### Right from the start

This is progress, of course, but the company wanted more. It revealed this October, with the launch of Nera, a new component part of the group, that it has been working for a number of years to develop new tanning systems too. Hans van Haarst explains the appeal of this, saying: "Everything starts in the beamhouse and if you do it right there, your product will be right. If you mess it up there, your product will be messed up." Its interest in the mineral zeolite goes back at least to April 2017 when it launched a retanning agent called syntan ZLR100. The chief executive reveals now that this was the result of a dialogue with US-based chemicals groups Eastman and Taminco (which Eastman acquired in 2014). These groups had developed products using zeolite but were less than completely sure what to do with them. Smit & Zoon's work on ZLR100 gave it the opportunity to generate some business with zeolite-based products and, perhaps more importantly, to learn more about using the mineral. It was as a result of this that the company decided it could use the technology to develop new tanning systems, focusing on the metal-free, wet-white space.



*Smit & Zoon chief executive, Hans van Haarst.*  
CREDIT: SMIT & ZOON



*The interior of the Mercedes-Benz S-Class, plug-in hybrid, 2020, with nappa leather in macchiato beige and magma grey. Zeology's promise is that it will make it easier for tanners to make white and bright-coloured leather that meets all the requirements, even of automotive customers. CREDIT: DAIMLER AG.*



Gucci's parent group, Kering, began talking in public about moving to heavy metal-free leather as long ago as 2014.

CREDIT: ANDERSPHOTO/SHUTTERSTOCK

### Potential gamechanger

After working on this for the last two years with tanners in various countries, and testing its findings through contacts with organisations such as the New Zealand Leather and Shoe Research Association (LASRA) and the University of Northampton's Institute for Creative Leather Technology (ICLT), it now believes it can "achieve things that are not possible with what's on the market already for wet white", Mr van Haarst says. It is this that has led to the launch of Nera, which takes its name from 'new era', and the new company's inaugural tanning system, Zeology. In introducing the new company and the new tanning system, the language the group has used is stark. It talks of beginning "an era of truly sustainable leather manufacturing" with its zeolite-based tanning concept having "the potential to be a gamechanger for the leather industry".

Hans van Haarst explains that the group does not make these claims lightly. "We've been testing for four years," he says, "across all market segments. We've made leather for furniture, for aviation, for automotive, for garments, for footwear and for leathergoods. We've used different raw materials, including heavy native steers from the US, South German bulls and North German cows. We've conducted trials at 36 tanneries around the world, including the Americas and Asia. But the interest in the Italian tanning clusters of Santa Croce and Arzignano is particularly strong."

He describes Zeology as being plug-and-play. This is to say that tanners can use it immediately, as long as they know how to play. In other words, they are likely to have to do some fine-tuning, for example by tweaking their retanning operations to obtain exactly the right quality each time, but they will not need new equipment.

### Bright colours

What the tanneries that signed up to try the new system have found is that it makes pure white leather, the group says, and starting with that, bright colours are then feasible after dyeing. Zeolite is porous so the uptake of chemicals is high. Leather made using Zeology also has a tight grain and high tear-strength and its biodegradability is another plus; tests have shown shavings to be almost as compostable as pure collagen. A full lifecycle assessment (LCA) report of leather produced using Zeology will be available before the end of this year.

The Smit & Zoon chief executive says he has no desire "to badmouth" anyone in the industry. Chrome has "brought us to where we are today"; he calls it the work-horse of the leather industry. Glutardialdehyde (GDA), widely used to make wet white, "also has good points". He thinks the story behind wet green and olive leather is "fantastic", but he has questions in his mind about all of these systems. "They all have something that's less than ideal," he says, "and zeolite won't be 100% either. But it is a step forward and we are confident it will compare favourably."

### Single thread

While he says the group spends most of its time talking to tanners, the desire among end consumers for leather that is of high quality but more sustainable seems clear to him. "This applies across the board," he says. "Furniture and automotive brands definitely want this and luxury group Kering has already made public statements about insisting that its leather suppliers remove heavy metals from the tanning process [please see article in this issue about Kering's sustainability goals]. We are convinced this product fits with that."

It takes time to change an ancient industry, but Hans van Haarst would argue that he and his colleagues have been building coherently towards the launch of Nera and Zeology for years. He sees a thread running from this moment back to previous initiatives, such as the group's Product Passport for wet-end chemicals, which it launched in 2017, and to LIFE Biopol, a project, co-financed by the European Commission, that began in 2016, bringing together five partners: Smit & Zoon's Italy-based division Codyeco, an academic team from Università Ca'Foscari in Venice, biotechnology company ILSA and two tanners from Spain, Dercosa and Impelsa. LIFE Biopol's goal was to develop new biopolymers for use in the tanning industry.

"This marked the beginning," says Mr van Haarst. "Leather technicians began to realise that it was no longer enough for them to produce fantastic articles. They had to look at water usage and waste generation too. Product Passport was the start internally; LIFE Biopol was when we started looking outside too." He says both these initiatives opened Smit & Zoon's eyes and when it looked up, the things it saw on the horizon included Nera and Zeology. 🌱