



The effluent treatment plant at Sepiciler in Turkey. The greater the efficiency of the leather chemicals tanners use, the easier the burden on plants like this will be. IMAGE: SEPICILER

We need to talk about chemicals

There is urgent need in the industry for dialogue about making leather chemicals not just effective, but also more efficient so that more of these products fix themselves into the finished leather and lower their impact on effluent treatment plants.

There is a simple reason why leather chemicals manufacturer Smit & zoon is launching a second edition of its Product Passport, a booklet that aims to give tanners detailed information about the effect its chemical products will have on the leathers they make and the impact they will make on the environment, not least in wastewater treatment plants. The company is preparing to release this second edition of the booklet at the All China Leather Exhibition in Shanghai (August 29-31).

It launched the first edition in 2017, saying it wanted to help tanners choose their chemicals wisely, reduce their environmental footprint and save costs. It has had to reprint it because all the copies it published in the initial print-run have run out. "I have seen the boxes and all the copies are gone," says Smit & zoon strategic leather specialist, Dirick von Behr. "There was clearly a real need for that information because there is a need for a higher exhaustion of leather chemicals and we need to be open about it. We don't want people to waste their chemicals. That's the dialogue we have to have with our customers; it's in their interest, it's in our interest and it's in the industry's interest too."

The Product Passport is part of that dialogue and he explains that the second edition will help move the discussion forward by offering more than a mere repetition of the first. There will be information on a wider range of products this time because the company has now been able to include data on the fixation ability of chemicals it did not receive in time for the 2017 edition. "Taking all the measurements we

needed was a lengthy process," Dirick von Behr says, "because we wanted to test all our products thoroughly. We did that many years ago and the values are still okay, but we realised we could not be sure tanners were still using the same recipes or the same wet blue, so we decided to repeat the tests. Not all the results came back in time for the first edition of the Product Passport, but this second edition has a wider selection."

Easy to clean

Chemicals that bind more efficiently to hides during the leather manufacturing process are good news for anyone running an effluent treatment plant, he argues, for the simple reason that the less you put into the wastewater, the easier it will be to clean. But things in tanning are not always easy or transparent. Mr von Behr continues: "Things at the wet end in particular are often invisible. The float may look clear but there are often residues at the bottom of the drum. Then there are issues with products such as phenols. A phenol has no colour so you cannot see it."

The launch of new chemical products for tanners to use is not going to diminish and neither, he argues, is the need for openness about what substances they contain and how efficient they will be in exhausting themselves during the tanning process. However, Dirick von Behr foresees a future in which it may not be necessary for Smit & zoon or anyone else to carry out such detailed analysis of every product. Instead, he thinks the industry will reach a point in the



dialogue at which it says, 'we get the point'. That means understanding the chemistry and understanding the figures, he says, and "thinking in groups", rather than going into each and every chemical in detail. For this, it will also be necessary for tanners to do a little more than rely on their suppliers to give them all the data they need; "tanners are going to have to familiarise themselves with this subject too", he says.

Mature discussion

The Smit & zoon strategic leather specialist is in no doubt that, in terms of the principle behind embarking on the Product Passport project, "we got it right", and he says once more that the timing of the launch of this tool designed to give tanners a more comprehensive view of the impact on their wastewater treatment plants and on the wider environment of the chemicals they use, was good too. He explains: "What we see very clearly is that there is now a more mature discussion about this across the industry. We have given facts and figures and what we hope is that these facts and figures will raise awareness. New rules and regulations are coming. These regulations are going to be stricter than we ever thought and they are going to make people move. It's a good thing for tanners to make an effort now to reduce waste and use fully the chemical products they include in their recipes."

Pay the price

Not to do so is a waste of money and tanners would do well to hold onto that money, Mr von Behr insists, to help them pay the price of having their effluent treated. This, in the future, is going to cost them more money, if it has not already done so. Here we see again the need for increases in efficiency right away in the way the industry manages its wastewater. Even while we wait for new regulations, daily production continues and the sludge has to go somewhere. If the sludge contains chromium salts, it is potentially problematic. And if methods take hold for tanning with less water, there will be a higher concentration of any chemicals that appear in the effluent, perhaps too high a concentration for the current microbiology set-up in many effluent treatment plants. These are two examples of questions that need addressing as part of what Mr von Behr calls having to face up to reality. He fronts an informative video presentation that Smit & zoon published earlier this year to explain the difference between chemical oxygen demand (the total organic pollution reaching the wastewater treatment plant) and biological oxygen demand (how much of that pollution the wastewater treatment plant will be able to remove) and how to calculate the ratio between them. The video even explains what constitutes a good BOD:COD ratio (the higher the better because it indicates how much of the pollution the bacteria in the effluent treatment will be able to consume), although he has made the point in the past that identical ratios can present greatly varying amounts of potentially unconverted waste.

Effective but not efficient

"The idea of not fully exhausting products can no longer be accepted," he continues. "We are trying to prevent waste in every aspect of our lives, but we continue to apply chemicals of which 10%, 20%, perhaps even 30% are not used. If it's chrome, we can recycle it because the chrome we use is not really a processed chemical. But there are highly processed chemicals in fatliquors and syntans; these products contain many different ingredients, combined in a particular manner.



Hands-on approach. Smit & zoon's strategic leather specialist, Dirick von Behr. IMAGE: SMIT & ZOON



The effluent treatment plant at Sepiciler in Turkey. The greater the efficiency of the leather chemicals tanners use, the easier the burden on plants like this will be. CREDIT: WTP

Then they react with other chemicals in the float, which means it's very difficult, if not impossible, to take the effluent float from, say, the retanning process and extract from it chemical products you can use again. Instead, what we have to do is make sure that what we put into the drum sticks to the leather. Our chemicals are effective because they make beautiful leather, but if you have to use 100 kilos of a chemical and 20 kilos go down the drain, these products are not efficient."

This call for greater efficiency, then, is really an appeal to tanners to help sustain the leather business. This is an industry, Dirick von Behr points out, that has to have taking care of the environment as part of its *raison d'être*. 🌱