



An optician becomes a machine manufacturer

Innovative filters for clean water and purer air

Manufacturing processes in ophthalmic optics are almost perfectly developed and spectacle lenses usually meet the highest quality standards. Nevertheless, many production steps are still associated with environmental pollution. There are guidelines that companies have to adhere to, but there are also gray areas that are rarely monitored. The former optician Niklas Warda was no longer willing to accept one "environmental sin" – namely the contamination of drinking water with grinding residues – and therefore simply developed his first water filter himself. *By Hanna Diewald*

“The aspect of protecting the environment and one’s own living space is still far away in many people’s minds” say Niklas Warda and Tobias Dombrowski, the founders of Wardakant.

The company came into being five years ago, when founder Niklas Warda first set up an optics service while working as a workshop manager in an optician’s shop. During this time, he developed the idea of a water filtration system, which later became TideKlar. He produced prototypes and refined them until they were ready for the market.

About a year ago, Tobias Dombrowski joined as co-founder – at this point, the project really took off. These days, in addition to water filters for opticians and industry, the start-up also produces air filtration systems for odor neutralization and particulate matter filtration that also can be configured for coronavirus prevention, among other things – and the end of the line has not yet been reached. MAFO has spoken with the two entrepreneurs Niklas Warda and Tobias Dombrowski.

What exactly was the motivation to start the company?

The driving force behind the creation of Wardakant was the well-known problem of opticians discharging unfiltered residues from the grinding process into the (waste) water cycle or

disposing of them in the household waste. This problem regularly occupied Niklas in his daily life as an optician and stimulated his inventive spirit.

Until now, the only alternatives to fresh water connections, where the environmental impact is unacceptably high, have been circulation systems, which are laborious to clean. This gave rise to the objective of creating a water supply that is very easy to handle and reliably separates water and grinding residues so that these no longer have a harmful effect on the environment. This was the birth of the TideKlar.

How exactly does the circulation system work?

The required process water is pumped from the water reservoir of the TideKlar to the processing machine. Accumulating wastewater flows from the machine back into the filter tank, where particles up to a size of 80 µm are separated from the process water by the self-cleaning filter. Smaller particles then sediment in the subsequent settling tank, ensuring that the water continues to be of high quality for the next operations. Due to the automated control of the system, no further expenses are incurred, except for the occasional removal of the accumulated residues from the collection tank.

With which machines can the grinding water treatment system be combined?

The water filters can be used alongside the standard processing systems in ophthalmic optics wherever water flows and chips occur. Their use is independent of manufacturer and machine. Thanks to the possibility of individual adaptation and design in all conceivable sizes, the TideKlar is suitable for a wide variety of applications. Be it the central water supply of several processing machines or the handling of extreme quantities.

Is there a recycling option for the production waste that arises?

The generated residues are usually classified as hazardous waste. However, it is a pity that these materials end up in landfills or incinerators, as they are largely recyclable. The choice of viable recycling options is currently limited, but there is a lot going on in this sector. At the moment the recovered residues are recycled in the production of building materials that can be used long-term.

Filtering grinding water during surface finishing is a particular challenge. What is the difficulty here?

Currently, the TideKlar is still primarily designed for edge processing of lenses and typical chip-removing manufacturing processes. The surface processing of optical glass presents even higher demands regarding the purity of process water. A consumable-free solution is at present the major challenge we are working on.

Why should the air in production facilities be filtered?

Legal requirements at the workplace already ensure that many substances that are harmful for employees are reduced as far as possible. However, even if the concentrations of certain compounds in indoor air are low on paper, they can still be a burden for affected employees. Even if the legal requirements are complied with, a working atmosphere in which people feel comfortable is still a long way off. For this, efficient indoor air filters are urgently needed – as, for example, the BriseSchier.



Entrepreneurs Niklas Warda (left) and Tobias Dombrowski (right).

Did you know?

Grinding residues are so small that they slip through the filter mechanisms of sewage treatment plants and get back into the water cycle unhindered. For a simple lens with -0.75 D, 5 grams of plastic are wasted per lens. Correspondingly, higher diopters cause more waste. Extrapolated to, for example, 40 million lenses processed per year (example Germany), this results in 200,000 kg of grinding waste. If you add the grinding water to this calculation, this results in 300 million liters of contaminated water per year.

Can filtration also be useful as a preventive measure against the coronavirus?

Our air filter also comes with the option of an individual configuration. Equipped for this operation purpose with a special HEPA filter cartridge, the system is able to remove aerosols and viruses from the filtrated air, without the need of a special exhaust or an intake of fresh air from the outside. The BriseSchier is built for the indoor filtration with a circular flow.

How important are the topics sustainability and regional production in your corporate philosophy?

The topic of sustainability is one of the cornerstones in the Wardakant philosophy; after all, the TideKlar already stands for environmentally friendly and resource-saving operations. In addition, the construction of the filter units is designed for an extremely long service life, which is a clear contrast to the usual disposable products of today. Production “Made in Germany” also plays an important role in ensuring quality and keeping emissions low. Of course, the direct line to the suppliers is also an important component.

Can companies profit from a shift to more sustainable production and if so where do you see benefits for the industry?

Basically, every company benefits from sustainable production. The aspect of protecting the environment and one’s own living space is still far away in many people’s minds, although awareness has increased significantly in recent years. But sustainability can also have a positive effect in the short and medium term. For example, by saving resources, and in turn saving costs as well. Likewise, it is now an important differentiator, which helps polish the corporate image and attract new customers.

What are your plans for the next few years?

Wardakant wants to come up with innovative machines and ideas in the field of filtration technology and do its part for sustainability, thus making it easier for other companies to jump on this bandwagon. The Wardakant family is set to grow further, with more products waiting in the wings to be launched in the next few years that will expand our portfolio.

Thank you for the interview. ♦