

EXTRA: MEDICAL

[VEHICLE ENGINEERING] [MEDICAL TECHNOLOGY] [PACKAGING] [ELECTRICAL&ELECTRONICS] [CONSTRUCTION] [CONSUMER GOODS] [LEISURE&SPORTS] [OPTIC]

“The Future Does Not Lie in Plastics Alone”

It Is Not Components but Complete Solutions that Are in Demand

In its latest investment, the Röchling Group is channeling EUR 50 million into the medical technology sector. Future strategies include not only a wide range of production competences but also a balanced sector portfolio and implementation of the smart factory concept. In an interview with **Kunststoffe**, Chairman of the Board, Prof. Dr. Hanns-Peter Knaebel, and Medical Division CEO, Dr. Boris Fröhlich, report on the challenges of cleanroom extrusion, quickfire solutions at a time of pandemic, and creating a home for bats.

The Röchling Group consists of the Industrial, Automotive, and Medical Divisions. The Medical Division, which manufactures products across the segments of diagnostics, pharmaceutical packaging, fluid management, and surgery & interventions, has grown from three to six sites in the past three years. Ideally, these medical technology specialists prefer not to develop just individual components. In the primary pharmaceutical packaging sector, for example, the focus is on complete packaging systems, including application aids, cleanroom assembly, and certification right through to packaging and sterilization.

Kunststoffe: *Dr. Fröhlich, you have been CEO of the Medical Division for a good year now and so are responsible for six sites and 1100 employees. Six sites in China, the USA, the German Black Forest, Thuringia, Germany, and Hesse, Germany – there are wide cultural differences here. How do you manage this situation during a coronavirus pandemic?*

Dr. Boris Fröhlich: Except for China, I have been able to visit all the sites in person since February last year thanks to hygiene concepts that we speedily developed. In retrospect, I must say that the unique situation has helped to build a team structure very quickly. Once you migrate to digital formats, you also achieve integration.

Prof. Hanns-Peter Knaebel: In setting up the new sites, our motto has been “One Medical” right from the outset. We want to make our customers a

complete offer – leveraging the different competences of the respective sites. This has helped us in the crisis. Our employees did not feel left alone but identified with the Group as a network.

Kunststoffe: *You two as the medical management team have known each other for quite some time ...*

Knaebel: That’s right, we have known each other for 23 years. We worked together for many years as senior doctors in a university surgical hospital. So, we both have a good understanding of what happens in medical applications. When you know intensive care units and operating theatres from the inside, you can target your own products better.

Kunststoffe: *At your site in Lancaster, USA, you use a combination of metal and plastics in the production of minimally invasive instruments, for example. At your German sites, the focus has so far been on plastics.*

Knaebel: We are already implementing the use of material combinations for special cannulas or instruments, for example in ophthalmology. This trend will certainly become even more important in the future. This is also one of the reasons why we are pushing ahead with additive manufacturing in metal and not just in plastics at our RDMC (Röchling Direct Manufacturing Center) in Waldachtal, Germany. There, we are printing com-

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ponents from material combinations as well as titanium elements.

Kunststoffe: Your largest current investment of some EUR 50 million is going into the site at Neuhaus am Rennsteig, Germany. For what purpose is the new production building being constructed?

Fröhlich: This is to be a 1700m² cleanroom production facility, at the heart of which will be an extrusion blow molding line. Production is scheduled to start in June 2023. In the new production hall, 35 to 40 million units/annum of a polypropylene canister will be manufactured. The canister forms part of the inner mechanism of an inhaler device.

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We are a large medical network. We do not think on an individual site basis.”

Dr. Boris Fröhlich

Kunststoffe: What is so special about this canister?

Knaebel: This small canister is in a class of its own. It is about 4.5 cm high and 1.5 cm wide and deep. With the aid of a specific machining technique on the top, we achieve mechanical stability. The active ingredient can be released from the canister by pressure. With decreasing pressure, the canister is automatically resealed because of its inherent elasticity.

Kunststoffe: A new product from your company?

Knaebel: No, essentially we are building the same production line as the one we commissioned, also in Neuhaus, in 2018. A major customer is so satisfied with our team there that they have considerably increased their volume.

Kunststoffe: And will this be the only article to be produced in the new production hall?

Fröhlich: No. We will be producing various products there in numbers ranging from 10,000 to several million. The inhaler will account for the largest volume; we already know precisely how many units will be produced on 23rd June 2023. In the other plants for extrusion blow molding, injection blow molding, and injection stretch blow molding, we will be able to interchange molds. Often, production will not be carried out in a line but in a star formation, where several machining steps take place in rotation around a disk. Typically, this will be for containers for nasal sprays or disinfection solutions. The building is very flexible.

Kunststoffe: What is new or different in the new building?

Fröhlich: We have improved our processes yet again and increased the degree of automation. By doing so, we will reduce the reject rate to way below 2%. In our current plants, the rate is just under 4%. To operate the new plant-technology we naturally require suitable personnel. In the existing buildings directly adjacent to the new building, we have set up a training center to train employees appropriately.

Kunststoffe: What does such a training center look like?

Fröhlich: Cleanroom production to meet GMP class C & D or



Interviewees

Prof. Hanns-Peter Knaebel (on the left of the photo) has been Chairman of the Board of the Röchling Group since January 1st, 2018. The qualified doctor was previously Chairman of the Board of Aesculap AG. Since January 1st, 2020, the qualified doctor, **Dr. Boris Fröhlich**, has been CEO of the Medical Division within the Röchling Group. He previously held a senior position at the medical technology company B. Braun Melsungen AG.

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higher requires special behavior. In this environment you have to move slowly – this creates a certain “Apollo 13 atmosphere”. Everyone must adhere strictly to the validated processes. Where will the protective clothing be donned and disinfected? How many people may be in a room at once? It will take two to three months before we can fully deploy personnel.

Kunststoffe: What areas have been automated?

Fröhlich: We produce on one level. The supply and removal of products is fully automated around production. Thanks to special air lock architecture, the logistics ensure that products have exactly the degree of purity the customer requires.

Knaebel: Digitalization and automation are not just confined to our Neuhaus site. The smart factory concept is a project being implemented over all our company sites and branches. The main objective is to interconnect all production plants, both old and new. The second objective is complete data availability from all machines at any point in time in any place. We also want to visualize to our customers the status of every machine at any point in time. In this way we create transparency around capacity utilization, reject rates or mold changes.

Kunststoffe: You let customers see so much?

Knaebel: Individual customers, yes. We are already doing that today in the automotive sector.

Kunststoffe: Why are you investing in Germany? Many companies are shying away from the strict conditions now applying in this country. Is Thuringia an attractive site – especially because of the funding opportunities?

Knaebel: I understand the frustration of any entrepreneur, the conditions are indeed very strict. However, we continue to believe in Germany as a production location if costs can be kept competitive through suitable automation.

Fröhlich: Thanks to the funding potential, Thuringia is highly attractive – also in terms of sustainability. At the end of the day, we can only win by digitalization and automation. We can only differentiate ourselves through high-quality, robust processes.

Kunststoffe: Unforeseen hurdles can also crop up, such as weevils ...

Fröhlich: With us it is bats. But we also have a solution for that. Our buildings are designed so that bats can find a home there – in both buildings, the one commissioned in 2018 and the new one.

Kunststoffe: The Röchling Group generated sales of just under EUR 2.4 billion in 2019. How did it go in 2020?

Röchling Medical Division

Production competences include additive manufacturing, cleanroom extrusion, extrusion blow molding, injection blow molding, injection stretch blow molding, two-component injection molding, insert technology, overmolding/back injection molding, and in-house moldmaking.

The product portfolio includes:

- Fabric-reinforced tubes for endoscopy, cardiac catheters, and breathing tubes. The inner and outer layers produced from PP, PE, TPU, TPE-A or fluoropolymers are reinforced with fabrics made from polymer-based monofilaments or metal wires.
- The interactive primary packaging “E cap” with an integrated sensor that communicates information on fill level, dosage, and correct storage to the patient and doctor via smart phone, tablet or app.
- The “Sympfiny” drug delivery system specially developed for children. A coating of tiny microspheres masks the taste of the actual active ingredient. An oral syringe ensures precise dosage.

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Prof. Dr. Hanns-Peter Knaebel

Knaebel: All divisions of the company (Industrial, Automotive and Medical) were affected by the coronavirus pandemic. Overall, our results are slightly below those of the previous year – although we are still awaiting the final figures.

Kunststoffe: Has the Medical Division been able to profit from the coronavirus?

Knaebel: Many hospitals ceased to perform standard operations at the start of the first lockdown. As a result, demand for minimally invasive instruments fell, for example. On the other hand, demand in the areas of diagnostics and intensive care therapy increased. But for us, the downturns on one side were not compensated for by the rising demand on the other.

Kunststoffe: Was there no quickfire development from which you could benefit?

Knaebel: We came up with many good quickfire solutions, but it takes six months for products to be certified and approved for use, e.g. for the new coronavirus tests or vaccines. We also developed products for personal protective equipment. At the time there was an enormous outcry: “We must get European supply chains. Besides us, there were quite a number of companies that endeavored to produce personal protective equipment. But when it came to ordering, a great deal of orders went to China. This sent a signal that: we would rather order somewhere else that is a couple of cents cheaper. The disentanglement of globalization has not been universally taken on board yet.”

Kunststoffe: Back to the Röchling Group. Medical Division – with sales of EUR 200 million – accounts for the smallest proportion of the Group turnover of nearly EUR 2.4 billion. Are similar investments being made in other divisions?

Knaebel: The aim is a balanced portfolio between our Industrial, Automotive, and Medical divisions. Medical is currently by far the smallest division so there is a high readiness to invest there. But if opportunities arise in other sectors, they will of course also be exploited.

Kunststoffe: Where does the future lie for Röchling Medical?

Knaebel: Our product portfolio is currently developing in three directions. First of all, we manufacture a range of containers from a few millimeters up to 20 liters capacity. We specialize in producing large volumes to high dimensional accuracy. This means very high precision in extremely large numbers. Our second line of approach is to develop innovative application methods. With smart drug delivery systems, we find ways to deliver drugs according to patient needs. Our third strand is developing smart products such as our ingenious E cap (see Box vis-à-vis, editor’s note), which reminds patients to take their medicine. ■

The interview was conducted by Susanne Schröder, Editor.