RÖCHLING GROUP
2017

ONE STEP AHEAD

RÖCHLING

KEY FIGURES

	SALES in EUR m	EBIT in EUR m	EBIT in percent	SHAREHOLDERS' EQUITY in percent	EMPLOYEES as of December 31
2016	1,657	138.0	8.3	44.0	8,800
2015	1,555	135.9	8.7	42.1	8,400
2014	1,364	102.9	7.5	41.9	7,880
2013	1,283	90.1	7.0	40.0	7,463
2012	1,193	85.1	7.1	42.1	7,165
2011	1,134	79.6	7.0	41.3	6,559

Executive Board of the Röchling Group (from left):
Franz Lübbers, Erwin Doll, Ludger Bartels and Steffen Rowold

Dear Sir or Madam:

"One step ahead" is the motto of our image brochure for 2017. As a family-owned company, Röchling is proud of its traditions, values and long-lasting success, but we are not resting on our laurels. On the contrary, the unchangeable nature of the Röchling Group is the basis for innovation – for that one step that distinguishes us from others. It provides our employees with the assurance to work on innovations with curiosity, confidence and courage. We provide an environment that allows independent experimentation and ensure diversity within our teams, because only in this way can creativity and thinking out of the box become part of corporate culture –

PIONEERING MEANS ALWAYS BEING ONE STEP AHEAD.

at every level and in every area. We support employees with a desire for innovation in their development and in doing so, our Human Resources department is breaking new ground. The inventiveness of our employees is encouraged by the Röchling Innovations Awards, which are presented every year.

Increasing global competition, demanding customer requirements and the growing interchangeability of products make innovations an essential success factor for companies. This includes transforming the ideas of employees into new products, new systems, new technologies and new processes that will be successful on the market. New, however, does not necessarily mean fast. Developing innovations takes perseverance, which is something that Röchling has.

The central assessment criteria for innovations are technical feasibility and economic viability. However, there is one thing that is of outstanding importance to Röchling – we want to create the greatest

possible benefits for our customers. Providing these customer benefits is the reason why our company exists. We understand what our customers need and provide the solution they are looking for. This is the benchmark against which we measure ourselves and against which others can measure us. We always want to be one step ahead with our innovations, including in the competitive environment.

To achieve this, we cannot stand still. Indeed, the development towards Industry 4.0 requires companies such as the Röchling Group to demonstrate an extra measure of willingness to change and, at the same time, harbors enormous potential. We will take the step from automation to digitalization together with you, our customers. Our aims are even greater efficiency, even more precisely customized products and even higher customer satisfaction.

The success of our current strategy was confirmed by the financial year 2016. The Röchling Group has continued to grow internationally, increased sales, founded new companies, developed production capacities, launched new and enhanced materials, products and systems on the market and further boosted its earning power.

We hope you have an interesting read.

Ludger Bartels
CEO

Erwin Doll

Franz Lübbers

Steffen Rowold

CONTENTS

Up to 80,000 bottles race through the bottling plant of beverage manufacturers every hour. Torsten Ströer uses Röchling's own conveyor system to test how the sliding material LubX® improves the process.

ENSURING EVERYTHING RUNS SMOOTHLY

INDUSTRIAL DIVISION:
How Plastics Are Given Innovative Properties

PRODUCTS WITH ADDED VALUE FOR CUSTOMERS

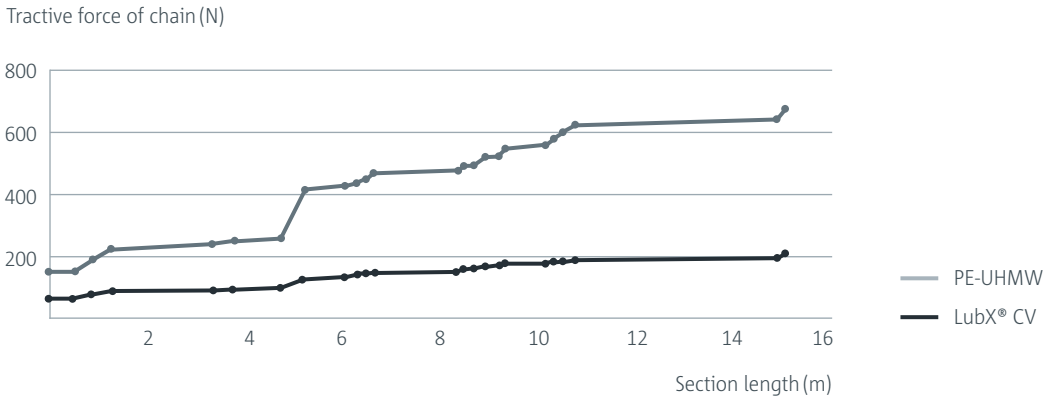
In a Röchling production hall in Haren, blue-gray plastic sheets the size of the wall of a room are stacked in huge piles. What this plastic really can do, however, is hidden from view. LubX®, as the material family is called, impresses with its excellent sliding properties and high resistance to wear – both of which are important for the operation of conveyor systems in the beverage industry, for example, where the chain guides and guide rails of conveyors are made from LubX®.

The Röchling material is used, for example, if goods on a chain conveyor need to be transported from A to B – whether they are beer bottles, cans or milk cartons. The plastic used in these complex systems significantly influences frictional resistance and wear performance, which also depend on tribological pairings. Harmonizing the bottles, conveyor chains, chain guides and guide rails has practical advantages for system operators because less friction and wear means that the systems can be operated in a more energy-efficient manner and the conveyor is put under less stress. Other advantages include a longer service life, lower

Mario Frericks (left) and Jens Korte scrutinize the freshly produced sheets of LubX®. The experts communicate with the customers on an equal footing.

noise emissions, shorter run-in periods, extended maintenance intervals and lubrication-free operation of conveyor systems. “This last point is a crucial factor particularly in sensitive areas such as the food industry,” says Jens Korte of the Marketing & Development department at Röchling in Haren.

The LubX® product family has several members. LubX® S has been specifically designed for the sliding partner PET (polyethylene terephthalate) and, therefore, beverage bottles in particular. LubX® C is the material of choice where contact with steel or polyoxymethylene (POM) is involved. Examples of parts made of POM include the conveyor chains and guiding elements of a conveyor belt. LubX® CV was developed for systems operating at higher speeds and pressure loads, meaning increased productivity. Finally, LubX® AST is an anti-static sliding material, which ensures controlled electrostatic discharge. LubX® is sold as compression molded sheets, skived sheets, extruded profiles, rods or finished parts according to the customer drawing.



How much tractive force does the chain in a conveyor system require? Tests at Chemnitz University of Technology show that with LubX® CV, the values are consistently lower than when PE-UHMW is used. This reduces the load on the conveyor chain and increases process stability.

The fact that LubX® CV maintains its sliding properties and high wear resistance even under tougher conditions has been proven in scientific tests. “We collaborate closely with the Institute for Conveyor Technology and Plastics at the Chemnitz University of Technology, among others,” reports Korte. The scientists have created a rigorous test procedure for LubX® CV, which meets the exacting requirements placed on the material in practice. For this purpose, the essential parameters, such as surface pressure and speed, were increased considerably. Among other characteristics, LubX® CV stood out for its very low sliding friction coefficient of 0.13 and a temperature development at the friction surface of the sample of a maximum of 28°C – 17°C less than for the other material samples. The test specimen displayed hardly any signs of wear even after 24 hours. The required drive power was 80 percent less than that of comparable materials.

How is this possible? How do the Röchling developers ensure a plastic has the desired innovative properties? “When developing LubX® plastics, we always work on the temperature,” says Korte. Standing in the lab, he is looking over the shoulder of his colleague, Torsten Ströer. If temperatures can be kept low during the conveyor process, this results in less abrasion and a longer service life for the entire system.

The five-member, interdisciplinary team around Jens Korte has vast expertise and years of experience. To precisely align a plastic with the desired requirements profile, additives, slip agents or antistatic agents

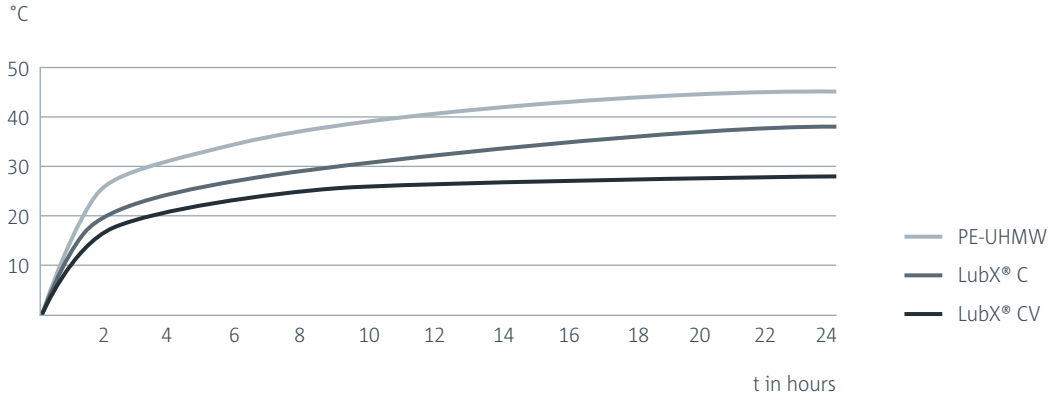
Mario Frericks (left) and Jens Korte agree: "We are only able to develop innovative solutions if we properly understand our customers' business and immerse ourselves in their processes." The company has the right experts on board.

must be added, concentrations modified and formulations adapted. "Often, it is simply a case of trial and error. You might be making good progress with one property and then things suddenly take a turn for the worse for a different property," explains Korte, looking at the latest readings of his laboratory colleagues. Test, test and test again – the important thing is to allow enough time to do so.

Experts at the Cutting Edge

Röchling has experts for all relevant industrial sectors, who communicate with our customers on an equal footing. They are at the cutting edge of the industry, have close contacts with universities, keep up to date with relevant developments at trade fairs and maintain direct and intensive contact with our customers. All this has helped Röchling make itself heard in the industry. "Now, our customers know that we learn, develop and try out new things especially for them to solve their specific problems," says Mario Frericks, Business Unit Director of Sales & Marketing. The trained chemist has worked at Röchling for 20 years and knows that "we will only be able to develop innovative solutions if we properly understand our customers' business and immerse ourselves in their processes."

Constantly questioning certainties, closely following technological developments and maintaining close contact with the customer – these are what Korte sees as the key tasks of his team. He is well aware of the responsibility of his company. Machine and system manufacturers using



Even when subject to tougher test conditions in Röchling's tribology testing facility (speed 0.5 m/s, surface pressure 0.5 MPa, 24-hour test), the temperature of LubX® CV does not exceed 28°C in dry conditions and is up to 17°C below that of other material samples.

materials from Röchling must supply their customers with a perfect product. The chain of a conveyor belt must not snap, the bottles must not become scratched and the entire process must run smoothly. Distributors selling Röchling materials must also be able to completely rely on their quality.

Röchling has invested heavily in its development center in Haren to ensure all of this is the case. For example, the company has installed its own bottle conveyor system, including a high-speed camera and sensors. Torsten Ströer, Head of Thermoplastics Material Testing and a trained physics lab technician and materials tester specializing in plastics technology, stands next to the machine closely keeping track of various measurements. The aim is to find out how plastics innovations actually benefit chain guides and guide rails and which material is suited best to which sliding partner.

Plastics beyond the Reach of Others

After almost 20 years at Röchling, Ströer still gets excited about his varied work, which ranges from office tasks to testing and control procedures in ongoing production as well as innovative developments. The aim is also clear for his colleague, Materials Tester and Developer Heiner Tieben: "We develop materials that help our customers and are beyond the reach of others. This is how we stand out from the competition." Röchling always has several projects in development at any one time. Sometimes a year is long enough to develop a new, marketable product – but this is rarely the case. "It is more like three to five," says Korte.

Torsten Ströer (left) and Jens Korte test the properties of newly developed plastics at the company's in-house development center in Haren.

"In the best case, several target industries benefit from a development," says the 42-year-old, who studied plastics technology in Osnabrück and worked in the aviation industry before joining Röchling in 2007. For example, Röchling has transferred the LubX® idea to the leisure industry, where Polystone® polar X enables almost frictionless ice skating on plastic sheets. The developers also have to keep profitability in mind.

Close Contact with Universities

Meanwhile, in the materials lab, other test mixtures are being created in the sample mixer and will then be further developed together with universities or scientific institutions. In Haren, prototypes can be produced from the innovative material formulations using a laboratory extruder or press. Then, the company uses its own tribology testing facility to determine how good the properties of the respective material really are in the trial field, where the developers simulate real-world conditions and analyze various material pairings quickly and reliably.

Röchling has already delivered developments for many industrial areas using this systematic approach. Based on intensive interaction with requirements, the company is constantly helping develop new plastic products that offer genuine added value for its customers and are revolutionizing the market – not only in conveyor technology but also in many branches of industry.

RÖCHLING GROUP 2016

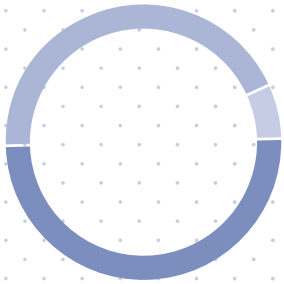
1,657
million euros
sales

138.0
million euros
EBIT

8,800
employees

Three corporate principles have been the foundation of Röchling's rise to the leading international ranks among plastics companies:

Competence, quality and innovation.



684

million euros in sales

Industrial division

3,158

employees

38

locations

The **Industrial division** has a broad product range offering thermoplastics and composite materials as well as high-performance plastics. Customers receive these products in the form of semi-finished products such as sheets, rods, tubes, flat bars, profiles and finished castings or as precise, machined and assembled components.

856

million euros in sales

Automotive division

4,843

employees

36

locations

The **Automotive division** designs and engineers components and system solutions in the fields of aerodynamics, powertrain and new mobility. As part of our customer-orientated and global development approach, we focus on the current challenges facing the automotive industry, including reducing emissions, weight and fuel consumption.

117

million euros in sales

Medical division

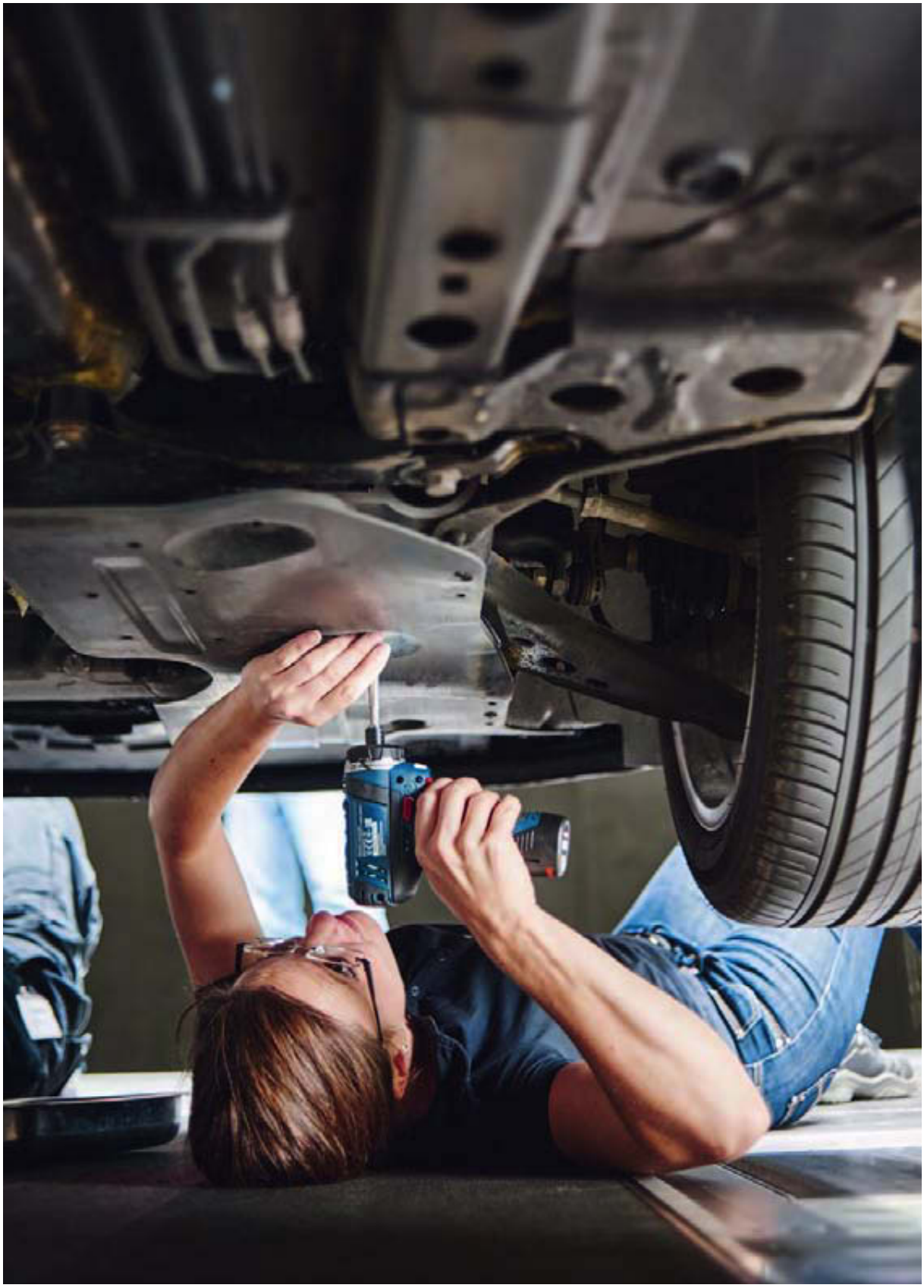
774

employees

3

locations

The **Medical division** offers customers a wide range of standard and tailored plastic products in the fields of pharmaceuticals, diagnostics, surgery and life sciences. These high-quality products are used in innovative drug delivery systems, primary packaging systems, surgical instruments and disposable diagnostic items.



Modify the vehicle, measure the air resistance, modify the vehicle again: sometimes, aerospace engineer Juliane Nies also lends a hand in the wind tunnel.

RESISTANCE IS FUTILE

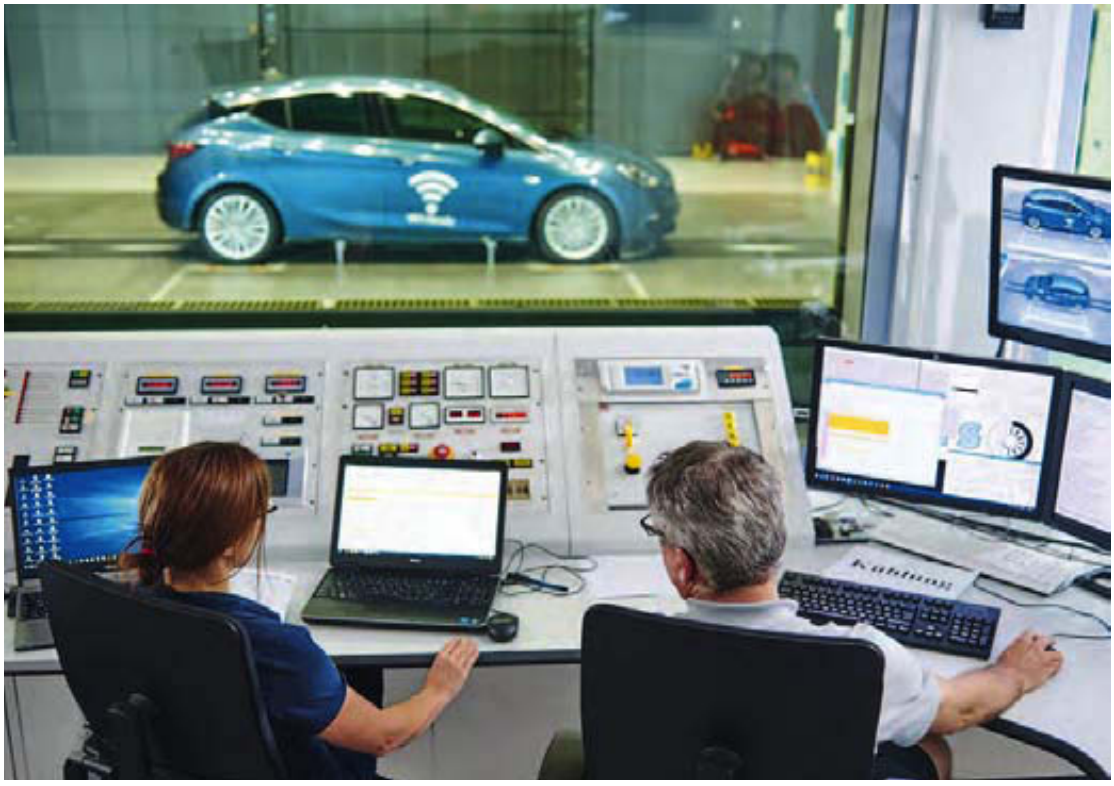
AUTOMOTIVE DIVISION:
How Vehicles Can Be Aerodynamically Optimized

SMALL CHANGES THAT MAKE A BIG DIFFERENCE

The automotive world is in a period of transition. In times dominated by climate change, consumers and politicians are focusing on fuel consumption and harmful emissions. At the same time, the pressure on automotive manufacturers is growing as a result of stricter test regulations and the promotion of hybrid and electric drives.

One way to reduce fuel consumption and therefore harmful emissions is to improve the aerodynamics of the vehicle. This entails minimizing air resistance, which in the field of vehicle aerodynamics is known as the drag coefficient. The air resistance measured in the wind tunnel is related to the front of the vehicle, air density and speed. In Europe, a reference speed of 140 km/h has been agreed on to make it possible to compare the drag coefficients of different vehicles.

Röchling Automotive uses innovative solutions to support its customers in the development of aerodynamically optimized vehicles. This includes intelligent grille shutters, which are placed in front of the radiator and let



In the wind tunnel, the vehicle is generally subjected to air flow from the front traveling at a speed of 140 km/h. At particularly important points, the vehicle rotates on a turn table in increments of 2.5 degrees between 0 and 10 degrees to take into account the effects of crosswinds.

air pass through the car only when required and in the right quantities. However, if cooling air is not required, the shutters remain closed. This reduces the drag coefficient by up to six percent. These types of innovations represent one pillar of our success. Another of these pillars is made up of our experts.

The Aerodynamics group has been performing wind tunnel measurements on selected vehicles for seven years now to understand exactly how the components manufactured by Röchling affect the aerodynamics of the vehicles. The wind tunnel at the Research Institute of Automotive Engineering and Vehicle Engines Stuttgart (FKFS), where the series production components of a vehicle and a variety of prototypes are tested under first-rate conditions, is the perfect place for these measurements. Underfloor components can be tested under realistic conditions using a five-belt system that simulates the moving road surface and the turning of the wheels. This is always a particularly exciting day for the Röchling experimenters in the predevelopment team.

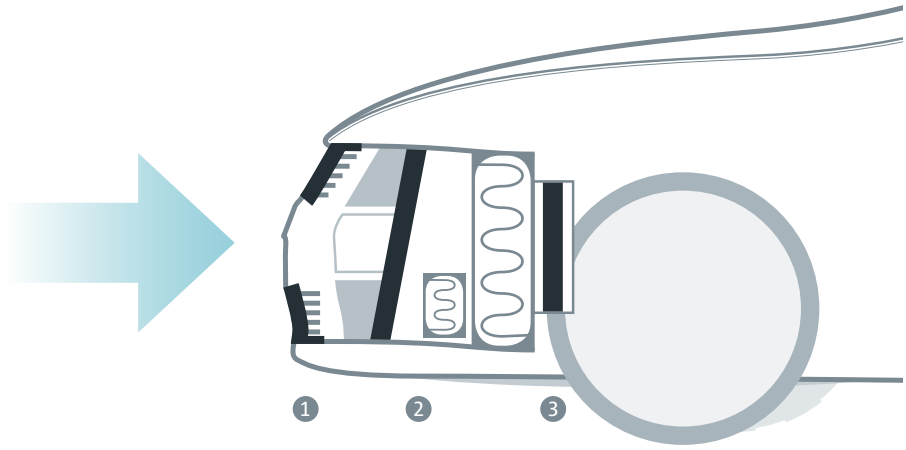
Aerodynamics can be improved by measures for optimizing air flow. For example, active speed lips help reduce the back pressure on the tires.

Since Juliane Nies (33) joined Röchling in 2015, she has been responsible for the wind tunnel tests – starting with the procurement of the test vehicle right up to evaluating the test results. She discovered her love for the fresh wind that blows through the wind tunnels of the world while studying aerospace engineering. Later, she fully dedicated herself to these types of experiments as part of her doctorate at RWTH Aachen University.

A typical wind tunnel day with Röchling involves making constant modifications to the vehicle and taking measurements for each vehicle configuration. Ideally, Röchling tests 40 different configurations in one day, with the previously prepared prototypes being fitted to the vehicle between each measurement.

At the end of the day, a table full of various measured values that then need to be evaluated is available. Back at the office, the first thing her colleagues want to know is to what extent each component reduced drag. Usually, they have to wait a while for an answer because the results are not revealed until Nies has at least an idea of why certain components perform well and others do not. When refining components, it is important to know not only what they can do, but also what effects exactly helped them achieve a reduction in drag. If the mode of operation is understood, the component can be improved.

Team work is needed to interpret the results. Besides Nies, Group Leader Andreas Schmitt (31) and Numerical Analyst Dr. Rana Muhammad Humza (34) are Röchling's other experts in aerodynamics. Humza joined



Active air flap systems, known as active grille shutters (AGS), regulate the air flow in the engine compartment and improve the aerodynamics of the vehicle. Their positioning in the engine compartment also determines to what extent air resistance can be reduced. The most effective option is to integrate the AGS into the design grille of the vehicle (1). When integrated in the structure (2), the AGS is less effective in terms of aerodynamics. The least effective place to position the AGS is directly behind the radiator (3).

Röchling in 2014 after receiving his doctorate in applied mathematics from Heidelberg University. He is the man to go to for solving complex flow problems. Using numerical simulations, he can adjust the flow on the computer. Unlike the wind tunnel, where only measurements of the forces acting on the vehicle can be taken, Humza can make the flow visible at every conceivable point and display the flow values.

Computer Simulation

Humza's universal tool for performing his work is high performance computing (HPC). Whether it concerns the flow around a single air flap system with moveable flaps or the simulation of a whole vehicle with a simplified engine compartment, almost everything can be simulated on the computer thanks to the rapid progress made in the fields of numerical mathematics and computing capacity in the past years.

For Röchling, it is particularly interesting to see what effects can be produced by making even the smallest of changes. For example, even a slight change in the geometry of an air flap has an effect on the forces required to open or close the air flap. Changing the direction of the air flow can further improve the efficiency of a cooling system. By using the simulation, Humza is able to provide the design engineers with important information about how a component can be optimized in terms of weight and performance. Humza particularly enjoys the variety in his work and the challenge of learning to work with the latest methods. "I then apply these to the various questions and problems posed during predevelopment."

Rana Humza is a numerical analyst. He simulates various air flow scenarios using a variety of software. His images and animations give the aerodynamics experts a deeper insight into the air flow around their prototypes.

Predevelopment does not only entail working on new products – it also involves optimizing existing products. For Group Leader Schmitt, air flap systems have made a regular appearance on the agenda for almost seven years. Röchling is the market leader in air flap systems and the insights constantly being gained from testing and simulations, which are ultimately applied to the series production components, help ensure it stays this way. Schmitt loves solving technical problems and finding out, for example, how an air flap leakage can be reduced. Here, “leakage” refers to the flow of air that can still pass through the air flap system even when the air flaps are closed.

In-House Leakage Test Bench

When it comes to leakages, research and quality assurance are indispensable at Röchling. This is why the company put its own leakage test bench into operation in 2016. The test bench is not only used to test the leakage values specified by the customer – it can also be used to perform a systematic inspection of the flaps. The test bench can generate pressure that corresponds to driving speeds of up to 300 km/h. The changes to the flaps can be directly observed through a window in the measurement chamber. The knowledge gained from the test bench can be used to further improve the air flaps, usually through minor changes to the design.

INNOVATIVE CONCEPTS PUT INTO SERIES PRODUCTION AS QUICKLY AS POSSIBLE

Whether for internal tests or joint projects with automotive manufactures or research institutes, Schmitt is on hand to provide support. Together with the respective partner, Röchling experts work on concepts for the prototypes to be tested. These are specially developed for the wind tunnel tests and then tested on the vehicle. The direct communication and collaboration of the predevelopment team with the predevelopment and development departments of automotive manufacturers ensures that new and innovative concepts can be put into series production as quickly as possible.

Concept development is the most creative part of predevelopment work. Armed with pens and a whiteboard, engineers from various fields work together to find the most effective and most robust solution to, for example, transfer the rotary movement of an actuator on the outside of an air flap system to all the flaps in the system using a combination of connection levers. This is where Patrick Urbach (31) plays a part, who joined the Aerodynamics group in 2016 as a Kinematic Systems Engineer. Prototypes are built for the finished concepts. Today, components mainly come from the 3-D printer and are assembled in the predevelopment workshop by Röchling's prototype builder Jürgen Küper or the engineer responsible. When the package full of parts arrives it is just like Christmas morning, when children unwrap the big box of Lego under the Christmas tree. The excitement in the eyes of the engineers is just the same.

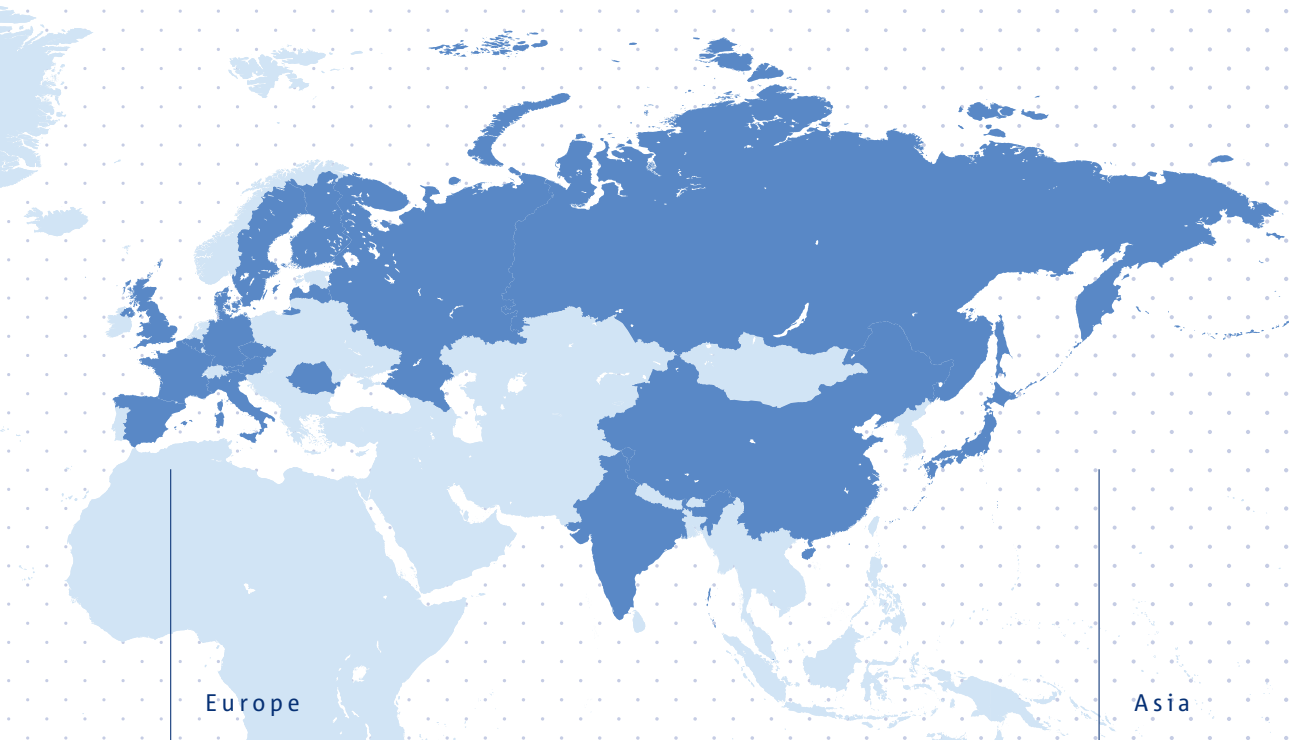
The Americas

Industrial
- Orangeville, ON/CA
- Cleveland, OH/US
- Dallas, NC/US
- Gastonia, NC/US
- Kimberly, WI/US
- Mount Pleasant, PA/US
- Ontario, CA/US
- Itupeva, BR

Automotive
- Akron, OH/US
- Duncan, SC/US
- Troy, MI/US*
- Silao, MX
- Itupeva, BR

Medical
- Rochester, NY/US

A GLOBAL PRESENCE: 78 LOCATIONS IN 22 COUNTRIES



Europe

Headquarters
Mannheim, DE

Industrial
Bad Grönenbach-Thal, DE
Haren, DE
Lahnstein, DE
Lützen, DE
Nentershausen, DE
Roding, DE
Ruppertsweiler, DE
Troisdorf, DE
Oepping, AT
Gozzano, IT
Venegono Inferiore, IT
Gloucester, GB
High Peak, GB
Hitchin, GB
Décines, FR
Maxéville, FR
Bocairent, ES
Rusko, FI
Virserum, SE
Allingåbro, DK
Liepāja, LV
St. Petersburg, RU
Planá nad Lužnicí, CZ

Automotive
Gernsbach, DE
Ingolstadt, DE
Cologne, DE
Mainburg, DE
Munich, DE
Peine, DE
Rüsselsheim, DE
Stuttgart, DE
Wackersdorf, DE
Weidenberg, DE
Wolfsburg, DE
Worms, DE*
Abbiategrasso, IT
Laives, IT*
Trento, IT
Volpiano, IT
Birmingham, GB
Gijzegem, BE
Paris, FR
Araia, ES
Teruel, ES
Gothenburg, SE
Kraslice, CZ
Ostrava, CZ
Pitești, RO

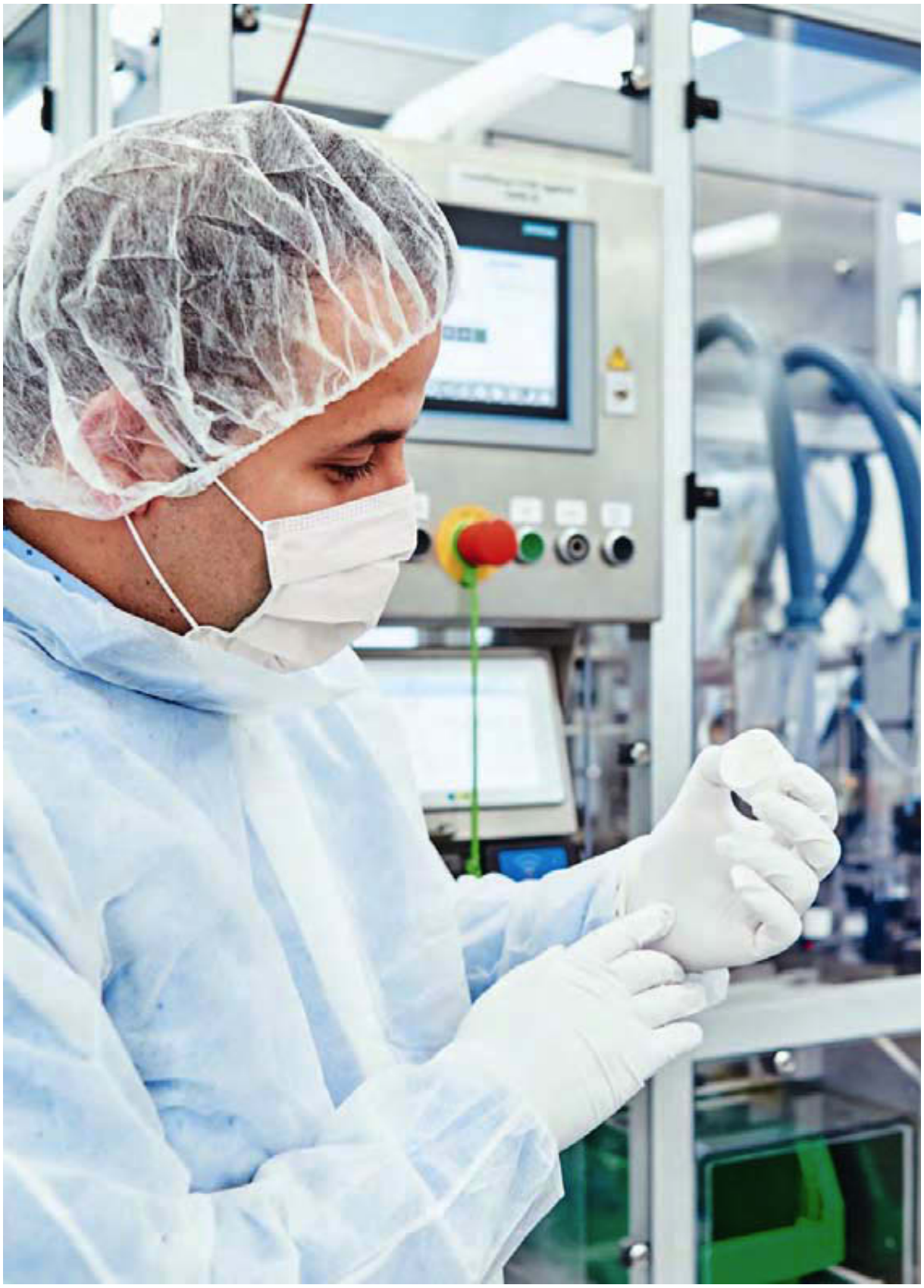
Medical
Brensbach, DE
Neuhaus am Rennweg, DE

Asia

Industrial
Kunshan, CN
Shanghai, CN
Suzhou, CN
Mumbai, IN
Vadodara, IN
Singapore, SG
Yokohama, JP

Automotive
Changchun, CN
Chengdu, CN
Kunshan, CN*
Shenyang, CN
Suzhou, CN
Osaka, JP

* Automotive Technical Center



In the clean room, Cihan Turan inspects the plastic lids for the latest standard container range from the Medical division. This product puts the company one step ahead of the competitors.

“WE HELP SAVE LIVES”

MEDICAL DIVISION:
How Complex Plastic Packaging Is Produced in the Clean Room

Cihan Turan was born in Mannheim and is 31 years old. After training as an office administrator, he got a job as a clerk and quickly realized that he was in the wrong field. So, he went back to school and then studied engineering and management at Darmstadt University of Applied Sciences, specializing in mechanical engineering. His main focus area was project management. Just as quickly as before, he realized this was the right path for him. At Röchling, he is responsible for the structured project development in the Medical division.

If Cihan Turan, Project Manager at the Medical division of the Röchling Group, wants a close-up view of the company's latest product, he has to change into a long, disposable non-woven coat, shoe covers, hair net, gloves and a face mask. This is obligatory attire for entering Röchling's clean room in Neuhaus, Thuringia. Here, an assembly machine shoots out the newly developed plastic caps, which will make it significantly easier for Röchling's pharmaceutical customers to package their medicines in the future.

Mr. Turan, what is special about the new product?
We have developed a standard container range, the special feature of which is the cleverly devised caps. In the future, our customers will be able to put various solid medicines in the same type of container. Then, they can select the corresponding lid depending on the requirements for the packaging determined by the relevant medication, such as airtightness. While we have not reinvented the closing mechanism as such, this interaction between container or bottle and lid is something new.

PATIENT SAFETY AS THE TOP PRIORITY

How will the customers benefit from this?
Our customers are interested in packaging different forms of medicine – such as tablets, capsules, powders and syrups – using the same system. They want one standard platform and not eight different packaging systems for eight different medicines, as is currently the case. Our new generation of tablet containers offers the customers such a platform.

What lids are available to the customers?
We offer lids with or without a membrane, with or without an induction liner (foil), with or without a tamper-evident ring, with or without a sealing ring and with or without a compartment for desiccant, to name but a few. These variants can be combined as desired, depending on the requirements for the packaging. We are talking about a multi-purpose premium lid, or an all-in-one product, based on the modular principle.

70

test laboratories exist
at the Neuhaus location,
where microbiological samples
are constantly taken.

6

GMP-compliant clean rooms grade C
are available, where 100 percent
of the products are manufactured.

22

times an hour the air
in the clean rooms
is completely replaced.

60

percent of the almost
300 employees at Röchling
Medical in Neuhaus work
under clean-room conditions.

What happens in the clean rooms at Röchling Medical in Neuhaus.

Who will you supply with the new container range?
Our customers in the pharmaceutical industry. We are offering them this almost sterile and functional, high-quality packaging in seven container sizes from 60 to 500 ml.

Hygiene plays a crucial role in your industry.
What requirements are placed on production as a result of this?
The primary goal of medical product law across the world is to ensure the health and necessary protection of the patient. Products are subject to GMP compliance – good manufacturing practice. This means they must be manufactured, handled, packaged and stored in compliance with the applicable requirements for quality management, which are extremely high. As our products are sold all over the world, they must also fulfill all international standards and requirements. In our clean rooms, we manufacture products in a low-particle, almost sterile environment – in accordance with GMP guidelines. Critical packaging and containers are additionally sterilized again after production.

How does Röchling Medical deal with the "human risk factor?"
Employees who work in the clean room must be able to think proactively and follow special codes of conduct. These rules can often make things tedious, so discipline is also required. We have created an awareness among our employees to behave accordingly. Even employees who have worked with us in the clean room for years receive training every three to four months, where the reasons behind everything we do are illustrated.

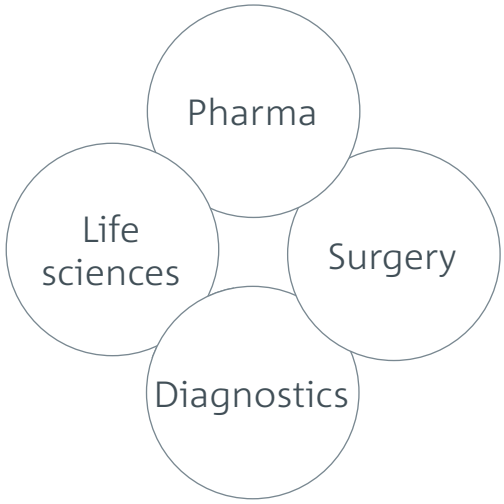
The airborne particles in a clean room must not exceed a specific number and volume per cubic meter. A clean room is designed so that the number of particles entering or inside the room is as low as possible. If required, other parameters relating to cleanliness are also regulated, such as temperature, humidity and pressure. For medical and pharmaceutical applications, the bacterial count must be taken into account as well as the particle count.

Microbiological samples are constantly taken from the clean rooms in Neuhaus and examined by an external laboratory. When planning a clean room, everything that affects production must be taken into account and brought in line with the strict official requirements. This includes clean air technology, clean room equipment, process media, process equipment, organization and, most importantly, the employees working in the clean room.

What exactly is a “clean room?”

What technology do you use in production?
As well as injection molding technology, we are proficient in almost all single- and multilayer blow molding technologies. This gives us a considerable advantage. We are able to meet the highest requirements for shaping, barrier behavior and impermeability – all under controlled, clean room conditions. Our expertise really sets us apart from the rest, with tremendous expertise in blow molding in particular. Using a combination of fully automated assembly machines and the robotic removal of products, we ensure that we can produce highly complex products on request, without them coming into contact with the human “hygiene risk,” if required.

What makes your company stand out?
There isn’t just one unique feature. We say that the secret is in the mix – starting with innovative product development, which creates precisely what the customer needs. Then, the whole thing is put into series production. In production, we use a range of highly sophisticated technologies – all under GMP and clean room conditions. Another huge benefit for customers is our logistics area, which covers 20,000 square meters. We must guarantee that we can always deliver – in our industry, product safety and security of supply take top priority. If we cannot deliver, it can cost lives. We also offer a commercial and technical aftersales service.



Röchling markets in the Medical division

Many of your products are tailored to your customers. How important is your standard range?
We want to be able to offer a product for every application – that is our ambition. But, of course, there are also standard products, which make up approximately 25 percent of our products. Make no mistake though, it is precisely here that innovations are important – which means anything but off-the-shelf products.

Why are innovations so essential?
Our aim is to constantly enhance our products, as the demands placed on our customers are also constantly changing. A motive for our innovations could be, for example, regulatory changes in the medical sector or general trends, such as the avoidance of preservatives or the manufacture of medicines on a biological and organic basis instead of a chemical basis. All this has an immediate effect on packaging, and this is where our expertise and ideas are sought after. Many of our innovations have come about as a result of long-term, cooperative development with our customers.

How does the development process work?
This type of task can only be successful if colleagues from a range of different areas and departments work together closely. Once we have decided to develop a product, we compile a specification, which lists all the requirements placed upon the product. Generally, products always

The new container range is produced in a compression blow molding process. Röchling has expanded and modified the already highly complex production facilities in Neuhaus accordingly. Moreover, the already extremely strict internal criteria have been heightened both in terms of the production process and the quality assurance technology.

become lighter, more user-friendly and safer. Then, we develop and produce a prototype and establish a production process. The whole process usually takes between three and five years.

What tasks are you personally responsible for?
I ensure that everything comes together smoothly and effectively. Our innovations cover every area of the overall process – from product development, through manufacturing, assembly and product qualification, to validation. On average, a total of 20 employees are involved in various subprojects. We also always have to keep the regulatory requirements in mind. My task is to bring all these subjects and units together.

Does Röchling ever develop products on its own?
Off the top of my head, I can tell you about our patented micromixer. Thanks to its microstructure, it can homogeneously mix substances of different viscosities. The medicines are mixed immediately before being administered through the nose. This way, the path to the brain is shorter than if the medicine is administered orally or intravenously. We truly believe that Alzheimer's and dementia patients in particular would benefit from this product. At this point, however, we lack the support of the scientific community, which would need to carry out the corresponding studies and tests. The pharmaceutical industry will only act when its effectiveness has been proven and it has gained political backing – that is the way these things work.

RÖCHLING FOUNDATION
Consistently Responsible

The Röchling family has viewed its corporate responsibility as a social obligation for almost 200 years. As early as the 19th century, it established charitable organizations for its employees and the population in the surrounding area.
The family continues to develop its social commitment to this day with the Röchling Foundation, which has been given shares in the family-owned company.

Five questions for
Annunziata Gräfin von und zu Hoensbroech,
Chairwoman of the Röchling Foundation Board of Trustees

Where and how does the Röchling Foundation get involved in social issues?
At the end of 2016, we reoriented the work of the Foundation. Now that the family-owned company has developed into a leading supplier of innovative products made of high-performance plastics, the Foundation has access to a high level of expertise in the field of plastics, which it can use effectively to contribute to environmental protection.

One area we are involved in is plastics and the environment. The reasons for this commitment can be seen from the company's values. We like to see our projects as providing inspiration and support from the start. In the ideal case, once the projects are completed, they continue to exist independently for the benefit of all those involved.

Furthermore, the Foundation's practical work in the area of engagement and expertise has already begun focusing on providing professional training for full-time volunteers from different spheres of life. Engagement is becoming more effective and providing others with support is more sustainable thanks to individual and targeted professionalization measures.

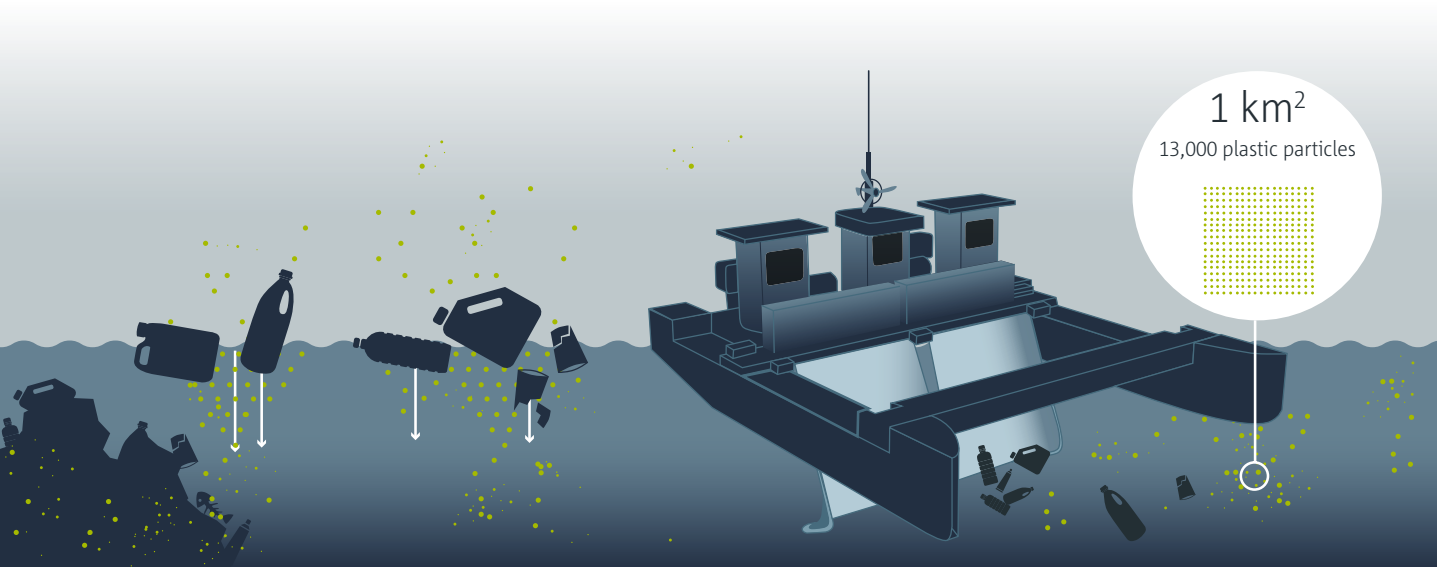
Why does the Röchling Foundation exist?
We are strongly of the opinion that this Foundation should not assume social responsibility just because it is the tradition of the family and the company. We want the primary motivation to be a responsibility for the future. For today's generation, the family's charitable tradition is an incentive to continue with this social engagement, developing it further and making it viable for the future through the collective work of the Foundation.

Is the work done by foundations really still relevant today?
I firmly believe that in our society, the activities of foundations will play an increasingly important role. If a foundation operates with transparency, is clear on its criteria and honest in its engagement, then it will play a role in the future. Here, I would like to talk about the Röchling Foundation in particular. In the areas in which we are active – plastics and the environment and engagement and expertise – I see a number of important tasks ahead of us. We would like to do our bit towards accomplishing these tasks.

How is the Foundation organized?
The Röchling Foundation GmbH has three associates. They hold the company shares as trustees for the Foundation and determine the annual financial budget for the Foundation's activities. Dr. Jobst-Friedrich von Unger is our General Manager and is responsible for the business management of the Foundation. The members of the Board of Trustees implement the projects within the established financial budget. Members of the Röchling family in particular are involved in the Board of Trustees on a voluntary basis.

What specific projects do you support?
I would like to mention two examples. Firstly, an important milestone for us was our support of the "One Earth – One Ocean" association. The association has made it their mission to reduce pollution and remove plastic waste, chemicals and oil from our waters. The catamaran "Manatee" was specifically constructed for this purpose. It is used as a "maritime waste collector," which fishes floating pieces of plastic out of the water. Our Foundation provided funding for the hull of the "Manatee" and the urgently needed infrared spectrometer – including accessories. This means that the association can now analyze and identify all types of plastic. As result, we are sustainably supporting the investigation of the problem and the planned compilation of an international pollution database, allowing "One Earth – One Ocean" to specifically target the threat.

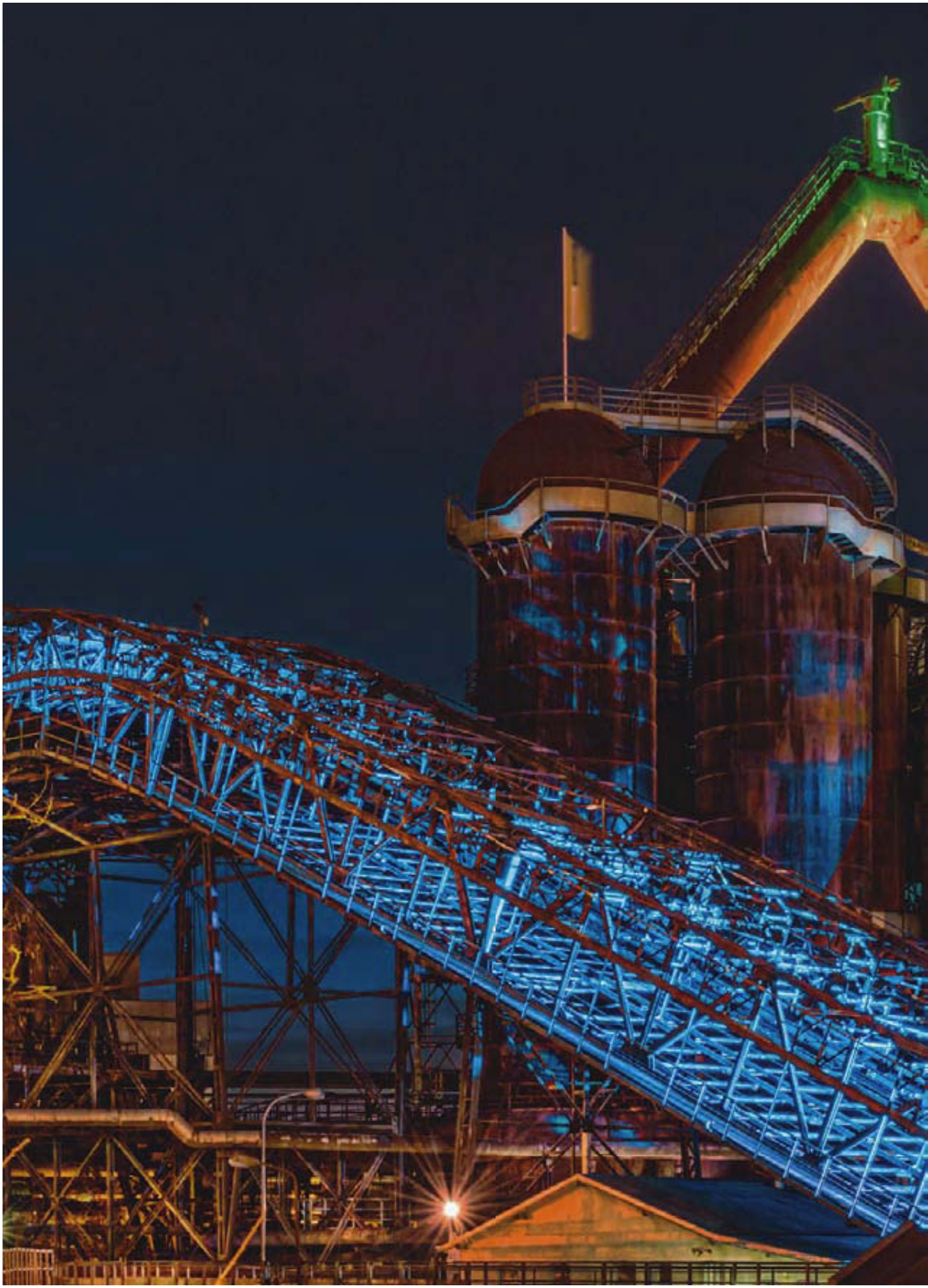
Another example is our cooperation with the Christoffel-Blindenmission, a charitable organization that we care deeply about. Together, we have established a rehabilitation center for people with disabilities in Siaya County, Kenya. The association has provided medical care for people in developing countries for many years now. Through a combination of treatment, therapy and medical aids, we are enabling patients to have access to education and work so that they can



The Röchling Foundation provides funding for the “Manatee” catamaran. It is both a maritime waste collector for plastic waste and a mobile analysis station. An on-board infrared spectrometer analyzes the pollution of water with microparticles.

participate in society as equal members. In addition to the rehabilitation center, an orthopedic workshop has been built and physiotherapy and occupational therapy services have been made available. In doing this, we aim to improve the lives of hundreds of disabled people in Kenya in the long term. We provide the facility with all the equipment and supplies needed and train and provide medical and administrative personnel. We have also set up a mobile field service for rural areas to ensure that patients receive follow-up care and are provided with information about physical disabilities. At the end of the three-year funding period, the project will be handed over to Kenya’s Ministry of Health.

www.roechling-stiftung.de



COAL – STEEL – PLASTICS

TWO CENTURIES OF INNOVATIVE MATERIALS

From Völklingen to the world: In just two centuries, the coal trading company established in 1822 by Friedrich Ludwig Röchling has developed into a global plastics group. Röchling's motto is to conquer new markets and regions with innovative materials.

Steel as a Driver of Innovation

The coal business was the basis for the company's involvement with the rising driver of innovation of the Industrial Revolution – steel. The four nephews of the founder of the company – known as the "Röchling brothers" – began producing coke and processing industrial iron in 1849. The acquisition of Völklingen Ironworks in 1881 marked the beginning of the steel era. Over 100 years later, the Völklingen Ironworks were designated as the first industrial UNESCO World Heritage Site.

By 1920 – just 100 years after the company was founded – Röchling recognized the potential of a new material and became a pioneer in plastics processing. The aim was to step away from a dependence on steel. In 1955, Röchling acquired Rheinmetall Berlin AG, the supplier of the newly founded German Army, diversified into other new business fields and, in 1978, finally left the mining industry altogether. With regard to plastics, Röchling mainly focused on internal growth and strategic acquisitions in new industries such as automotive plastics. The company also increased its presence on international markets, particularly in Asia and the USA.

Focus on Materials Expertise

In the new millennium, Röchling once again focused on its materials expertise. The Group divested all investments not related to plastics. With its increased internationalization and diversification into new industries, it renewed its focus on its unique materials and processing expertise that it had acquired over the last century.

In the 21st century, plastic products by Röchling are at the cutting edge in all industries – just as it was two centuries ago for Röchling steel. Today, the Röchling Group is the global leader in the processing of technical, high-performance plastics for industrial, automotive and medical applications.

THE RÖCHLINGS

CONTINUITY AMID CHANGE

Responsible, long-term, sustainable and value-creating – these are the qualities that characterize the thoughts and actions of a family-owned company. They also paint an image of the Röchling family, which can be traced back to the 17th century and whose current family members are the eighth generation of shareholders of the company. The Röchlings have always regarded themselves as "family entrepreneurs" – regardless of whether they were in charge of the operational management of the company or – as they are today – setting the strategic course of the international Group as part of the Advisory Board, which is made up of family members and external experts. The Chairman of the Advisory Board is Johannes Freiherr von Salmuth, a sixth-generation descendant of the company's founder.

Across almost two centuries, the family has closely steered its company throughout its eventful transition from steel producer to global plastics group. In good times as well as in difficult ones, the family provided continuity amid change and thus helped secure the success of the Röchling Group in the long term.

A CENTURY OF PLASTICS EXPERTISE

In **1916**, Holzveredelung GmbH in Berlin registered a patent for the completely new material, Lignostone. The material is made of wood but converted into a "plastic" with particular characteristics using a special compression process. In **1920**, the Röchling entrepreneurial family acquired the company. For the "steel barons of the Saar," this was the starting point for the plastics activities of the Röchling Group.

In **1935**, Röchling relocated Holzveredelung GmbH to Haren in Emsland, which is now the oldest Röchling Group location.

The **1960**s and **1970**s were characterized by pioneering materials developments, with Röchling releasing the thermoplastic Polystone® and the glass fiber reinforced plastic Durostone® on the market.

In the **1980**s, the plastics business of the Röchling Group was also characterized by acquisitions. By acquiring the Sustaplast Group in Lahnstein, the Group gained a specialist in the manufacture of semi-finished products made of plastic. Röchling entered the automotive plastics industry through the acquisition of the Seeber Group in South Tyrol.

The **1990**s and **2000**s saw consistent internationalization, with the establishment of subsidiaries and production locations in Europe, the USA, China and India.

In **2008**, the company entered the field of medical technology with the acquisition of the Oertl Kunststofftechnik Group. This market presence was bolstered by the acquisition of American company Advent Tool & Mold in **2012** and HPT Hochwertige Pharmatechnik in **2015**.

Since **2016**, Röchling has three independent divisions – Industrial, Automotive and Medical.

BEING A TEAM MEMBER

Professional, team-oriented, creative, open-minded, sociable and always prepared to develop further – these are the qualities of a Röchling candidate. Employees can look forward to exciting tasks, an informal working atmosphere, international projects and performance-related pay.

Röchling takes a lot of different approaches to candidate management to ensure it attracts competent and motivated employees. The company offers school leavers a choice of 18 different apprenticeships and dual study programs. Students with a technical or business background can pursue study-related internships, work as student trainees or write their Bachelor or Master thesis. Commercial and technical trainee programs are also available as well as direct entry. Röchling also runs a program for the qualification of recruits changing careers.

Wide Range of Seminars

At the annual appraisal meeting between employees and their supervisors, employees have the opportunity to choose from a wide range of seminars to suit their professional and personal development – from project management to psychology in everyday working life, intercultural training and individual coaching. Röchling also offers seminars for specific target groups, for example commercial managers or sales employees. As part of the seminars, internal speakers also impart their specialist knowledge to their colleagues.

Here, three employees describe how they came to work at Röchling and how they have developed at the company – including how they contribute to the company in their job, what it involves, and what Röchling offers them.

Eugen Schmidt,

General Manager,
Profit Center Asia
Business Unit Thermoplastics,
Suzhou, China

"You are learning for your benefit, not mine" – Eugen Schmidt remembers his mother saying when he went to school as a young boy. This message has shaped him and he only feels happy in himself when he has done his best.

High school, vocational training school (specializing in economics) and a higher education entrance qualification – with all this under his belt, Eugen Schmidt decided to train as an industrial business management assistant at Röchling Sustaplast. Schmidt grew up right next to the plant in Lahnstein. He loved his apprenticeship: "You learn about all the processes and departments, and the working environment is very pleasant," says Schmidt. Röchling was as impressed with the apprentice as he was with Röchling. His apprenticeship was cut short and he was offered a job in Sales, working in the customer service segment with a focus on the Asia region.

Alongside his work, Schmidt completed two years of professional training at the Chamber of Industry and Commerce in Koblenz to qualify as a certified industry specialist and in 2013 he moved to Röchling's Marketing & Development department for medical technology. This new role was assigned to him – for Schmidt this provides a vital boost for every professional career: "It is extremely important to always have new opportunities on the horizon. Röchling offers many new opportunities, which you simply have to take advantage of and prove your worth at."

Schmidt built up his knowledge of the field of medical technology by completing specific training courses. To get a feel for the industry, he attended international trade fairs and built strategic relationships with customers.

"THE COMPANY PROVIDES MANY NEW OPPORTUNITIES."

This is where his other strengths come in – he enjoys communicating with colleagues, thinks outside the box and understands what makes people tick. It did not take long for him to identify what customers of medical technology want and what Röchling can offer them.

Röchling Recognizes and Nurtures Talent

In 2014, the management sent Schmidt to Asia – initially for a few weeks. This turned into something more. Soon, he was promoted to Deputy Managing Director and then, in 2015, Managing Director of Röchling Engineering Plastics (Suzhou) Co., Ltd. (REP). In March 2017, Eugen Schmidt also became General Manager of Röchling Engineering Plastics Pte. Ltd. in Singapore, and he is now responsible for all the activities of the Business Unit Thermoplastics in Asia. This was a meteoric rise based on the skills, grit and courage of a young man – supported by a company that recognized and nurtured his talents. Schmidt modestly accounts his success to others: "Whether colleagues, team leaders, departmental heads or management personal – I don't have to worry about turning to anybody for support. I really appreciate this environment." According to the 29-year-old, he learns step by step whenever he is assigned a new task and this has enabled him to learn how to deal with the increased level of responsibility. One source of support is seminars – including change management, project management and intercultural training. He has worked with the CFO to expand his financial knowledge and is still in close contact with him and management today with regard to important issues.

Schmidt has now been in Asia for two years and he loves his job and the freedom that it gives him. "When I want to do something, I do it because the company does not create any obstacles." There are 35 employees at REP in Suzhou, where mainly polypropylene sheets are manufactured. Schmidt has got used to his new international environment and now feels at home both in China and Germany. "At the moment, everything is just right. And I know that I have the opportunity to develop further."

“NO CULTURE IS BETTER THAN THE OTHER.”

Domenico Solazzo,

Head of Product Development in Electronics, Röchling Automotive, Worms, Germany

Domenico Solazzo has an affinity for internationality. His mother is German and his father is Italian. He spent the first six years of his life in Worms, then his family moved to Bisaccia, his father’s home village in Italy. It was a change that has shaped Domenico Solazzo. The times of going to the swimming baths by bus, quickly eating an ice-cream or going to the cinema were gone. In Italy, he was woken by a rooster, went to school on a donkey and had to fetch water from the well.

To begin with, things were not easy for him with his classmates because he did not know the unwritten rules in Italy. “That was the first time I realized that there were different cultures. And that no culture is better than the other – they are just different.” Solazzo gradually got used to the new customs and adapted to his environment. Now, he was one of the team at school, but he never forgot where he came from and what was important to him.

A Passion for Finding Solutions

In Italy, Solazzo obtained a degree in automation technology. In 2003, he went on holiday to Worms to stay with his mother’s family. At this point, the 22-year-old knew hardly any German. As luck would have it, at the time Röchling Automotive was looking for an electronics engineer. Solazzo applied and got the job. He started in the Service department and then took on more and more tasks involving maintenance, trouble-shooting and automation. In 2009, he moved to Development. His job was to develop and validate actuators for the active air flap systems. “I really enjoy finding solutions,” says the 36-year-old.

Alongside this, Solazzo attended the vocational training school in Worms, where he qualified in 2010 as a state-certified automation engineer specializing in process automation. At Röchling Automotive, he became a team leader in Development and since 2014 he has

headed up Global Product Development in the field of electronic engineering. His team is made up of 13 employees at locations in Germany, Italy, China and the USA. All the employees have very different cultural backgrounds, as they come from Germany, Italy, Venezuela, Pakistan, the USA, China, Korea, Lebanon, France and Turkey – a diverse mix. Their cooperation across borders occasionally reminds Solazzo of his time at school in Bisaccia. "My colleagues accept German customs but they also have their personal and cultural freedoms."

Intercultural Training

Within his team, he distributes international projects and tasks so that the customers are assigned the contact person who understands them best – in every respect. "Misunderstandings can easily arise when people from different cultures communicate with each other," says Solazzo. This is where Röchling's intercultural training can help, in which participants develop a deeper understanding of different cultures and the patterns of behavior and communication associated with these cultures.

Röchling is also supporting Solazzo in completing a correspondence course in business management. The course includes topics that have high practical relevance for his team including quality management, operational performance, management techniques, management accounting and corporate management. Solazzo incorporates everything he learns into his job, always on the lookout for ways to optimize things. "I have a lot of responsibility, but this gives me the freedom to shape things and every day I receive confirmation that Röchling has confidence in me."

Nicole Habedank,

Head of Human Resources,
Röchling Hochwertige
Pharmatechnik (HPT),
Neuhaus am Rennweg,
Germany

Once in sales, not always in sales. Nicole Habedank works in Neuhaus am Rennweg and has focused on quite different areas during her professional career.

When she left school, she decided to train as an industrial business management assistant with a polymer specialist in the Upper Palatinate, which she passed with distinction, and the company took her on. However, because Nicole Habedank loves languages and wanted to use these skills later on in her job, she still completed a one-year training course at the foreign correspondents school in Coburg.

In-Service Further Training

Habedank received offers from Strasbourg and Brussels but rejected them all in favor of a job in her native Thuringia. “Life is great here, especially if you have a family.” Habedank joined Heinz Plastics GmbH in Tettau before coming to Röchling HPT a few years later. For six years, she worked in Sales with a focus on the European countries outside Germany. Her job included quotation and order processing as well as handling complaints – conventional sales activities. “I was also able to use my language skills, which I really enjoyed.” At the same time, she realized that “it couldn’t be all there was to my career.” While still working, she decided to do in-service training as a certified industrial specialist.

“CREATIVE IDEAS ARE WELCOME HERE.”

Two years later and the time had come; Habedank moved from Sales to Human Resources at HPT – a subject she had been interested in for a long time. The company was growing rapidly at this time and the corresponding structures needed to be put in place and standards developed, including binding job descriptions, legal employment contracts and training documentation. The Human Resources team was also growing because management knew that HPT would only be able to attract the qualified staff it needed to the area if it could present itself as an attractive employer. This is precisely what the human resources team is for. Habedank drove regional marketing forwards, gave presentations in schools together with her colleagues, drew up job advertisements, redesigned the candidate selection process, trained industrial sales reps and further developed workplace health promotion. All this in addition to her general human resources tasks and her in-service training as a certified business economist.

Varied Work, Fantastic Team

At the end of 2011, it was decided that there would be a separate Human Resources department headed up by Habedank, who was now a mother of three. It was a challenging role for the 38-year-old – extremely varied work, a great team and countless opportunities to be creative. This is what the company wanted. Together with the Head of Training, she has developed a project for career changers, in which people with professional experience in a commercial/technical role are trained as machine and plant operators. Thanks to this project, more than 20 employees have trained and passed as machine and plant operators over the past three years. Röchling HPT has also had success with the “Employees Recruit Employees” program, as a result of which 38 members of staff have been recruited.

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from left

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Phone +49 621 4402-0
Fax +49 621 4402-284

info@roechling.com
www.roechling.com

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Editorial Staff

Christiane Müller,
Hamburg

Layout

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