



Sustainability report 2017

Including the EMAS environmental declaration
for the reporting period from
01/01/2016 – 31/12/2016



the plus of pure
performance

Key indicators, content:

highlights of 2016.



Key indicators of Schülke & Mayr GmbH	2016	2015
Economic indicators*		
Revenue (million EUR)	322	281
Produced volume in t	38,630	36,990
Tangible assets (million EUR)	8.2	7.9
Environmental indicators*		
Specific power consumption per ton of product	222	222
Water consumption [m³/t]	1.67	1.65
Waste water emission AOX value per liter of wastewater (in mg)	0.09	0.09
Waste per ton of product [kg/t]	1,726	1,612
Social indicators*		
Employees*	1,152	944
Employees**	671	657
Trainees**	24	23
Days of professional training**	2,120	1,616
Occupational accidents**	3	0

* schülke worldwide. ** Refers to the audited Norderstedt location.

Organizational structure of our headquarters in Norderstedt/Hamburg



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Foreword.

Dear reader,

As a leading manufacturer of chemical and pharmaceutical products, including disinfectants and special technical preservatives, schülke carries a tremendous responsibility towards the environment.

Today, we are publishing our fourth sustainability report since 2008. It includes an EMAS Environmental Declaration.

The past ten years have seen a considerable international expansion of our business areas. Our marketing and sales activities now cover more than 100 countries, and we operate 22 international sites. Besides our headquarters in Norderstedt, we have production facilities in France and Brazil. We have further expanded our position in Asia by acquiring the MICROSHIELD® portfolio.

We protect lives worldwide – our mission motivates us to grow.

Having positioned ourselves in the international market successfully, we have been able to more than double our revenue since 2008. We want to keep this dynamic up: our growth strategy will lead us to a successful future. We will further strengthen our presence in international markets without losing sight of our core markets.

Sustainable services will be an essential factor of our future success. They include aspects such as chemical compliance, energy efficiency, measures to reduce the environmental impact of our business activities, and the responsible use of resources. We develop innovative products to serve our target markets and acquire new partners and customers – including in Asia and Brazil.

We also plan to implement measures to shorten transport routes, which will have highly positive consequences: less fuel, fewer expenses and lower CO₂ emissions.

You may have noticed that this report has a new content structure. It is the logical next step in its development from an environmental declaration to a sustainability report that represents our business model along the value change and facilitates transparency and comparability with our competitors. This report summarizes the developments that took place in 2016 (EMAS) and parts of 2017. It allows all stakeholders to assess the development of our environmental and energy management system objectively.

We are grateful for your interest in our company and hope that this sustainability report will provide you with useful information.

Our reporting on sustainability is also an invitation for dialogue. We welcome suggestions and comments.

Your schülke management team



Dr Peter Oltmanns
Director
Research &
Regulatory Affairs

Geneviève Samson
Director Industrial
Operations &
Supply Chain
Management

Lars Lemke
Director
Business
Transformation
Management

schülke – protecting lives worldwide, taking responsibility on site.

The chemical and pharmaceutical company schülke is an international market leader in the fields of hygiene, infection prevention and chemical and technical preservation.

Since 1996, it has been a part of the global corporation Air Liquide, whose primary business activity is the sale and marketing of industrial and medical gases. Air Liquide employs more than 67,000 staff in more than 80 countries and generated a turnover of EUR 18.138 billion in 2016.

The schülke group employs 1,152 people, which includes staff at its international branches. In the reporting period, 693 employees worked for schülke in Germany. 671 of them are located at the Norderstedt headquarters, working in production, logistics, research, marketing and sales. In addition, 24 trainees are learning seven different occupations in Norderstedt. schülke generated an annual revenue of more than EUR 322 million in 2016.

Norderstedt* near Hamburg has been the location of the schülke headquarters since 1963. This site comprises the factory, an office building and the logistics center with a capacity of 18,000 pallet bays. State-of-the-art warehouse and fire protection methods guarantee that our products and packaging materials are stored in safe and environmentally friendly conditions. Approximately 40% of the plot, which measures 80,000 m², have been built up.

schülke has made it clear to its employees and the public that preventing accidents and limiting its own environmental impact are two of its main responsibilities. The Norderstedt site has an integrated system for the protection of occupational health and safety and the environment. It precisely controls and documents all processes and procedures, behaviors and responsibilities at schülke. On the basis of this documentation, the company has developed guidelines for all employees. Our mission: we protect lives worldwide!

* The Norderstedt site is the subject of the EMAS III audit.



**Dr Frank
Stahl**
Chief
Operating
Officer

**Anand Raj
Bhandari**
Director
Business Line
Special Additives
International

**Dr Werner
Weltgen**
Director
Quality &
HSE

**Jörg
Zohner**
Director
Finance &
Controlling

**Ilja
König**
Director
Human
Resources

**Christian
Last**
Managing
Director

schülke – business areas.

The business activities of schülke belong to three separate areas: infection prevention, industrial hygiene and specialty chemicals.

Some of the microorganisms that occur in our environment are hazardous germs that can cause infection and disease. Our infection prevention segment offers effective products, comprehensive services and expert advice to prevent contamination and disease.

Hygiene is a crucial aspect of production and processing in industrial environments. Good hygiene is the best basis for human and environmental health. Correct disinfection practices are particularly important in many industrial contexts. They can have a direct impact on the quality of the products that are being manufactured or processed. The effectiveness of decontamination and risk reduction measures relies on three factors: disinfectants, disinfection techniques and consultancy. Our industrial hygiene segment offers comprehensive hygiene concepts to support the diverse activities of our customers.

Special Additives International is our specialty chemicals segment. It develops, produces and distributes technical preservatives for a wide range of industrial applications. Its customers particularly come from the industries for cosmetics, oil and gas, home appliances, construction materials and metal. Technical preservatives protect water-based products from microorganisms. We also offer multi-functional skincare additives for cosmetic products.

Other central units, such as research and development and regulatory affairs, safeguard our market presence by ensuring our continued ability to offer innovative products and applications. Our integrated supply chain management covers production and logistics, quality control, occupational safety, HR, finances and IT. These areas control the value creation process of schülke.

schülke – portfolio.*

schülke develops, manufactures and distributes more than 220 products, including disinfectants, antiseptics, medical skincare products, preservatives, deodorant substances and system cleaners. These products belong to different categories – medical products, biocides, pharmaceuticals, cosmetics – and are governed by different legal frameworks. Our production processes are designed in

compliance with this wide range of legal requirements and in consideration of our customers' high standards.

We offer innovative technologies, products and services in our three core business areas: specialty chemicals, infection prevention and industrial hygiene.

* Further information about our product portfolio and our product responsibility is available on page 21 and onwards.

The three schülke business areas

Infection prevention

A wide range of hygiene products and services to ensure the greatest possible hygiene.

Areas of application include

- hospitals,
- medical and dental practices,
- mobile nursing services,
- cosmetic studios,
- veterinary practices,
- emergency services,
- geriatric care,
- tattoo and piercing studios,
- drugstores

Services

- hygiene planning and consultancy,
- education and training,
- product application advice,
- technical services



Hospitals have the most extensive requirements in the field of infection prevention.

Industrial hygiene

A wide range of hygiene products and services for industrial needs.

Areas of application include

- manufacture of pharmaceuticals,
- manufacture of medical products
- cosmetic industry,
- food production aid processing industry,
- animal facility,
- laboratories,

Services

- hygiene planning and consultancy,
- product application advice,
- technical services



Hygiene plays an extraordinarily important role in particularly sensitive areas such as pharmaceutical production.

Specialty chemicals

A wide range of products and services to facilitate optimal preservation.

Areas of application include

- cosmetics,
- household and cleaning products,
- concrete additives,
- paints and varnishes,
- glue and adhesives,
- cooling lubricants,
- mineral oil and gas extraction,
- mineral preservation,
- biocidal system cleaning

Services

- technical support in laboratories and microbiological operating controls,
- training



The specialty chemicals areas offers a wide variety of solutions ranging from household applications to the extraction of mineral oil.

The world is our market, health our target.

schülke is developing dynamically: a chemical company with a long tradition is becoming a modern pharmaceutical and chemical partner. All strands of our business meet at our headquarters in Norderstedt near Hamburg. This is where our central departments work together like a well-oiled machine: research and development, management, production, marketing, sales and logistics. It is also the place from which we drive our industry forward as one of the market leaders for infection prevention, technical preservatives and multi-functional skincare additives for cosmetic products. We create successful hygiene solutions for our customers and continued global growth for ourselves.

schülke is represented on all five continents by its subsidiaries and other national distribution partners. Customers all over the world value the products and services of schülke highly. Thanks to our local advisors, they have direct access to our services at any time.

Sales channels and customer segments*

Our sales channels

- sales representatives/distribution
- online sales
- OTC
- private label

Our main customer segments

- household appliances, construction materials and metal industry
- industrial hygiene
- hospitals
- cosmetic industry
- medical/dental establishments
- oil and gas industry
- private institutions

schülke – international sites*

German headquarters

Schülke & Mayr GmbH
Norderstedt

Europe

Great Britain
Netherlands
Belgium
Luxembourg
France
Poland
Czech Republic
Slovakia
Russia

Americas

Austria
Switzerland
Italy
Turkey
USA
Brazil

Asia/Pacific

Australia
New Zealand
Singapore
Malaysia
India
Japan
China



* For more information about our international subsidiaries and sales partners, please have a look at the back cover of this report.

The Subsidiary OPAL

OPAL Service GmbH was founded in 1999 as a consulting firm promoting professional hygiene management in healthcare facilities. The law prescribes that medical and industrial facilities require a perfectly functioning hygiene policy. It is composed of:

- skilled experts,
- validated processes,
- qualified staff.

OPAL is a specialist for infection hygiene that advises clients throughout Germany. In partnership with our clients, we focus on establishing effective hygiene management systems.

Surveys conducted in hospitals and healthcare facilities during the reporting period have confirmed that OPAL clients are satisfied with the hygiene consultancy they receive from OPAL. (For more information on the surveys, refer to the chapter Stakeholder Management on page 12 and onward).

The OPAL Academy offers vocational qualifications and training courses in the fields of hygiene and the preparation of medical products. It has been developing its portfolio on the topics of hygiene management and the proper preparation of medical products continuously for more than ten years.

Since 2017, OPAL has been selling selected hygiene products through its online shop. The items offered in this way are pre-selected by our hygiene experts. This keeps the product range for each field of application as narrow as possible for a straight-forward user experience.



Infection prevention
= qualification + process + products

Academy

- education and training
- in-house courses
- online training
- location: Norderstedt/
Frankfurt

Consultancy

- clinics
- physicians
- nursing homes
- hotels
- kitchens
- industry

Online shop

- hygiene products
- pharmaceuticals
- biocides
- medical products
- cosmetics

Sustainable corporate management relies on clearly defined rules and values.

To comply with social, environmental and ethical standards beyond legal regulations and the boundaries of our production site, we need clear guidelines. As part of our corporate responsibility, we must communicate our stance towards our company values and goals in explicit terms.

To us, corporate governance also includes the control and direction of a company that strives for sustainable, environmentally friendly and socially just value creation processes across all levels of management.

The schülke management aims for a shared understanding of openness and integrity. It believes in clear communication and flat management hierarchies that facilitate efficient decision-making processes.

Our mission

In a globalized world, germs know no borders. It is easy to underestimate their risk to humans and materials. Instead of combating root causes, we often treat symptoms.

Our mission is to change this:

we protect lives worldwide!

With prevention, innovative technologies, products and services in select segments of hygiene and preservation.

Our company guidelines.

Our company guidelines enshrine the fundamental standards to which we hold our conduct as an international pioneer in our disciplines. They are based on the Air Liquide business principles and constitute the basis of schülke's integrated management and business activities.

- We use progressive, safe and environmentally friendly production processes. Economic criteria are as important to us as strict adherence to high quality standards. We are always aware of the social relevance of our conduct.
- We always conduct our business in compliance with the law and principles of free competition. We reject corruption of any kind, and our anti-corruption measures go beyond the legal requirements.
- We approach quality in a comprehensive way as part of our Total Quality Managements (TQM)

system. This means: we fulfil the expectations of our internal and external stakeholders. We always take criteria such as cost and benefits, occupational health and safety, environmental protection and sustainable supply chain management into account.

- We strive for continuous improvement and long-term growth of our company. We want to use our profitability to prepare for future requirements and challenges at an early stage. Innovative thinking is an essential pillar of our international growth strategy and success. We further ensure the expansion of our international market shares by propelling the digitalization of our business processes.
- Our relationship with our suppliers is based on our continuous, objective assessment of their services. The quality and competitive edge of their products and services play as much of a role as

Dr Werner Weltgen,
Director Quality & HSE:

"Success is built on clear rules. Our approach of Total Quality Management and our integrated management system are the foundation of the sustainable development of schülke."



their compliance with international social and environmental standards. Fair partnership and productive dialogue with our suppliers and business partners are important to us.

- Our international growth strategy never loses sight of our social responsibility in the regions where we work. We support public welfare initiatives, especially in the fields of environmental protection, healthcare, safety and education.

In order to apply our company guidelines to our work, we operate an integrated management system that covers all business areas. It constitutes the basis for our strategic decisions and programs and minimizes risks for our company, its owners and employees, society and the environment.

Our values.

Reliable:

"trust in experience"

Our solutions and application capabilities meet the highest standards. We draw from more than a hundred years of experience, which creates trust – the basis of long-term partnerships and global growth. Customers of schülke choose trusted products and outstanding quality.

Fair:

"focus on people"

We combine effective products with expert consultancy and comprehensive customer service. This makes us a professional partner and advisor. Customers of schülke get to take advantage of tangible added value that goes far beyond the mere provision of excellent products.

Proactive:

"use global opportunities"

We recognize future opportunities and challenges. We develop solutions that are as innovative as they are sustainable. We think and act with the future in mind. Customers of schülke are one step ahead. Always.

Quality is more than a claim: Total Quality Management (TQM) at schülke.

schülke has been running its business activities sustainably and pragmatically for many years. Our company philosophy, which is the foundation of our everyday work, is based on a holistic approach to quality. Beyond the mere quality of a product or service in the traditional sense, it comprises all aspects that influence the business process and its individual steps. The continuous improvement of our products, processes and services has clear goals:

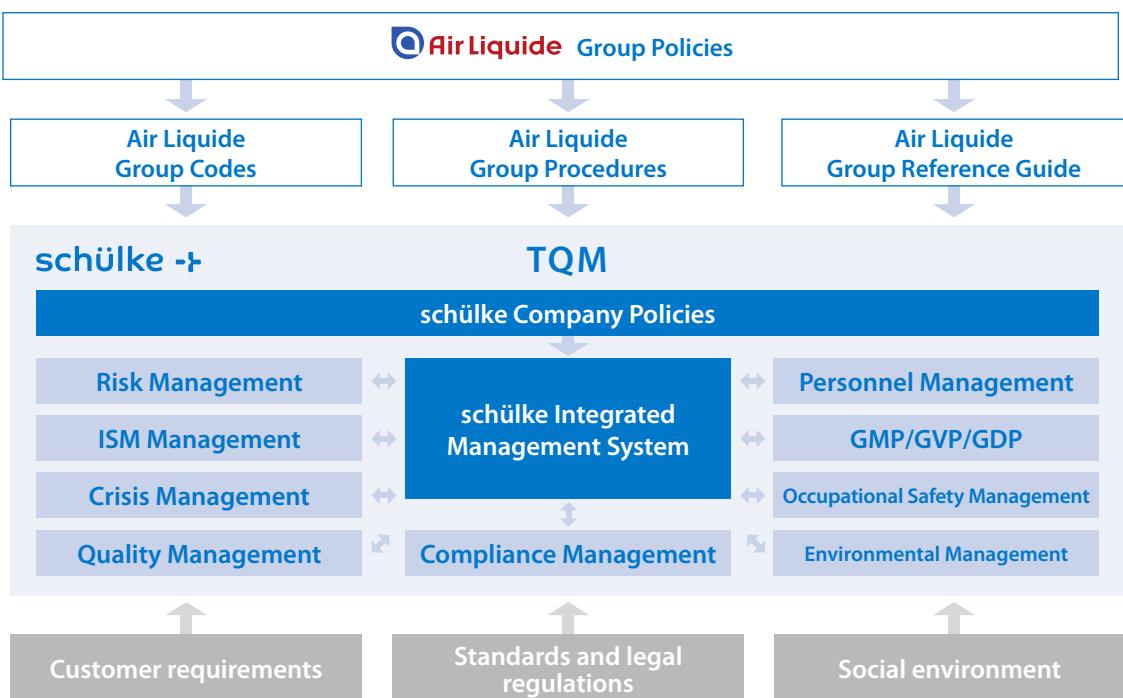
- economic success,
- customer satisfaction,
- employee satisfaction,
- safe conduct,
- compliance with legal requirements.

At schülke, comprehensive quality management refers to the continuous control and improvement of product and service quality in consideration of economic aspects such as time and cost. Our comprehensive TQM approach is based on our deeply held belief that quality

- goes beyond products and services – it encompasses processes, working conditions and the environment;
- is a systematic and planned process with relevance for the entire company and exceeds mere technical issues;

- must be managed systematically to ensure best practice at each individual workplace, in the partnership between different departments, and even beyond the boundaries of the company;
- is ultimately a matter of customer opinion when it comes to products and services;
- can only be optimized if all employees work for it. Everyone involved in the value creation process must therefore be accepting and motivated.

We use and steadily advance an integrated management system to implement the TQM. It is certified to several standards, including ISO 9001, ISO 13485 und ISO 14001. The management system further reflects the provisions of product law. It contains all management tools needed to comply with the requirements of the corporate group.



Our corporate culture: compliance through TQM.

As a globally active company, we are subject to many international laws, regulations and standards, which change constantly. Compliance with all applicable rules and legislation is becoming an increasingly complex challenge.

We take compliance very seriously; it is an integral component of our TQM. Dealing with global issues, such as human rights, corruption, and antitrust law, is as much an obligation for us as it is a desire. Our compliance management covers topics such as product law, environmental law and occupational safety. It also governs our pursuit of long-term goals, including:

- safeguarding the long-term success of all business divisions by way of responsible, transparent conduct,
- ensuring safety in our everyday business,
- increasing the value of our company,
- living up to the trust that our customers have placed in us for decades and consolidating it further by conducting our business in compliance with laws and regulations.

We have implemented our systematic compliance management by

- establishing a compliance organization and reporting system,
- forming a compliance workgroup to identify, analyze and communicate relevant topics,
- regularly training all members of our staff in compliance topics;
- creating our written code of conduct, which communicates the rules and regulations governing our business activities and requires strict adherence to these rules by way of written confirmation;
- ensuring that all managerial staff of our company conduct themselves in an exemplary fashion and in full compliance with all rules.

Our optimization measures are directly inspired by the market.

As part of its compliance with ISO 13458, ISO 14971, RL 93/42/EWG and MPSV, schülke monitors the market constantly. We achieve this by means of our Post-Market Surveillance (PMS) system. PMS is a systematic process that gives us access to information about products that are already in circulation. It is closely linked to our systematic market moni-

toring and reporting system. Based on these activities, we derive corrective and preventive measures that result in the continuous improvement of schülke medical products.

Spotlight 2017: transparency creates safety.

The new European Medical Device Regulation (MDR) came into force in 2017. This law aims to improve the transparency and traceability of medical products on the European Single Market. It has considerably increased requirements for manufacturers of medical products. In addition to new requirements in clinical assessments and special certification processes, the introduction of

product identification numbers (Unique Device Identification, UDI) constitutes a particularly important change. schülke has had suitable organizational structures in place since the middle of 2016. We meet all requirements stipulated in the new 2017 MDR.

Great influence, great responsibility.

We are a manufacturing company and service provider in one. In practice, this means that the actions of schülke affect the interests of many people in different industries and countries. This gives us great responsibilities: in everything we do, we must consider the impact that our economic activities will have on people outside of our own core business.

We constantly communicate and cultivate healthy business relationships with our internal and external stakeholders and interest groups – for their benefit as well as ours. We conduct our partnerships in a fair, open and respectful manner. We work hard to integrate different groups of strategically relevant stakeholders into our business and decision-making processes. It one of our greatest challenges and an indispensable factor in the future performance and success of schülke.



We must always consider the impact of our actions on humans and the environment – far beyond the boundaries of our production site. That is our understanding of responsibility.

We have high standards. And we apply them to our stakeholders, too.



* Near the company (neighbors), regional and primarily at the Norderstedt site.

Aren't customers a mystery? We've asked them what they want.

Traditional surveys have become a standard tool in modern stakeholder relations management. We have been using them for much longer. Learning about our customers' expectations and needs helps us strengthen our business relationships deliberately and sustainably. To avoid asking the wrong questions based on our own perspective, we also contract independent third parties for our customer surveys.

In 2016, Ipsos Loyalty carried out a systematic survey on the topic of industrial hygiene for us. This external partner company specializes in relationship management between companies and their customers and employees. It helps its clients gauge the customer experience, the satisfaction and loyalty of their customers and staff, and their own relationship to these important stakeholders.

Ipsos Loyalty conducted one-on-one interviews with the purchasers and technicians of our customers in the food and life sciences industries to find out their opinion about schülke disinfectants and service. Their research focused on specific aspects, such as:

- reliability when delivering products,
- availability of goods,
- quality of services relating to technical consultancy,
- responses to complaints (if any),
- product quality,
- viability of individual orders (optimization of processes, extraordinary projects, etc.).

The external institute further investigated how satisfied our customers are with our commitment to sustainability.

All results were extremely insightful. Many of our customers are very satisfied with the availability and quality of our products, their usability, our technical support and consultancy and the order process itself. But the study also identified individual criteria with room for improvement. In particular: the topic of sustainability at schülke. Our customers believe that there is great potential still. We view their feedback as a challenge and encouragement to improve our sustainability score further.

Customer satisfaction ranks on top of our to-do list.

Our subsidiary OPAL conducted a similar, systematic survey of customer satisfaction in 2016. It focused on the hygiene consultancy OPAL offers to hospitals and care institutions. Ahead of the survey, the company distributed 97 questionnaires to the designated contacts in the various institutions per post or in person. The results of the survey were pleasing: all clients were satisfied with the contractual agreements, technical skills and service offered by OPAL.

The questionnaire also inquired about their assessment of the process performance and training opportunities. Participants spoke highly of the technical skills and quality of the training courses on offer, but we also received constructive criticism. Our optimization process has been adapted accordingly.

It identifies unused potential for optimization in customer communication and implements according measures. The following steps were determined during the reporting period:

- redesign of the OPAL website,
- publication an annual brochure containing the complete education portfolio offered by the Academy,
- launch of an online academy,
- introduction of structured annual evaluation interviews between the contracting parties in order to optimize feedback processes,
- preparatory discussions on the hygiene consultancy service,
- constant availability of a telephone hotline for customers and potential seminar participants,
- creation of a Facebook page.

Customer satisfaction across all channels.

OPAL uses a range of formats for its customer satisfaction analysis, including conversations, feedback questionnaires and e-mail inquiries. It organizes team and management meetings to evaluate the survey results and determine appropriate steps.

Ersin Yahyaoglu, member of the works council (relieved of duty):

"I have been a workers' representative at schülke for 24 years. During this time, I have learned something very important: you must always be there for your customers and colleagues. If you are, everything will go well."



Responsibility along the value chain.

When it comes to value creation, our responsibility starts with upstream processes and procurement. Financial advantages are no longer the only decisive factor in international competition and risk management. Safety, social and environmental

standards have entered the picture. If we want to generate value sustainably and minimize risks in our processes, we must meet our suppliers on equal footing.

Confidence is good. Control even better.

The supply chain management department was established in 2016. This was a step towards greater control along the international value creation chain. In the future, the supply chain manager will focus on sustainability criteria along the supply chain and control both upstream and downstream processes.

This makes our supply chain management an important contributor to our TQM system: it drives the continuous improvement of our processes. Its work helps us honor the QM agreements we have made with our suppliers. It also takes the supplier contracts by Air Liquide, the parent company of schülke, into account, as they are an important part of the agreements used by schülke.

Reliability is another important goal.

The schülke purchasing department carries great responsibility. Its duties go far beyond the creation of optimal purchasing conditions for raw materials and services. It is also the direct point of contact for our suppliers and tasked with monitoring their loyalty constantly. To nurture our business relationships, we must keep a close eye on the criterion of reliability.

A supplier is only sustainable if it can ensure the future availability of the raw materials needed for further value generation. Many of them are specialty materials: our partners must make them available in sufficient quantities to prevent production downtimes. This, to us, is reliability.

We face growing challenges along the entire value creation chain.

Suppliers

Production

Customers

The schülke sustainability strategy.

Our goals remain the same. It is our strategy that must be adapted. We have based our business strategy on two overarching goals. One, to be a reliable partner to our customers and suppliers. Two, to be a reliable employer to our staff. Our mission remains unchanged: we protect lines worldwide which means we combat and prevent infection and contamination worldwide.

Sustainable management plays a major role in this mission. It is a matter of securing our future viability and performance in an international competitive environment. Sustainable management also governs our business decisions, as we strive to act for the benefit of future generations.

As a manufacturer of chemical and pharmaceutical products, we take full responsibility for the environmental impact of our work. As early as 1996, we decided to implement the EMAS declaration in full. For the sake of the continuous improvement of our environmental goals and transparency towards our stakeholders, we have been issuing our environmental declaration since the 1990s to document the use of the certified environmental management systems ISO 14001 and EMAS III. Both systems play an important supporting role in our project of expanding the Norderstedt production site.

As the EMAS certificate was expanded to include topics of energy management, energy efficiency became a major part of our environmental management. Today, we face new challenges. They include compliance with social and environmental standards in upstream and downstream processes and the increased integration of relevant groups of stakeholders, an important element of the schülke sustainability strategy.

In the future, this strategy will focus on the interplay of environmental, social and economic aspects. Within the scope of our sustainability management system, we document and communicate every action taken for the sake of sustainability.

As we determine important aspects of sustainability and define corresponding measures, we critically evaluate our own business model and value creation chain on a constant basis. This report documents our sustainability measures in the following fields:

- product responsibility,
- sustainable employment,
- environmental responsibility.

**Dr Tim Hünniger,
Safety Manager for Medical Products:**

"Part of my work is to assess reports about risks inherent to medical products and attend to my duty of disclosure. We aim to guarantee the greatest possible safety to patients every day. Success means getting no reports."



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 - grotan® OX: a new level of safety in fuel production.
 - parmetol® SBX and parmetol® BPX in combination with the hygiene concept – our intelligent preservation system.
 - octenisan® set: provides safety, creates trust.
 - Ideas grounded in reality: sterile, sporicidal impregnated wipes.
 - Gentle on the environment with peracetic acid.
- 25 Sustainability shapes all our services.**
 - It's in our blood.**
 - mein-hygieneplan.de: outstanding quality management with digital solutions.
 - Modern oil production: innovative and international.

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- 27 A passion for personnel management.**
- 28 We kick-start careers.**
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- 28 Support the next generation.**
 - Shape the future for everyone.
- 29 Only the best for our staff. They deserve it.**
- 29 In charge of an outstanding team.**
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- 29 The digitalization makes us faster.**
 - And smarter.
- 30 Each employee counts. Together, we succeed.**
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- 31 Posture matters. Sit right – for the sake of your health.**
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- 32 We stay active. Together.**
- 33 Top shopping. Top motivation.**

Environmental responsibility

35 An environmental policy cannot consist of paragraphs only. It must manifest itself in every aspect of our daily work.

- Example instructions for the management of major environmental aspects
- Environmental organization

37 We take responsibility. We take it seriously.

- Main aspects and indicators and direct and indirect effects.

38 Great things require focus. Our energy management is a good example.

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39 The measure of our success: environmental indicators.

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- Waste
- Remediation wells

42 Additional steps in 2017.

43 Sustainability program 2017–2019.

Product responsibility



Versatile products and a holistic approach.

When it comes to our corporate responsibility, we do not tolerate any blind spots. schülke takes full responsibility – from the initial development of our products to their eventual disposal. We operate our production processes and sales sustainably and holistically and apply the same principles to the ways in which our customers will use our products. Before launching our products on the market, we carry out a wide range of ecological and toxicological assessments. Throughout the entire developmental cycle, we are guided by the latest scientific insights.

Our specialist consultants advise us on all issues relating to the fields of application, material behavior, tolerability and environmental impact of our products. We continuously provide them with training and further education in these fields, so they can always find the right solutions for our customers' individual needs.

After all, new questions and issues come up all the time. schülke offers more than 220 products plus accessories. Multiple factors must be considered for each of them, including the choice of the right product, its correct dosage, and its cost-efficient application. It is extremely important that our consultants can provide comprehensive advice on the sustainable use of all products. Our technical advisors, too, are experts in their fields: hygiene and disinfection technology, electrical engineering, installation and control technology, the installation of dispensing systems, special cleaning and disinfection technologies, cost-efficient and sustainable maintenance, and the inspection and servicing of application technologies.

Sonja Tahmouresinia,
Biological-Technical Assistant:

"I really enjoy working in our department, Quality Assurance for Microbiology. Our main task is to verify that our products are free of germs. I am proud to work in a renowned pharmaceutical company whose products help people and combat disease before it develops."



A closer look at our range of sustainable products.

All of our product innovations are developed in-house, which enables us to offer tailor-made solutions that perfectly match our customers' individual requirements and impress with their sustainability as well as cost efficiency.

hyclick® system: safety has never been easier.
Optimum protection against contamination:
Thanks to the innovative click system, swapping bottles is now quick and easy, making life easier for our customers - and difficult for pathogens and germs. By developing the hyclick® system, schülke once again reconfirmed that it doesn't take rocket science to offer ingenious and sustainable solutions.



The hyclick® dispenser system allows for quick and easy swapping of bottles.

grotan® OX: a new level of safety in fuel production.

One of the most difficult and pressing challenges in oil and gas extraction is to effectively control hydrogen sulfide. While it may only make itself noticed by a foul smell of rotten eggs, it actually is an extremely poisonous gas. Higher concentrations can quickly be lethal, because the combination of hydrogen sulfide and air forms explosive vapors that are also highly corrosive. In the area of oil and gas extraction, this vapor is almost exclusively attributable to the anaerobic metabolism of sulfate-reducing bacteria (SRB).

schülke offers a highly effective "antidote": grotan® OX breaks up the poisonous hydrogen sulfide into non-toxic products. In the future, this application will become an important pillar in the Special Additives International (SAI) sector of schülke.

It is also an additional contribution to sustainability: We have developed a new product on the basis of grotan® OX for removing hydrogen sulfide from crude oil in fuel production applications. This new product is especially powerful when used during the refining process. The product development process saw our research and development team conducting close to 3,000 tests.

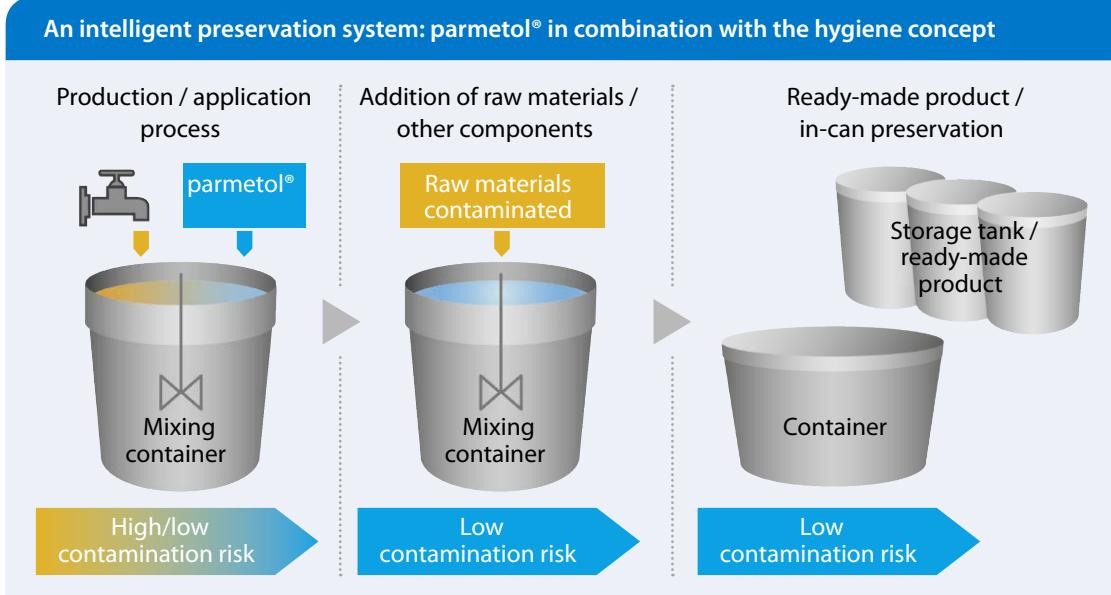
parmetol® SBX and parmetol® BPX in combination with the hygiene concept – our intelligent preservation system.

Compliance with the legal framework for the proper preservation of consumer products is becoming increasingly challenging. The preservatives used in these products not only have to comply with the Biocidal Products Regulation (BPR), their concentrations must also remain below the threshold values for triggering allergic reactions as prescribed by the applicable labeling regulations. Marketing-related considerations, such as environmental quality seals (e.g. Nordic Swan), also play an increasingly important role. This limits the selection of preservatives that can be used in consumer products - with market requirements increasing at the same time.

It therefore becomes even more important to use the available preservatives in a sustainable and responsible manner. An efficient use of preservatives is also imperative for minimizing the risk of a potential pathogen contamination and for ensuring the availability of alternative preservatives over the long term.

To ensure that preservatives are used sustainably, it is crucial to utilize any available synergies between the individual preservatives. This ensures a high level of effectiveness at the lowest possible concentrations. In the future, it will also be important to understand production hygiene as an integral part of the preservatives concept, to adapt processes accordingly and to optimize the preservatives' application concentration.

Our new products parmetol® SBX and parmetol® BPX are designed to precisely meet these future requirements. Additionally, the hygiene concept offers an innovative approach to using these



preservatives in the best possible way. There are many different potential sources of contamination within a production process. One example is stagnant water in pipes, which can have a germ count in excess of 10⁶ CFU/ml. Raw materials or other components can also cause problems. In the conventional process, the preservatives are added in the last step of the process.

The hygiene concept is based on the approach that the outstanding stability and the instant effectiveness of these new products allow for them to be added in their entire concentration already at the start of the production process. In this way, any pre-existing contamination can be treated at the same time, while the contamination risk remains low over the entire production process. parmetol® SBX and parmetol® BPX also guarantee the effective long-term preservation of the customer's finished product.

In addition to using raw materials in a sustainable and resource-conscious way by optimizing the preservatives' application concentration, schülke's new products ensure a safe production process and assist in preventing quarantine periods, product recalls or production losses.

octenisan® set: provides safety, creates trust.

Infection prevention is at the heart of modern hospital hygiene. Recent scientific studies show that whole-body decontamination washes prior to surgery can assist in reducing the infection risk.

A single square centimeter of skin may contain up to 10 million germs, which are a normal part of the skin and also have a protective function. A surgical procedure penetrates the skin's natural barrier and allows germs to enter the body and cause infections. schülke also offers essential protection in this area: The octenisan® set allows patients to take effective preventative action against infections prior to surgery while still at home.



The octenisan® set assists in effectively reducing the infection risk during surgical procedures.

Ideas grounded in reality: sterile, sporicidal impregnated wipes.

A major customer from Marburg has come up with a very innovative application for our wipes: they simply removed the spray cap of the product bottle and poured half of the liquid into the soft-pack. Voilà: impregnated wipes!

When we got wind of this ingenious idea, we knew: this has got to happen. Together with our subsidiary Bioxal, we carried out a range of tests and ultimately developed a new 300-ml bottle. It contains the first gamma-irradiated PAA disinfectant on the market and has a very low risk of contamination. This allows schülke to bottle the product in-house at Bioxal for a rapid product release. During a specialist forum in 2016, Air Liquide awarded this innovation, which was inspired by a customer's idea.

Preparing impregnated wipes



Gentle on the environment with peracetic acid.

Peracetic acid is an organic peroxide, i.e., a chemical derivative of hydrogen peroxide. As a disinfectant, it has a complete microbiological effective spectrum and an especially low environmental impact. Following a reaction that 'cold-burns' the germs, the peracetic acid disaggregates into oxygen and small amounts of regular acetic acid. It does not produce any environmentally harmful residue.

On account of its ecological safety and the wide microbiological effective spectrum, peracetic acid is a genuine alternative to aldehydes for the preparation of medical products. Its balanced bi-component formula changes the pH value of the peracetic acid to a neutral range. This allows us to guarantee a high degree of practical material compatibility in addition to a complete effective spectrum. The final disinfection even of highly sensitive medical products, such as flexible endoscopes, becomes effortless.

In addition to gigasept® PAA concentrate and thermosept® PAA, our instrument portfolio has gained a new product based on peracetic acid: our gigasept® pearls. This manual cleaning agent and disinfectant has an innovative, pearl-shaped structure. It aids the safe preparation of medical products and protects the environment.

Peracetic acid – environmentally friendly with a high material compatibility.



Sustainability shapes all our services. It's in our blood.

From research to disposal: our processes are built for sustainability. Creating the necessary scope to develop innovative solutions within an increasingly strict body of regulations is an art and a challenge. It takes the power of outstanding ideas. We initiate partnerships that transcend departmental boundaries and national borders to set an example for future projects.

[mein-hygieneplan.de: outstanding quality management with digital solutions.](#)

We want to support our customers as efficiently as possible. To this end, we develop detailed hygiene plans for their quality management – perfectly suited to their individual requirements. These hygiene plans are based on the German Infection Protection Act (IfSG) and the guidelines of the relevant professional association. They govern the documentation and coordination of hygiene measures. Hygiene management systems are an important part of every quality management system, and schülke's is designed to meet its legal requirements perfectly. We commit to a binding hygiene standard based on relevant laws, such as the RKI guidelines, hygiene directives, UVV, etc. State-of-the-art IT systems help us conceptualize our hygiene processes autonomously and create an individual hygiene plan. This solution is legally watertight and efficient, as it saves administrative effort.

Modern oil production: innovative and international.

Since late 2005, schülke has been working with the Institute for Chemical Additives at the Azerbaijan National Academy of Sciences. This partnership is dedicated to the joint development of better oil production processes.

The former Soviet Republic of Azerbaijan is located at the Caspian Sea. Its annual oil production is approximately equivalent to that of Great Britain. Together, we have been working on new techniques to optimize the extraction of mineral oil. We recently developed a chemical formula on a laboratory scale that can increase the yield from an oil well that is about to run dry. Our product grotan® OX is the most suitable preservative for this purpose.

The result of our work has been published in a joint article. As a next step, we will carry out a feasibility analysis on the technical realization of the newly developed process.

**Hendrik Böhm,
Shift Manager for Bulk Containers:**

"We face immense challenges every day. Our goal is to find answers that are suitable down to the details. It motivates us to make steady progress."



Sustainable employment



A passion for personnel management.

At schülke, we give it our all. Not just for our customers but also for our applicants and employees, whom we support with great dedication. Our holistic approach to personnel management holistically allows us to recruit qualified staff and ensure their continuous professional development. This strategy opens up a plethora of individual career opportunities to our employees at schülke and the Air Liquide group. As a company, we can rely on our excellently qualified and motivated staff.

Openness is the fundamental pillar of our company culture. Each new employee commits to our code of conduct, which enshrines diversity and equal opportunities and governs the global guidelines of our work. We conduct annual training courses on ethical questions and practical topics such as competition and antitrust law. This ensures that all employees implement our principles in their everyday work.

The code of conduct also contains our management principles, which every new manager receives upon entering our company. New managers undergo regular training on a variety of personnel development topics to ensure that these principles are deeply enshrined in their daily managerial work. This allows us to implement our philosophy of leadership sustainably and in depth.

**Ilja König,
Director Human Resources:**

"We want to create a motivating work environment by sustaining fair partnerships with our employees and managers. We allow our team members freedom to act independently, give them responsibility and actively support their professional development."



We kick-start careers. From the very beginning.

We have developed a clear recruitment strategy to get the best experts, managers and entry-level professionals on board. Based on objective criteria, we aim to establish a diversified staff structure. We use a wide-ranging campus management strategy to find talented young people with an interest in the business areas of our company. By working with selected universities and offering a range of domestic and international internship programs, we build our team with a view to the future.

There are different measures in place to help new employees find their bearings in our company. During their induction phase, we assign them a team member who familiarizes them with our processes and supports their personal integration. Young newcomers have access to a mentoring

system: a long-standing, experienced employee helps them in their daily work and supports them in building a professional network. The mentor benefits from their mutual exchange by being exposed to new ideas and impulses.

To advance the personal development of each employee, schülke offers a training catalogue and various courses every year. Employees further have the option to sign up for international training measures within the scope of the group-wise Air Liquide University. Regular career discussions help them plan their professional development for the medium to long term. Especially skilled employees can choose the career path of a technical community leader.

Supporting the next generation. Shaping the future for everyone.

Training young people is a high priority to us. We invest a great deal of work and time in supporting the next generation. Together with Nordakademie and many other professional training facilities, we offer vocational training and dual degree courses for many occupations. In 2016, we focused increasingly on commercial and technical fields to prevent a shortage of skilled workers.

To encourage the innovative spirit of our employees, we also support part-time professional development measures, such as specialist certifications, bachelor's degrees and master's degrees.

Only the best for our staff. They deserve it.

Highly flexible working hours cater to the individual needs of our employees. They also create family-friendly working conditions. We also offer our staff a profitable pension scheme. Other beneficial

initiatives include sabbaticals, childcare grants, career re-entry management and the subsidized ProfiCard. Our in-house canteen offers healthy and nutritious meals at low staff prices.

In charge of an outstanding team. In pursuit of outstanding performance.

HR switched to a business partner model in 2016. We carried out this restructuring to position the unit as a strategic partner within the company and align its work more closely with the requirements of our business. HR will assume the function of a professional, individual consultant to the management. We want the HR business partners to sup-

port not only our managers but also our employees with this advisory and mediating role. They will actively influence company affairs, develop strategies for the company to improve its business performance by leveraging its employees, and try to increase the value creation in the company visibly.

The digitalization makes us faster. And smarter.

Everything is digitalizing, even professional development. We started implementing digital instruments on a global scale in 2016. Our first step was the introduction of a learning management system. It allows us to access group-wide educational resources and manage training and qualification courses much more efficiently. We will continue

our digitalization efforts in 2017 by implementing a modern application management system. Topics such as social media and digitally supported career development will constitute further focal points.

Each employee counts. Together, we succeed.

Our HR unit uses hard facts and figures to optimize its performance and our responsible conduct as an employee. This includes an annual survey of the number of employees and trainees in our company alongside standard indicators on occupational health and safety, vocational training and professional development.

Workforce 2016.	
Total global headcount	1,152
International	459
Germany	693
of which in Norderstedt	671
of which in Frankfurt am Main	22

Trainees

In 2016, we had 24 trainees in our company, including students of the Nordakademie in Elms-horn.

Trainees	2016	2015	2014	2013
Number	24	23	24	24

Seniority

On account of many new hires in 2016, our employees have been with our company for eight years on average.

Seniority (excluding trainees)	2016	2015	2014	2013
Average duration in years	8	11	11	10

Professional development

In 2016, we invested EUR 860,109 in qualifications for our employees. 761 employees took advantage of professional development opportunities.

Professional development	2016	2015	2014	2013
Professional development expenses (EUR)	860,109	867,330	639,321	552,000
Days spent on professional development per year	2,120	1,616	1,290	1,033

Occupational accidents

We did not achieve our goal of zero occupational accidents in 2016. All three incidents were minor accidents.

Occupational accidents	2016	2015	2014	2013
Number	3	0	0	0

Working hard to make your work healthier.

Our company healthcare management offers a wide range of services. They range from promoting healthy eating to ergonomic measures and various exercise options. We aim to devote equal attention to the three most important topics of health:

nutrition, exercise and mental well-being. Our employees are encouraged to pursue a healthy lifestyle, and available services are actively advertised in our internal communications.

The way to the heart is through the stomach. So is the way to good health.

We divide our healthcare management into four sections. The nutritional section works closely with the canteen committee and our Aramark canteen to promote healthy eating and drinking. Each month, it distributes a recipe idea to encourage our employees to cook nutritious food at home. We also listen to suggestions from our staff.

We are proud to have expanded the canteen menu. It now includes a soup of the day, still water and more poultry. We particularly focus on Well-Fit products and low-calorie meals.

Additional microwaves are now available to ensure that our shift colleagues can eat what they want, whenever it suits them best. New drinks and snack machines have been installed, too. Since 2017, we have been planning a cooking book exchange for our Norderstedt production site to breathe new life into the topic of healthy eating.



Healthy eating is the main priority of Hermann Albers, the head chef of our canteen.

Posture matters. Sit right – for the sake of your health.

Our ergonomic section advises employees on setting up their workplace in an ergonomically correct way. They work with both the commercial and technical staff. In 2016, all employees received er-

onomic mousepads. In 2017, they get to take "active breaks", during which qualified trainers guide short and simple exercises.

Stage free for our health management.

Our communication section is responsible for marketing our healthcare management. Among their projects is a website that presents the latest news

on the topic of occupational health. Our latest major project was the production of an advertising clip for the schülke healthcare management.

We stay active. Together.

The sports section of our healthcare management partners with gyms and organizes events throughout the year. In 2017, these events included:

- Metro Marathon Düsseldorf,
- Norderstedter Firmenlauf (company run),
- Drachenbootrennen Norderstedt (dragon boat race),
- Norderstedter Abendlauf (evening run),
- Zipfelmützenlauf (hat run).

Our company teams play Skat, football, beach volleyball and other sports. A gym group trains at Kraftwerk. We plan to integrate our healthcare management even better into our company over the course of the next years.



The team for the company run, the cycling group and the "active break" with qualified trainers are just the tip of the iceberg of our extensive schülke healthcare management.



Top shopping. Top motivation.

Current and former employees can buy schülke products at reduced prices at our in-house shop, which has been open since 2008. It is stocked with a wide range of products, ranging from various disinfectants to washing lotions, creams, wipes and our kitchen portfolio. Our trainee team organizes the in-house shop. The trainees work as sales staff and take care of a variety of shop tasks, including communication with the supervisory board, ordering supplies and financial controlling. Their commitment is honored with a small bonus every

year, which is used to finance the Christmas party and a joint summer trip. Our trainees traditionally donate part of their bonuses to charity, and we are very proud of this custom. In 2016, the donation went to Integrativer Sportverein Norderstedt, a sport club that supports people with disabilities.

**Finn Stüber,
Industrial Clerk in Training:**

"schülke successfully maintains its status as a traditional company while advancing and adapting its processes to the modern, progressive world. This is what distinguishes the company and prepares it for the future."





Environmental responsibility

An environmental policy cannot consist of paragraphs only. It must manifest itself in every aspect of our daily work.

The sparing use of resources in compliance with environmental law is the main pillar of our environmental management system. We avoid polluting the environment and strive to optimize our environmental performance as part of our continuous improvement process.

In our energy management, for instance, we use highly efficient technologies and modern lighting systems; we install electric motors in machines and

thermal insulation in buildings. The protection of natural resources and the reduction of emissions and waste constitute a major part of our environmental targets.

We carry out safety analyses and emergency drills on a regular basis to minimize the risk of environmentally harmful incidents. Our alarm and hazard prevention system, which serves the same purpose, has been approved by the regulatory authorities.

**Ralf Kummerfeldt,
Head of HSE Management:**

"Sustainability is a never-ending topic that raises new challenges every single day. I find it important to communicate its principles credibly to the outside world and implement them honestly in the company."



Example instructions for the management of major environmental aspects:

- energy efficiency, process instructions (PI) 00092: management of environmentally relevant processes.
- limitation of emissions from technical facilities in the air or ground, PI 00075: project management of technical projects.
- utilization of resources when using our products, PI 00052: consideration of ecological, toxicological and occupational safety aspects with respect to raw materials in product development.

Environmental organization.

schülke established fixed organizational structures in the sub-segment of environmental protection as early as 20 years ago. The following organigram

outlines the organizational structure and the responsible parties in the field of environmental protection.



*(Operator as per Article 52a BlmSchG.)

We take responsibility. We take it seriously.

We declare: our products and services must not harm the environment. We have established a process to determine hazards and control suitable measures as part of our integrated management system. Based on our main processes, we have developed key indicators to assess the different aspects of environmental protection. We have specified targets for each of them and integrated them into our environmental program.

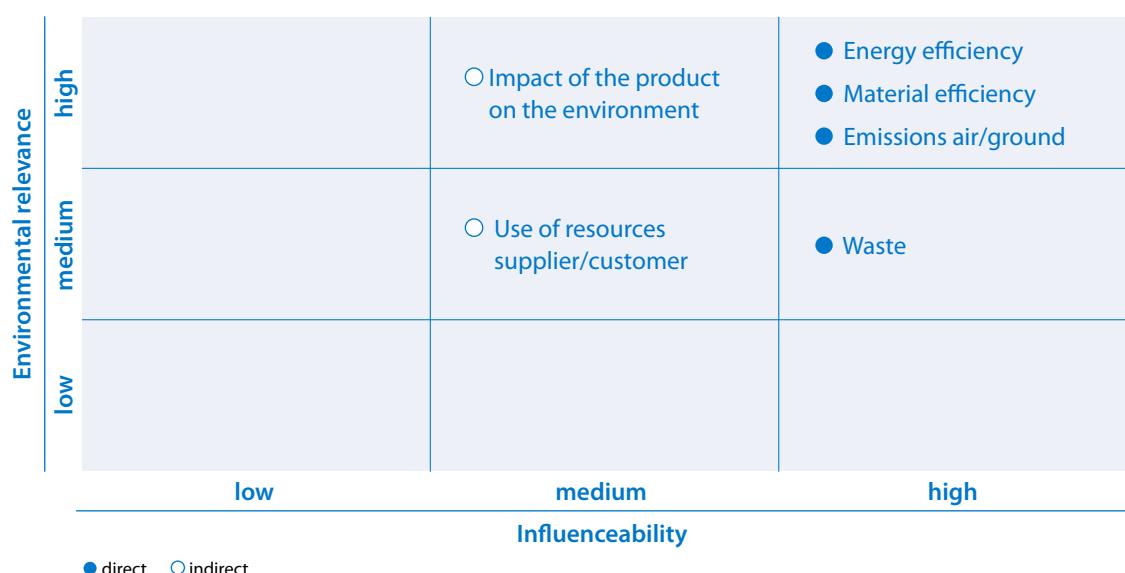
Main aspects are indicators as well as direct and indirect effects.

How does schülke prioritize different aspects of environmental protection? Firstly, we assess them by their relevance and effect and our magnitude of influence. We have created a matrix helping us to

classify the topics accurately. It takes the following criteria into account:

- potential to cause environmental harm,
- vulnerability of the environment,
- extent and frequency of the environmental aspect,
- relevance to stakeholders and employees
- existence and requirements of environmental regulations.

The following table shows the main direct and indirect environmental aspects in terms of their environmental relevance and our ability to influence them with our management system.



Differentiating between direct and indirect environmental aspects is particularly important: it helps us delineate our areas of immediate influence and manage measures more precisely.

- **direct** environmental aspects can be influenced by activities of our management system.
- **indirect** environmental aspects are beyond the scope of our business activities. We have limited influence on them.

Great things require focus. Our energy management is a good example.

Within the scope of its sustainability strategy, schülke is especially committed to energy management. We appointed an Energy Management Officer as early as 2015. During the past reporting period, the company management decided to introduce an energy management system.

In 2016, the energy consumption at the Frankfurt and Henstedt-Ulzburg sites was assessed for the first time. We also keep a close eye on our fleet: in 2016, we determined the combined fuel consumption of all our vehicles. The data we have gained is now part of the calculation of our overall energy footprint.

Our energy-saving measures

schülke has been EMAS-certified since 1996. Within the scope of this certification, we have been taking the performance-relevant chapters of DIN ISO 50001 into account.

- Adjustment of the compressed-air supply in the factory. More units transitioned from the old compressed-air supply system to a new, energy-efficient technology in 2016. This has enabled us to save extra energy in the production of compressed air. Also in 2016, we invested in detecting and fixing leaks. At present, 90 out of 130 detected leaks have been eliminated, which saved us approximately 93,000 kWh in 2016.
- Following the full-capacity commissioning of our warehouse for raw materials in August 2016, the entire lighting system in the hall runs on LEDs as planned. This saves approximately 4,600 kWh/a.
- During a conversion of the office facilities, we have replaced conventional ceiling lamps with LED equivalents. The result: approx. 2,300 kWh/a saved.

- We have advanced the conversion of our cooling systems to free cooling. This has enabled us to save around 16,000 kWh (= approx. 10% of the entire cooling power) compared to conventional cooling, depending on the number of cooling days.
- The steam generation plants have been equipped with a heat recycling system.
- The hydraulic system of the heaters has been converted and expanded (replacement of pumps, etc.)
- As part of our cold efficiency measures, we have also adjusted the hydraulics of our cooling systems.
- We have switched some ventilation systems to night operation, e.g. KBE50, as no night work takes place here at present.

The measure of our success: environmental indicators.

Our environmental management is based on a simple principle. "What gets measures gets managed." We believe that hard figures can represent

the actual success of our environmental management.

Electricity.

The electricity consumption at our Norderstedt site grew by 4.6% in 2016 due to a 4.4% increase in our production volume. Although the annual tonnage increased by approximately 1,640 tons, the specific energy consumption per ton of product remained unchanged.

This constitutes a first glimpse into the effects of our energy-saving measures. Consider our production of compressed air, for instance: we have switched to the new compressors and eliminated the first leaks in the pipe system.

Energy consumption at the Norderstedt site	2016	2015	2014	2013
Overall electricity consumption (kWh/a)	8,570,417	8,194,917	8,056,750	7,792,917
Specific electricity consumption per ton of product (kWh/t)	222	222	206	227
Deviation (%) spec. electricity consumption per ton of product (kWh/t)	+/-0.0	+7.8	-9.3	+8.1

We source our energy from Stadtwerke Kiel. This public utility company adheres to a sustainable, innovative energy concept to counteract climate change. Stadtwerke Kiel increasingly uses environmentally and climate-friendly sources of energy.

The following list describes the primary energy sources that supplied the electricity we sourced from Stadtwerke Kiel in 2015. We have also provided the national average for comparison.
(Source: Stadtwerke Kiel)

Comparison: Energy mix of Stadtwerke Kiel/Germany*		
	Stadtwerke Kiel	Germany
Nuclear energy (%)	0.3	15.4
Coal (%)	46.6	43.8
Natural gas (%)	5.9	6.5
Other fossil fuels (%)	0.1	2.5
Renewable energy sources, produced in compliance with the EEG (%)	47.3	28.7
Other renewable energy sources (%)	3.4	3.1
CO ₂ emissions (g/kWh)	463	476
Radioactive waste (g/kWh)	0.0000	0.0004

*Fuel mix disclosure as per Article 42 Paragraph 1–8 EnWG 2011 in conjunction with Articles 54 and 55 EEG 2012; all information is based on data for 2015. Stadtwerke Kiel is expected to publish the numbers for 2016 in late December, 2017.

Environmental responsibility

Heating.

Despite a shorter heating period of 40 days fewer than the previous year, the consumption of heating

energy has risen by 13.5 % in 2016. This was due to lower average outdoor temperatures.

Heating (gas and oil) in Norderstedt	2016	2015	2014	2013
Heating energy (kWh/a)	7,694,431	6,778,705	6,661,817	8,233,297
Deviation (%)	+13.5	+1.8	-19.8	-
Heating energy (kWh/t of product)	199	183	170	239
Deviation (%)	+8.78	+7.65	28.9	-
Average outdoor temperature (°C)	+8.4	+10.1	+10.8	+9.2
Heating days	250	290	262	271

Steam.

In 2016, we used an 9.3 million kWh of steam – approximately 12% than in the previous year. The specific steam consumption per ton of product has ris-

en by 10% since the previous year. This effect is due to the increased production volume, which resulted in a more frequent need for steam cleaning services.

Steam consumption at the Norderstedt site	2016	2015	2014	2013
Steam (kWh/t of product)	253	230	231	253
Difference (%)	+10.0	+4.5	-15	-

Water.

In 2016, the Norderstedt site consumed 1.71 m³/t of water, which amounts to a 3.6% increase since the previous year. This is due to the increased production volume and the substitution of chemicals with water for the cleaning of process plants.

The use of water for cooling processes combined with larger production batches has further boosted the figure. We anticipate a slight decrease in the specific water consumption in 2017.

Water consumption at the Norderstedt site	2016	2015	2014	2013
Water consumption (m ³ /t)	1.71	1.65	1.76	1.64
Deviation (%)	+3.6	-6.6	+5.2	-

Waste water emission.

The average effluent value remained unchanged at 0.09 mg/l in 2016.

Waste water emission at the Norderstedt site	2016	2015	2014	2013
AOX value for waste water (mg/l)	0.09	0.09	0.07	0.12

Exhaust air emission.

In 2016, the average load of pollutants in the process exhaust air was 2.16 mg C/m³ (measured in total carbon per m³ of process exhaust air) after

treatment by the exhaust air incineration plant. In the previous year, it amounted to 1.36 mg C/m³.

Exhaust air emission at the Norderstedt site	2016	2015	2014	2013
Volatile organic compounds (mg C/m ³)	2.16	1.36	1.67	1.08

The reason for this slightly increased load of pollutants in the treated exhaust air is the production process in operating unit 23. The in-house manufacture of this product involves distilling processes that emit substances containing carbon into the

exhaust air system. This does not have any consequences for schülke, as the load of pollutants does not exceed the threshold stipulated by the TA Luft regulation (20 mg C/m³).

Waste.

Amount of waste at the Norderstedt site	2016	2015	2014	2013
Total amount of waste (t)	2,484 (1,726)*	1,612	1,440	1,258
Amount of waste per ton of product (kg/t)	64.3 (44.6)*	43.6	36.7	36.6

* Excluding additional production unit since 2016.

There has been an enormous increase in the amount of waste produced: 2,484 tons, 54.1% more than in the previous year. This is primarily due to the new in-house manufacturing process. We manufactured 238 tons of product in our own production site in 2016, which generated 757.3 tons

of waste.

The amount of waste in the category "finished and bulk material" also rose markedly: we have a considerable plus of 61.9%, which corresponds to 251.3 tons.

68.1% of all waste of which we disposed in 2016 was hazardous waste for removal or recycling as per Article 41 KrWG (56.4% in 2015).

Rehabilitation wells.

The volume of groundwater extracted using the rehabilitation wells has decreased since the previous

year. In 2016, the wells drew 2,378 m³ less ground/rehabilitation water.

Amount of groundwater extracted at the Norderstedt site	2016	2015	2014	2013
Annual extraction volume (m ³)	6,724	9,102	9,308	9,375

Additional steps in 2017.

- We have entered into a contract with a supplier of energy measurement systems. The first meters were installed in May/June 2017. As a first step, we are connecting them to the most power-hungry units, such as our ventilation system and the compressed-air generators. Afterwards, the water and production plants will follow.
- We have commissioned the insulation of uninsulated system and pipe parts to advance the refurbishment of our steam system. Work started in May/June 2017.
- The budget for the refurbishment of the roof on operating unit 11 has been approved for 2017. In addition to the actual renovation of the roof sealing, further heat insulation was installed.
- We have created a concept for increasing the heat insulation on the roof and in the facade of the old office building and the facade of hall 0. We have calculated the savings potential resulting from these measures.
- We have continued replacing standard lighting systems with LED systems in all areas.



**Madeleine Wagner,
Production Assistant:**

"We have a holistic approach in our unit: we treat our team members with the utmost respect and never compromise when it comes to the quality of our work."

Sustainability program 2017–2019.

Our sustainability program is a roadmap for the sustainable development of our company. For many years, we have been planning it in three-year intervals. The program specifies the overarching goals of our strategy in terms of individual initia-

tives and measures. The schülke management oversees their implementation in the individual business units. Every year, it defines qualitative and quantitative criteria for measuring our success in achieving these goals.

Unit	Qualitative	Quantitative	Measure	Goal	Deadline
Compressed air		x	Replacement of the existing compressed-air generators with more efficient compressors.	Planned savings 15 %	09/2018
Compressed air		x	Analysis of actual demand for the compressed-air line network: based on a demand assessment, the compressed-air distributor will be adapted to the changed demand from the production units.	Planned savings 10 %	12/2018
Electricity		x	<ul style="list-style-type: none"> • Switching the lighting system in the production halls to LED. • Use of presence and motion sensors for light control. 	Planned savings 20 %	12/2019
Electricity		x	<ul style="list-style-type: none"> • Conversion of the heat transportation technology to high-efficiency pumps. • Use of IE3 and IE4 pump engines for fluid transport. 	Planned savings 25 %	12/2018
Water		x	<ul style="list-style-type: none"> • Optimization of the backwashing (cleaning) process in the purified-water production to consume less water. • Saving water by validating the cleaning processes in the production units. 	Planned savings 15 %	06/2018
Heat		x	Reducing the amount of heat required to ventilate the pharmaceutical production unit.	Planned savings 10 %	04/2018
Heat		x	Improvement of the building insulation (facades, windows, doors).	Planned savings 10 %	12/2019
Waste		x	Reducing the amount of hazardous waste by optimizing processes and plants.	Planned reduction 20 %	12/2018

Declaration of validity.

Statement of assurance and declaration of validity

The signatory environmental assessor was charged with

- evaluate the consolidated Sustainability Report 2017 on the basis of the available data, systems, and processes,
- critically evaluate the scope, balance, and interpretation of its content,
- assess the management system and the consolidated Sustainability Report 2017 of for conformity with the requirements of the directive (EC) No 1221/2009 and EN ISO 14001:2004, and
- certify the Sustainability Report.

The evaluation was carried out in accordance with the guideline "EMAS – von der Umwelterklärung zum Nachhaltigkeitsbericht (BMU/UBA, 2007)".

The environmental assessor is of the conviction that the data and information provided are presented in a comprehensive, balanced, and appropriate manner in view of the ecological, social and economic aspects of sustainability and are not contrary to other information and reports about the company.

The signatory EMAS environmental assessor, Dr. Axel Romanus (DE-V-0175), accredited for the areas 20, 21, confirms that he has assessed Schülke & Mayr GmbH, Robert-Koch-Straße 2 in 22851 Norderstedt (registration number OE-150-00003). He certifies that the company fulfils all requirements of the directive (EC) No 1221/2009 of the European Parliament and Council of 25 November 2009 for the voluntary participation of organizations in a combined system for environmental management and environmental company auditing (EMAS), as shown in this Sustainability Report.

By signing this declaration, he confirms that:

- the assessment and validation were carried out in complete compliance with the requirements of the directive (EC) No 1221/2009,
- the results of the assessment and validation confirm that there is no evidence of non-conformity with applicable environmental regulations,
- the data and information presented in the sustainability report by Schülke & Mayr GmbH provide a dependable, credible and true presentation of all their activities.

This statement is not equivalent to an EMAS registration. The EMAS registration can only be granted by an authorized authority in accordance with the directive (EC) No 1221/2009. This declaration cannot be used as an independent basis for briefing the public. This declaration will become invalid with the conversion of the management system to the specifications described in Annexes I–III of the directive EU 2017/1505. At the very latest, it will become invalid on 14 September 2018.

Kiel und Norderstedt, Juni 2017

Dr. Axel Romanus

Umweltgutachter DE-V-0175



Memberships and initiatives.

The schülke sustainability program constitutes a commitment. We commit to treating our fellow humans and the environment in a responsible and sustainable manner. In our capacity as a quality leader of our industry, it is our duty to have a long-term strategy that will ensure a future worth living. Our commitment must reach far beyond the boundaries of our factories and the borders of our country.

This includes advocating our sustainability ideals in domestic and international associations, initiatives and partnerships. One such organization with a clear mission is Bundesdeutscher Arbeitskreis für Umweltbewusstes Management e.V. (B.A.U.M.), i.e., the German task force for environmentally conscious management. It strives to combine economical, environmental and social issues – the pillars of sustainability – in innovative ways. The network organization Zukunftsfähiges SchleswigHolstein (Sustainable SchleswigHolstein) www.zukunft-sh.de is dedicated to offering education about sustainable development in the federal state of Schleswig-Holstein.

We also contribute our ideas and suggestions to industry-specific organizations, such as the regional association for North Germany of the Association of the Chemical Industry e. V. (VCI Nord). It provides information to its member companies in order to shape common views and, for instance, initiate new political law-making processes. We are further involved in cross-industry organizations such as the Energy and Environment Committee of the Chamber of Commerce and Industry (IHK) in Lübeck and

provide financial support to charitable organizations and initiatives. We will refrain from providing a complete list. We are as critical in choosing projects and initiatives to fund as we are in our daily core business.



We have been given privileges. So we can share them with others.

The vast majority of our sustainability activities stand in relation to our business model and its core processes. But we do not regard the environmental and social impact of our activities solely in terms of economical criteria and risk management issues. After all, we strive to be good corporate citizens and contribute constructively to the society we live in.

We are well aware of the privileges we enjoy. They include the privilege of making quality products to protect people from infection and the privilege of doing fulfilling work in a genuine team. We are aware of our special role and our duty to give back to society.

In the name of hygiene: the Rudolf Schülke Foundation.

Outstanding, innovative work requires the international exchange of information. The Rudolf Schülke Foundation plays an important role in this context. It was inaugurated on 18 October 1972 by Schülke & Mayr GmbH in Norderstedt near Hamburg. The foundation is named after Rudolf Schülke, co-founder of Schülke & Mayr GmbH.

Its mission is to promote hygiene and microbiology with a focus on the prevention and control of infectious diseases. In particular, this includes the development and application of prevention strategies, antimicrobial and antiviral substances, and antiseptic, disinfectant, cleaning and conservation processes. The foundation supports interdisciplinary research and works in close partnership with universities.

Dialogue yields knowledge.

Every other year, the Rudolf Schülke Foundation organizes meetings with researchers to learn about the latest issues in the fields of hygiene and microbiology. The results of these meetings are then published in specialist journals.

Similarly, the Netzwerk Zukunft Hygiene (NZH) or 'future hygiene network', established by the Rudolf Schülke Foundation in 2003, is dedicated to the transfer of knowledge. It is a network for medical doctors to discuss topics from the fields of hygiene, environmental medicine and infection prevention.

Innovation for better health: the Hygiene Prize.

Every other year, the "Hygiene Prize of the Rudolf Schülke Foundation" distinguishes researchers who have made outstanding discoveries in hygiene, microbiology, public health and preventive medicine. The EUR 15,000 prize was last awarded in 2017.

In addition, the foundation awards the "Hygieia medal" every other year. It goes to people who have determined their life's work to hygiene and microbiology.

The Hygieia medal – health is an Olympic discipline

The medal is named after the Greek goddess Hygieia. She is the daughter of Asklepios, the god of medicine, and Epione, the goddess of the soothing of pain. Her tasks included the protection and strengthening of health and prevention of disease. The Ancient Greek word γεινή – hygiene – was derived from her name and referred to the art of health and a healthful lifestyle. The goddess is invoked right at the start of the Hippocratic Oath: "I swear by Apollo the Healer, by Asclepius, by Hygieia, by Panacea, and by all the gods and goddesses ..."



Small gifts with a great impact: payroll giving.

schülke operates a works agreement on payroll giving for charity. Every month, all employees have their salaries rounded up by a maximum of 99 cents. The resulting difference is donated to charity. Of course, every employee is free and welcome to donate larger sums.

This works agreement came into force in 2013. Between January and December 2016, 229 colleagues made donations. Their efforts have yielded a sum of EUR 2,583.64. Two organizations, both of which we have examined very closely, received EUR 1,291.82 each in donations:

Norderstedter Tafel e.V. (www.norderstedter-tafel.de), which collects food for the poor, and Elterninitiative für brandverletzte Kinder Paulinchen e.V. (www.paulinchen.de), a parents' initiative for children with burn injuries.



Our help is well received.

In October 2015, schülke decided to help refugees. Three of our colleagues formed a team and contacted various charities in Norderstedt, Hamburg and the region. In 2016, they connected with additional organizations and donated hand and surface disinfectants to the helpers. schülke closely coordinates its efforts with its beneficiary organizations to ensure that all donations are welcome and needed.

During the past reporting period, schülke was able to donate useful products exactly where they were needed. We chose our beneficiaries very carefully to ensure that our donations had the greatest possible impact. Our selected recipients include "Das Babymobil", "Hanseatic Help", "Das Teemobil" and regional refugee organizations. They received donations in kind from the schülke portfolio (e.g., desderman®, mucaderma® und mucasept®).

About this report.

The schülke sustainability report for 2017 contains data and facts from the reporting period of 2016. The EMAS environmental declaration was carried out at the company headquarters in Norderstedt (Germany). It applies to the audit period from 1 January to 31 December 2016. The report further covers important topics in the field of sustainability at schülke. The editorial deadline of the publication was in the fourth quarter of 2017.

The sustainability report provides insights into existing and planned measures to improve the sustainability of our business. It describes which goals we have achieved and which challenges we are facing within the scope of our sustainability program for 2017–2019. We will continue the past publication cycle of our sustainability report: two interim reports will alternate with a full-scale report including an EMAS environmental declaration.

This report is published in German and English and available as a print version and as a PDF for download.

Statements about the future

This sustainability report contains statements about the future, some of which are based on assumptions and expectations. These statements are subject to risks and do not constitute definite predictions of future developments and results.

Some of these risks are determined by factors that are beyond the influence of Schülke & Mayr GmbH. They include future market conditions, economic data, the realization of anticipated synergistic effects and legal and political decisions. Schülke & Mayr GmbH is not obliged to update any statements of the future that have been made in this report.

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