# THE FREUDENBERG S P I D I T I



### EXCELLENT TECHNOLOGIES. ONE SPIRIT.

### DIVERSE INDUSTRIES. ONE SPIRIT.

### COUNTLESS INNOVATIONS. ONE SPIRIT.

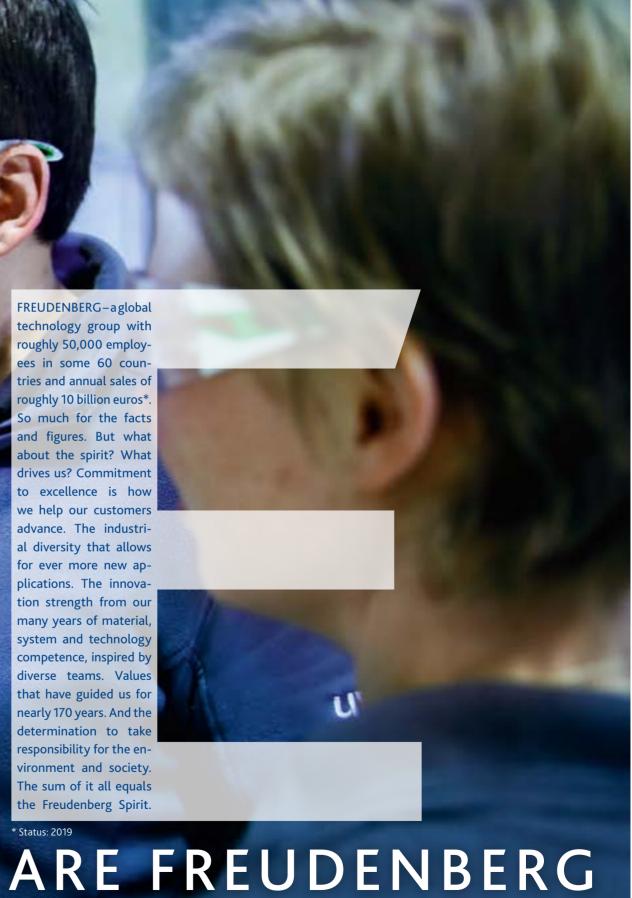
VALUES IN PRACTICE. ONE SPIRIT.

JOINT RESPONSIBILITY. ONE SPIRIT.

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# TECHNOLOGIES WITH A FUTURE. PEOPLE WITH SPIRIT.





EXCELLENT TECHNOLOGIES. ONE SPIRIT.

That makes us a unique leading technology group and development partner



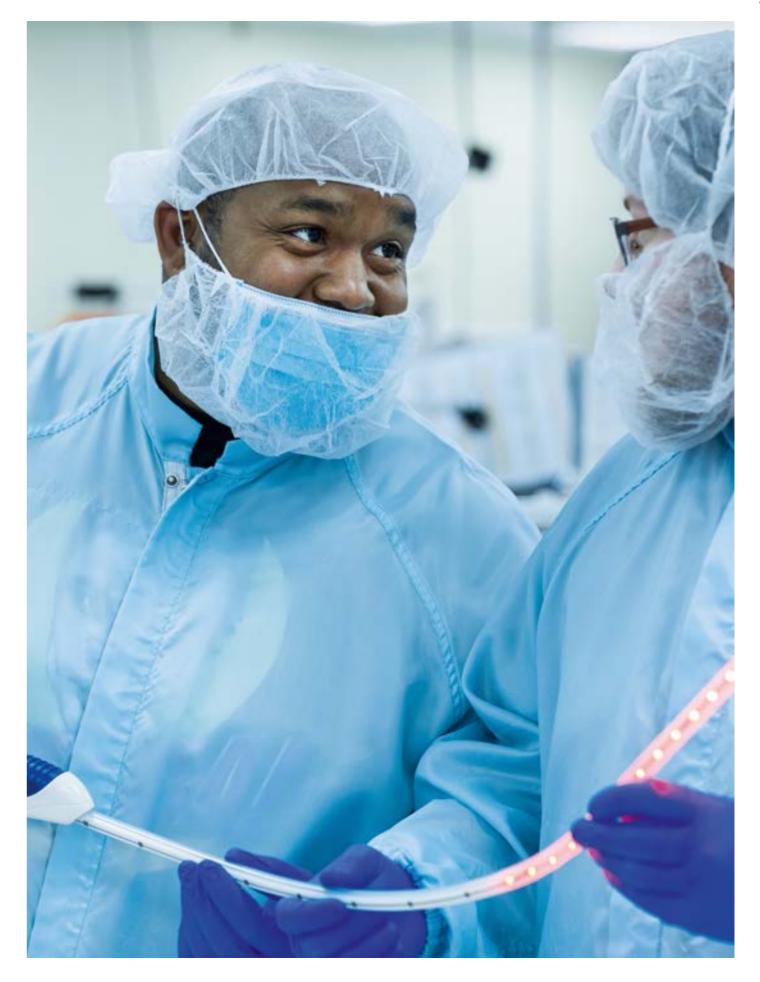
### EXCELLENCE FOR SUCCESSFUL CUSTOMERS

As a global technology group and development partner to our customers, we set standards in technology, innovation and quality. Working closely with colleagues from various industries, with customers, partners, and the scientific community, we develop leading-edge technology products, solutions and services. With this promise, we make a valuable contribution to our customers' long-term success.

Every day, all our employees contribute – through entrepreneurial thinking and action, through independent initiative and readiness to take on responsibility. Our promise of excellence makes complex manufacturing processes and high-technology products possible. Their use is not always visible, but often essential.

Without Freudenberg, indoor air would not be as clean, cars would not drive, and wounds would not heal as quickly. And these are just three examples from the thousands of applications.





# DIVERSE INDUSTRIES. ONE SPIRIT.

PARTY NO.

The markets we serve with our products, solutions and services



### FIVE MARKETS. 40 MARKET SEGMENTS. THOUSANDS OF APPLICATIONS.

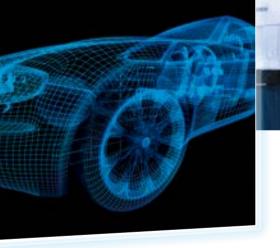
When technology, complex processes and sophisticated products work reliably, Freudenberg is often behind it



» Our long-term material, system and technology competence is a key that always opens new doors for us – to new markets, innovative products and solutions. «

Dr. Ravindrakumar Bactavatchalou Head of Tribology, Freudenberg Technology Innovation





#### MOBILITY AND TRANSPORT

Whether by road, water, rail or air: Freudenberg technology helps motors and other parts work reliably. We use sealing, vibration control or filtration technology, technical textiles, durable bearings, specialty chemicals or surface treatment and galvanization technology to make mobility and transport around the world safer, more efficient and more comfortable.

#### **ENERGY AND** RESOURCES

Fossil fuel exploration and transport is extremely challenging. The responsible use of renewable energy requires innovative applications. Freudenberg contributes to improved functional reliability, operating lives and the best possible environmental protection throughout the energy industry. Our product range includes gas-lubricated mechanical seals in pipelines, complete filtration systems for power plants and miniature silicon plugs for the electronics industry.

#### INDUSTRY AND PRODUCTION

The competitiveness of industrial companies depends on the smoothest and most efficient production possible. Reliable and tailored components from Freudenberg help ensure long-term productivity and quality - whether for seals, filters, release agents, special lubricants or technical textiles. Our products are present in almost all industries, production processes and systems.

### **HEALTHCARE AND** FOOD PROCESSING

When it comes to health and nutrition, extremely high hygiene standards must be met. Our high material competency and process reliability make Freudenberg a popular partner for customers in the medical technology and pharmaceutical industries. Our medical innovations simplify surgical intervention and improve wound treatment. In food processing, we help process confectioneries along with other food types. Efficient drinking-water treatment often uses Freudenberg technology.



#### **CLEANING AND** TEXTILES

Even everyday products are based on sophisticated technology. Freudenberg's innovation strength can be found in microfiber cloths or electric window vacuums. Our technical textiles are vital to comfortable sofas, properly fitting clothes and mite-proof bedding. They are used to manufacture shoes and leather goods or protective clothing. The filter applications also help keep interior air clean.

# COUNTLESS INNOVATIONS. ONE SPIRIT.

How we develop forward-looking solutions in diverse teams



» Innovations create competitive advantage. As a technology group and development partner, we see things from our customers' perspective and help them succeed. «

> Dr. Alexander Rozmán Senior Vice President Industrial Services, Freudenberg Sealing Technologies

### SUCCESSFUL THROUGH CHANGE

### INNOVATION AS A DRIVING FORCE

The story of Freudenberg's success is one of innovation. The permanent drive to work together and create something new, to master future challenges, is vital to stable and profitable growth. The world is constantly changing. With our unique material, system and technology competence, we are always ready to face new developments and take an active role in shaping them. Starting with chrome tanning, the Simmerring radial shaft seal and sophisticated components in medical technology or for mobility: for nearly 170 years, we have found forwardlooking solutions to help our customers succeed and make development more sustainable for the environment and society.



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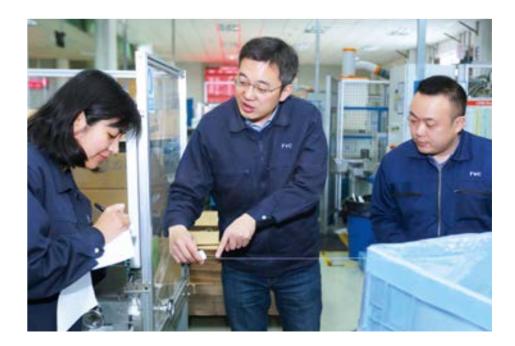




### DIVERSITY AS A CREATIVE RESOURCE

### IN-DEPTH EXPERTISE, BROAD DIVERSIFICATION

Innovation strength at Freudenberg An open innovation culture and creative is created in diverse teams through flexibility is also possible through our the interplay of different knowledge special technologies for a wide variety and skills. "Innovating Together" is of industries and markets. Freudenberg thus our motto. People of various ages is broadly diversified – and we continue and genders and different cultural to develop with every new task. Our backgrounds inspire one another. And promise is a deep understanding when individual experience, capabilities of customer needs and top-quality and skill are part of collaboration, new products and processes as well as paths will open. For solutions that give excellent services. We see ourselves answers to tomorrow's questions. as technology leaders and equals; as a development partner, assisting in the entire product development process covering everything from finding an idea to prototyping and production.





### TODAY'S INNOVATIONS, **TOMORROW'S SUCCESS STORIES**

Many challenges lead to innovations – including new regulations and legislation, such as those for sustainability, increasing quality, and the integration of additional functions and realization of completely new technologies. At Freudenberg, innovations in all possible forms are conceived and implemented.

And they often provide answers to the most important megatrends of our time, such as those in mobility. Combustion engines, hybrid technologies, fuel cells and pure electric vehicles or autonomous vehicles – the opportunities to move from one location to the next are getting more varied.



As a leading supplier to the automotive industry with more than 80 years of experience in the market, we have a broad basis. We are working at

# MEGATREND

full speed on innovative products and solutions for the mobility concepts of tomorrow and are keeping an eye on all drive types.



### MEGATREND DIGITALIZATION

Digital transformation is encompassing and changing the entire value chain at companies. We see digitalization as an opportunity to better understand customer wishes and fulfill them faster and more precisely. Even as product-cycle times shorten, we will continue to design our products and services innovatively and efficiently. We see digitalization as a business model that both improves our competitiveness in existing markets and opens new prospects that we are ready to pursue.





### DRIVING DIGITAL NETWORKING

As an Industry 4.0 pioneer, we are a driving force for the integration of production controls and Enterprise Resource Planning systems in production and automotive industries.

# VALUES IN PRACTICE. ONE SPIRIT.

What fundamentals and principles guide our thoughts and actions



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» Humility, honesty, a solid financial basis and the ability to adapt to any changes. «



Carl Johann Freudenberg His management principles form the basis of our business principles today.

### VALUES THAT HAVE UNITED US

### For nearly 170 years

Strong company values are the yardstick for how we think and act. They guide our daily interactions and unite employees in some 60 countries into a Freudenberg Family. And they also define the values we use when dealing with customers, business partners, neighbors and the environment. This makes us a reliable partner around the world. Freudenberg is still family-owned, making it independent, long-term oriented and responsible in its actions. What guided our company founder Carl Johann Freudenberg still applies today. His "Allgemeinen Betrachtungen" (General Observations) from 1897 are the inspiration for our current Business Principles, which form the basis for our Guiding Principles. Every employee is an ambassador for these values and pledges to uphold an internal Code of Conduct, specifying practical workplace issues, including compliance, workplace safety, health and environmental protection.



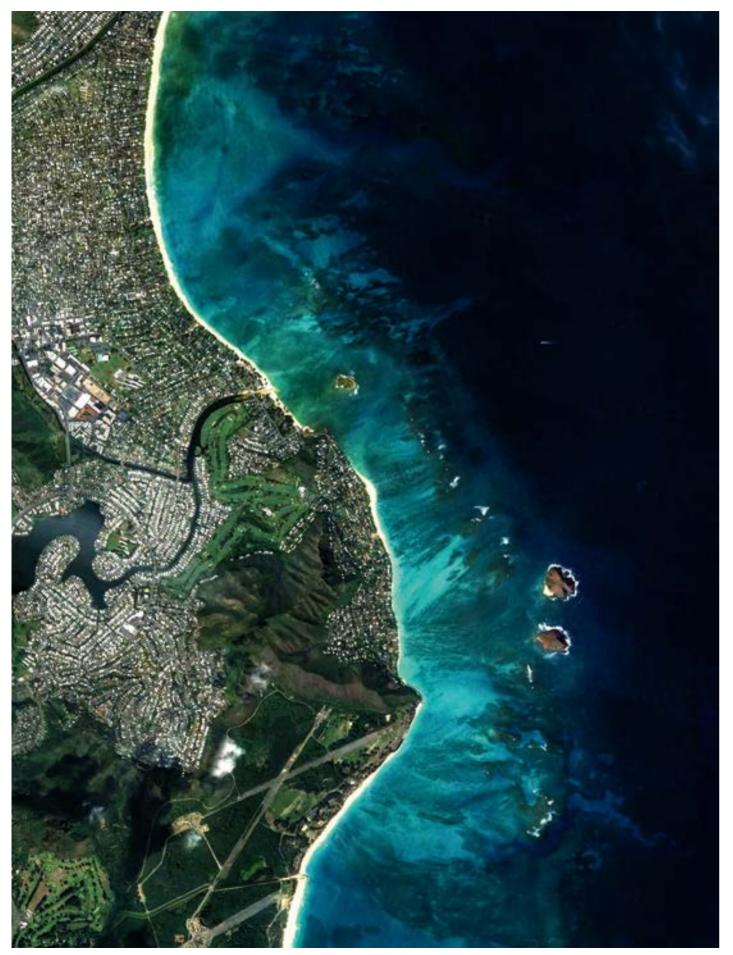
# JOINT RESPONSIBILITY. ONE SPIRIT.

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Why we always see financial success and responsibility as closely linked 5 60



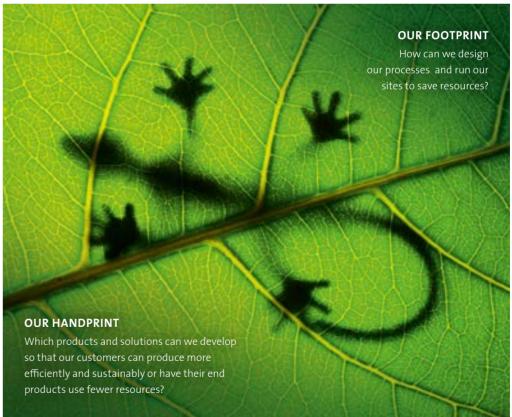
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### SUSTAINABLE SOLUTIONS FOR A WORTHWHILE FUTURE

As a values-based, family-owned technology process sustainability have always been part group, our corporate goal is not merely financial of responsibility practiced at Freudenberg. success, but always involves responsibility for Sustainability has two dimensions for us. society.

With the goal of minimizing our own Footprint The two goals have been inextricably linked and maximizing our customers' Handprint, our since the company's founding. We strive for sustainability measures focus on five core themes: solutions that improve living conditions around materials, waste, energy, emissions and water. the world and support sustainable developments for the environment and society. Product and





### FOOTPRINT WATER, ENERGY AND EMISSIONS

The Freudenberg Home and Cleaning Solutions factory in Monselice, Italy has a block heating plant, where hot water is used to heat the production halls in winter. In addition, hot air from the ventilation system is not merely discharged

into the environment, but is used to dry wet components and to heat paint-drying furnaces. The approach is both environmentally friendly and helps cut costs.



At the nonwoven site in Parets del Vallés, Spain, energy consumption could be reduced by nearly 20 percent within a few years. The process involved countless small and a few large-scale measures to generate the desired result.



#### ▲ RECYCLING HOT WATER

### ◄ REDUCING ENERGY CONSUMPTION

These included the insulation of pipes, the heating of production halls with an energy-efficient infrared system or the replacement of older steam-generation machines.

### HANDPRINT ENERGY, MATERIALS AND WASTE

#### REDUCING MATERIAL USAGE WITH SPECIALTY LUBRICANTS

Klüber Lubrication's specialty lubricants for high load rolling and slide bearings in wind turbines reduce the shut-down time for turbines, significantly increasing productivity.





At the same time, the products protect rolling bearings from wear and increase their operational life. The operator thus has lower repair and replacement-part costs as well as lower costs for usedgrease disposal. This reduces material usage and waste.

### THINKING BEYOND THE VALUE CHAIN

Corporate citizenship at Freudenberg extends beyond the value chain. Our goal is to be a good corporate citizen and good neighbor in all the countries, states and communities we call home.

Thus, many companies, locations and employees are socially engaged and support a broad spectrum of projects – from small initiatives on site up to complex international programs. The following examples clearly illustrate how responsibility at Freudenberg is put into practice both inside and outside the company and over the long-term.





#### INTEGRATION OF REFUGEES

A Freudenberg Group-wide initiative helps cope with one of the largest challenges we now face. A special focus on supporting refugee children and youths by providing language-skills training and educational opportunities. » Responsibility is an integral component of the Freudenberg Spirit. It is reflected in both our quest for greater sustainability and in numerous aid projects. «

> Tanja Heislitz Technical Director Sales, Freudenberg Sealing Technologies







e<sup>2</sup> stands for "education and environment." The international program aims to provide people with access to education and work and support environmental protection. The primary goal is to motivate and invite every employee to help improve society.





#### **ELEMENTARY SCHOOL** IN EARTHQUAKE ZONE

In the aftermath of a severe earthquake, the Chinese village of Haijin in the Sichuan Province was destroyed. Freudenberg helped rebuild the school and in 2009, it reopened for some 300 schoolchildren. Contact remains close: every year, Freudenberg employees visit the school and organize various activities such as the summer-school project, tutoring and a Christmas party. In 2016, a multifunctional hall was opened.

### **TRAINING CENTER IN** INDIAN TSUNAMI REGION

India's Nagapattinam region in the Nadu Province south of Chennai was hit hard by a tsunami in 2004. Since 2009, Freudenberg has provided the opportunity for a dual traineeship in a charitable training center. With qualification as electricians, welders, plumbers, engine mechanics or machinists, more than 400 young people have been given a successful start to their professional lives.



Editorial Information

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Published by Freudenberg & Co. Kommanditgesellschaft Corporate Communications Phone: +49 6201 80 0 CorporateCommunications@freudenberg.com www.freudenberg.com

March 2019 Item No. FRE1039EN



Platzhalter Logo "Klima-neutral

