

PROTECTING PEOPLE OPTIMIZING PROCESSES

FILTRATION SOLUTIONS FOR A BETTER
QUALITY OF LIFE

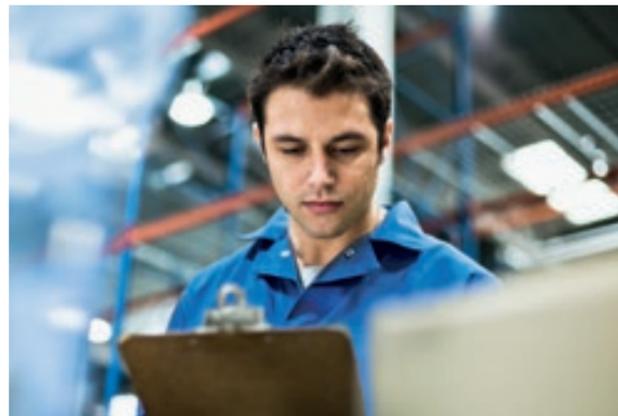
FILTRATION SOLUTIONS FOR EVERY CHALLENGE

WITH FORWARD-LOOKING CONCEPTS FROM FREUDENBERG

One of the big challenges facing society today is safeguarding the cleanliness of air and liquids, both now and in the future. Freudenberg Filtration Technologies makes an essential contribution to this by developing exciting filtration solutions.



MAKING INDUSTRIAL PROCESSES MORE EFFICIENT



PROTECTING PEOPLE, OPTIMIZING PROCESSES



ENERGY-EFFICIENT PROTECTION IN FOCUS

PROTECTING THE ENVIRONMENT THROUGH SUSTAINABLE PRODUCTS

Reliable protection against fine dust, improvement in the quality of indoor air, efficient treatment of clean water – we design reliable, economical and sustainable solutions for our customers for these and many more filtration applications. Always on the basis of our in-depth know-how in the field of filter technologies and application engineering.

We are convinced that economic efficiency, social responsibility and protection of the environment are inseparably linked. Because of this, we are committed to the promotion of sustainable technologies and product solutions of the highest possible quality.

Our focus is always on energy efficiency. Because industrial and commercial filtration systems have a high level of energy consumption, rising energy costs are a key issue for our customers. In developing energy-efficient filters, we make an important contribution to the protection of the environment. Our customers also benefit from this. By using our energy-efficient filtration solutions, they save money while at the same time reducing their impact on climate change.



PROTECTING THE ENVIRONMENT AND RESOURCES



IMPROVING THE QUALITY OF LIFE



NEARLY 60 YEARS OF EXPERIENCE IN FILTRATION

Discover the fascinating and diverse world of Freudenberg Filtration Technologies in just three minutes – simply scan the QR code to view our image film. www.freudenberg-filter.com/en/imagefilm



TECHNOLOGIES FOR CLEAN AIR AND LIQUIDS

PRODUCTS, SERVICES AND SYSTEM SOLUTIONS

Freudenberg Filtration Technologies is a member of the Freudenberg Group.

Freudenberg is a globally active technology company that is successful in various sectors and markets. In addition to filtration solutions, Freudenberg develops and produces non-wovens, oil seals, vibration control technology components, household products, release agents, specialty lubricants, surface treatment products, medical and mechatronic products.

As a global technology leader in air and liquid filtration, Freudenberg Filtration Technologies develops and produces high-performance, energy-efficient filtration solutions that improve the efficiency of industrial processes, conserve resources, protect people and the environment and thus enhance the quality of life.

- Successful in the field of filtration since 1957
- Global presence for our customers: Around 40 production sites on all continents and about 2,000 employees
- Headquarters: Weinheim, Germany
- Convincing brand quality: Viledon® and micronAir®
- Comprehensive filtration portfolio: products, system solutions, services

PROTECTING PEOPLE

Sustainable product solutions that protect people and the environment day-in, day-out.

OPTIMIZING PROCESSES

Energy-efficient and high-performance filter solutions for more efficient processes.



COMMITTED TO THE HIGHEST QUALITY

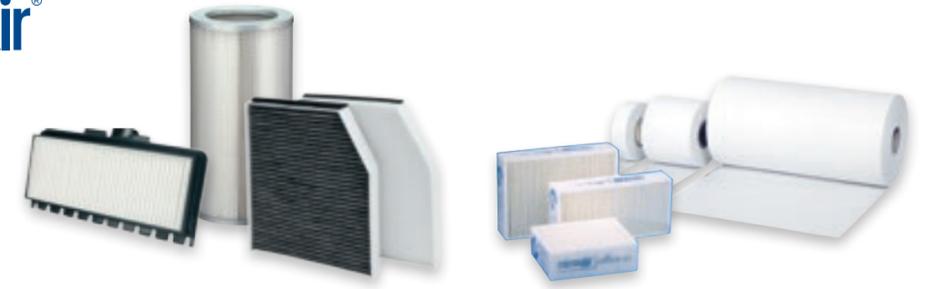
THE BEST SOLUTION FOR EVERY APPLICATION

Freudenberg Filtration Technologies develops high-performance, energy-efficient concepts for the filtration of air and liquids that protect people and optimize processes. Our global brands Viledon® and micronAir® stand for high-quality filtration elements and systems for industry and consumers.

viledon®



micronAir®

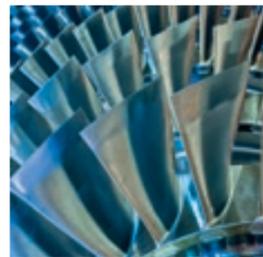


A SPIRIT OF INNOVATION, GUIDED BY VALUES

The Freudenberg Group operates all over the world on the basis of set values. These values were enshrined in the Group's corporate culture by its founders, some 165 years ago. They guide our day-to-day operations in more than 60 countries and are shared by the 40,000 employees who make up the international Freudenberg family.

This sense of responsibility towards employees, customers, partners, neighbors and the environment forms the foundation for the innovative strength of this traditional technology company. It forms the breeding ground for close collaboration between the multicultural and interdisciplinary Freudenberg teams that develop pioneering new products and services. These sustainable solutions help improve global living conditions and drive forward the success of the Freudenberg Group's customers.

INDUSTRY AND PRODUCTION



Turbomachinery and compressors



Surface treatment



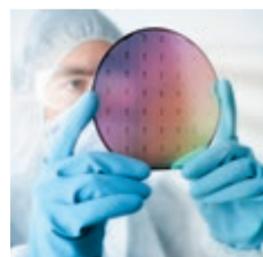
Food and beverage



Gas phase filtration (corrosion control)



Water solutions



General air-conditioning and cleanroom technology



Healthcare



Dust extraction

AUTOMOBILES AND TRANSPORT



Cabin air filters



Engine intake air filters



Diesel exhaust filters for mining vehicles



Air filters for ships and railways

COMFORT AND HEALTHCARE



Filters for room air purifiers and built-in residential ventilation



Filters for medical technology



Filters for office equipment



Filter media for respiratory masks

INDUSTRY AND PRODUCTION



EXPERT KNOWLEDGE FOR COMPLEX REQUIREMENTS

TECHNOLOGY LEADER IN INDUSTRIAL FILTRATION

Industrial filtration is highly complex and demanding. Freudenberg Filtration Technologies offers its customers comprehensive filtration concepts consisting of products, system solutions and services. In addition to great reliability, our filter elements have high energy efficiency. In this way, we help our customers to reduce energy costs and CO₂ emissions.

INDUSTRIAL AIR FILTRATION

Throughout the world, the Viledon® brand stands for the very highest standards in industrial air filtration. A successful combination of know-how, innovation and technical and scientific resources results in future-proof system solutions. These are used, among others, in the fields of general air-conditioning and cleanroom technology, turbomachinery/compressors, surface treatment, food and beverage production, shipbuilding, gas phase filtration and dust extraction technology.

LIQUID FILTRATION

From food and drinking water filtration to coolant and lubricant filtration, as well as supporting media for diaphragms. In all of these fields, Freudenberg Filtration Technologies supplies a comprehensive range of products with high-quality filter media for the very highest purity and reliability. Thanks to intensive research, we continually develop our products and set new standards in quality assurance with the very latest measuring methods.

SOME OF OUR AREAS OF EXPERTISE

Automotive • Mining • Offices • Chemicals • Power generation • Dust • Extraction • Healthcare • Food and beverage • Wood • Microelectronics • Surface treatment • Pulp and paper industry • Pharmaceuticals • Production • Steel • Cleanroom • Transport (railways, ships, vehicles) • Residential buildings • Cement



A COMPREHENSIVE PORTFOLIO FOR A WIDE RANGE OF APPLICATIONS

VILEDON® SYSTEM SOLUTIONS FOR AIR, WATER AND GAS

Freudenberg Filtration Technologies offers a comprehensive range of reliable and energy-efficient filtration solutions in addition to technical development and installation know-how for complete industrial filtration systems. Our system solutions are combined with an extensive program of services. This ensures the optimum efficiency of our filter systems for our customers.

AIR FILTRATION SYSTEMS

Viledon® Engineering is our complete service and installation program, which includes all construction elements for building or converting air filtration systems, particularly in the fields of cleanroom technology, process air and turbomachinery.

Components include single or multi-stage energy-efficient filter system solutions and innovative anti-icing systems (Viledon® IceProtect), as well as combined intake air filtration and cooling systems (Viledon® eee.Sy), which are each tailored to the specific requirements of the customer and the location.



WATER FILTRATION SYSTEMS

Sustainable use of the precious resource water is becoming increasingly important. With the Aquabio system technology, Viledon® Water Solutions has positioned itself as a competent development partner and supplier of membrane bioreactor (MBR) systems that enable economic recycling of process water and wastewater.

Reliable separation of solid particles and bacteria is especially important for the food and beverage industry, the pharmaceutical industry, waste disposal sites and tanneries. Thanks to the space-saving design of our water filtration systems, existing plants can be upgraded or extended without problems.



GAS PHASE FILTRATION SYSTEMS

Toxic gases, which occur in many industrial processes, can cause corrosion. Even small disturbances of electronic components lead to power loss, high maintenance and repair costs or unplanned downtime. Freudenberg's Viledon® ChemControl system solutions provide protection against corrosion.

Producers of pulp and paper, operators of refineries, or customers in the chemical and pharmaceutical industries enjoy the benefits of a complete solution tailored to their specific applications. We provide the design and construction of the filter systems, including all filter stages for particle and noxious gas filtration – including all technical services.



ADVANTAGES FOR OUR CUSTOMERS

Global reference, for example, intake air systems for thermal power stations, refineries, compressor stations, water works, bottling plants, laboratories and office buildings

Complete service packages, such as actual state analysis, consultation, design of filter systems, 3D CAD drawings, cost-effectiveness analysis, order fulfillment, technical training and after-sales support

- Experienced engineering teams
- Comprehensive services – from filter change through to hygiene inspections
- One partner for all your filtration requirements



ADVANTAGES FOR OUR CUSTOMERS

- Reduced stocks and warehouse management costs
- Reduced ordering costs
- Improved and stable air quality
- Long-term quality assurance
- Reduced number of suppliers
- Continuous improvements
- Full control of costs

viledon®

INDUSTRY AND PRODUCTION

FILTER PLUS SERVICE PLUS CONSULTING

VILEDON® FILTERCAIR AIR QUALITY MANAGEMENT

COMPLETE AIR QUALITY MANAGEMENT

To ensure that our customers obtain maximum benefit from the quality of Viledon® filters in their complex and sensitive systems, we have developed a comprehensive filter management system. Viledon® filterCair is an individually tailored package consisting of an extensive filter program plus services and guarantees.

Viledon® filterCair service packages cover the full range of air quality management. This opens up a wide spectrum of technical and economic benefits to our partners.

As a long-standing partner of the automotive industry, Freudenberg Filtration Technologies can provide many references of successful Viledon® filterCair management services. The main emphasis in this segment is on the optimization of painting processes. Through the analysis of various process parameters, our customers benefit from increased plant availability with low operating costs. Our services can be found in many other industries as well.



AUTOMOBILES AND TRANSPORT



TRUSTED PARTNER OF THE AUTOMOBILE INDUSTRY

NUMBER 1 IN ORIGINAL EQUIPMENT SUPPLY

All major automobile manufacturers rely on our filtration competence. As part of the Freudenberg Group – one of the 30 largest German automotive component suppliers – and a pioneer in the development of high-performance non-wovens, we develop pioneering innovations and work continually to optimize our processes. We offer competent project management throughout the world and ensure reliable delivery.

Certified quality: As a company certified according to DIN EN ISO 9001:2000, DIN EN ISO 14001 and TS 16949, we carry out stringent quality controls and are well known for our great reliability.

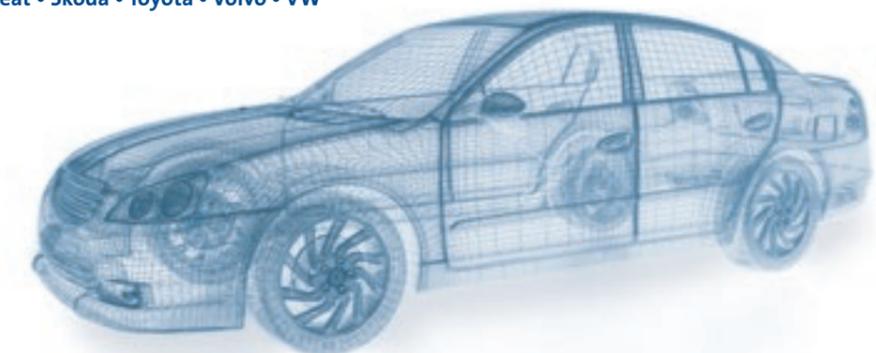
Technological know-how: micronAir® uses high-performance filter media from our own production. All filter media are tested in our laboratories according to the current standards, norms and directives.

Research and development: micronAir® cooperates with all major automobile manufacturers throughout the world on the development of forward-looking solutions.

Global presence: As a dependable development partner of the automotive industry, micronAir® has worked throughout the world for more than 25 years on the development of first-class filter solutions. Our production is always close to our customers – at more than 10 locations throughout the world.

MAJOR AUTOMOBILE MANUFACTURERS TRUST MICRONAIR®

Alfa Romeo • Aston Martin • Audi • BMW • Chery • Chrysler • Citroën • Daewoo • Ferrari • Faw • Fiat • Ford • Foton • General Motors • Honda • Hyundai • Iveco • Jaguar • Keihin • Kia • Lamborghini • Lancia • Lexus • Man • Maserati • Mazda • MCC • Mercedes-Benz • Nissan • Opel • Peugeot • Porsche • Renault • Rover • Saab • Saja • Seat • Škoda • Toyota • Volvo • VW



MAXIMUM PROTECTION IN THE VEHICLE

SAFETY FOR MAN AND MACHINE

MICRONAIR® CABIN AIR FILTERS

Without cabin air filters, pollen, soot, dust, gases and unpleasant odors would directly enter into the automobile. Passengers would breathe unfiltered, polluted air. Traffic and industrial exhaust gases are not the only significant health hazard to passengers in vehicles. Agricultural substances such as fertilizers or liquid manure and of course irritant gases such as ozone, can have negative effects on health. micronAir® cabin air filters ensure clean air in the automobile and increase driving comfort and safety – especially for allergy sufferers.



MICRONAIR® ENGINE INTAKE AIR FILTERS

Modern high-performance engines need clean air in order to produce their maximum power. micronAir® engine intake air filters protect against contaminants in the outside air and therefore ensure optimal combustion processes in the engine while also preventing damage to highly sensitive sensors.



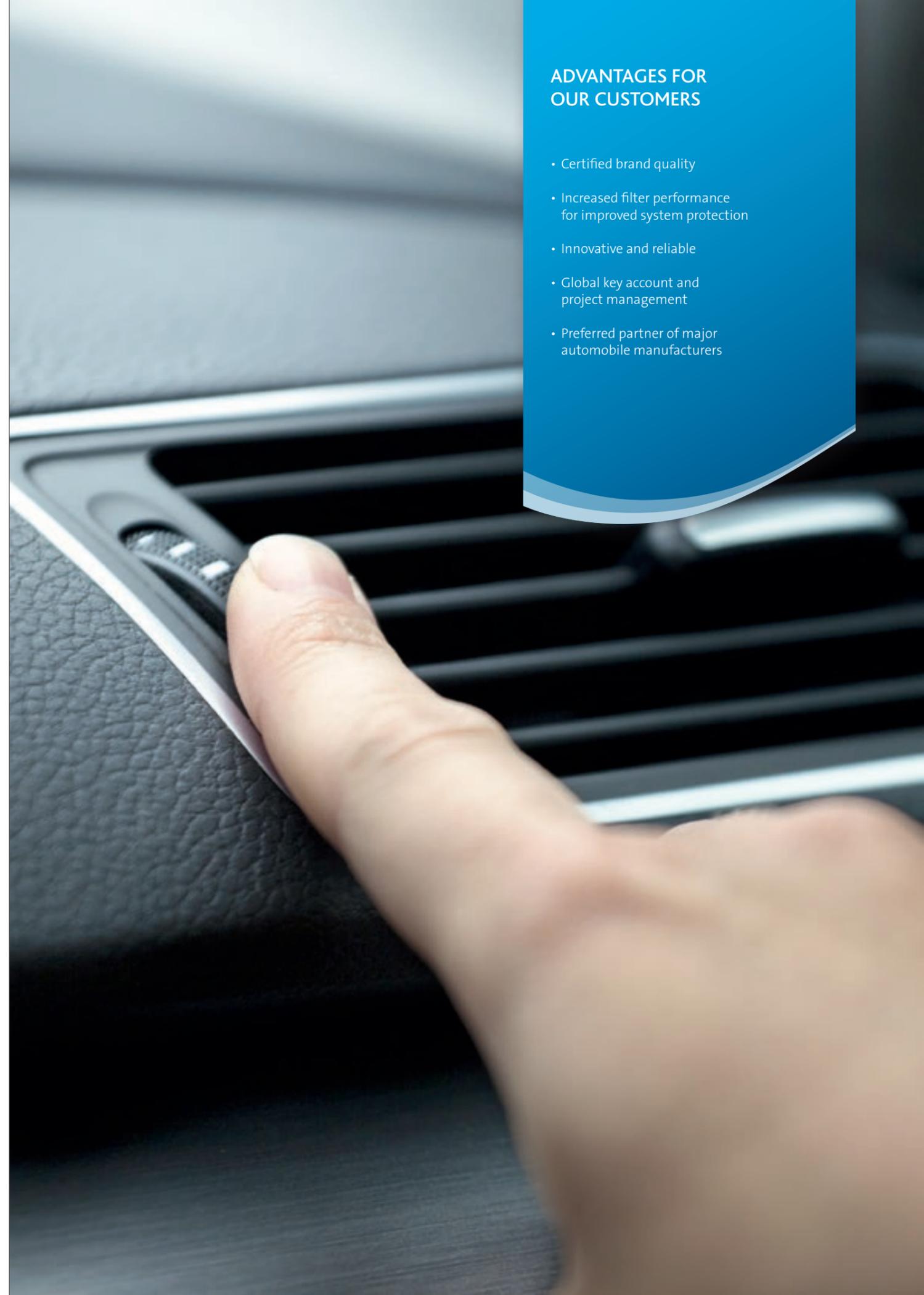
MICROFRESH® DIESEL EXHAUST FILTERS

For 20 years, microfresh® diesel exhaust filters for mining vehicles have helped to protect the health of miners. A reliable supply of clean air is essential, not only above ground but also underground. Highly efficient microfresh® filter cartridges provide excellent performance here.



ADVANTAGES FOR OUR CUSTOMERS

- Certified brand quality
- Increased filter performance for improved system protection
- Innovative and reliable
- Global key account and project management
- Preferred partner of major automobile manufacturers



COMFORT AND HEALTHCARE



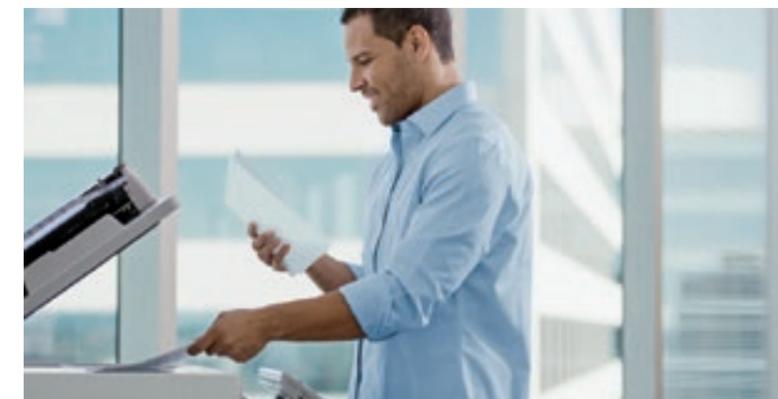
FEELING GOOD THANKS TO PURE AIR

HEALTH PROTECTION FOR A BETTER QUALITY OF LIFE

Protecting people and improving their quality of life is a further field of competence in which Freudenberg Filtration Technologies provides pioneering solutions. These protective filters are used in the home, in interior areas and offices, in hospitals and in sensitive medical areas.

Freudenberg filters can filter out even superfine particles, which can be considerably smaller than 2.5 micrometers. For comparison: The diameter of a human hair is 40–120 micrometers. A particular risk is that microorganisms may become attached to the particles. When breathed in, these can cause disease. Dust, soot and pollen can have a direct negative effect on health – especially in the case of allergy sufferers.

micronAir® filtration solutions for preventive healthcare help to effectively protect people against dust, gases and pathogens. In this segment we develop innovative concepts for interiors and sensitive areas together with our partners from many branches of industry.



DEVELOPING INDIVIDUAL SOLUTIONS WITH OUR CUSTOMERS

NEW STANDARDS FOR INTERIOR AND SENSITIVE AREAS

HOME FILTER SOLUTIONS

In living areas, Freudenberg filters are used in air-cleaning filters and for ventilating passive houses. The filters capture the very finest dust particles, hazardous gases and odors and ensure a pleasant and healthy indoor atmosphere. Pollution of interior air – for example due to emissions from furniture, floor coverings and paintwork, or unpleasant smells in the kitchen – are now a thing of the past.

HOUSEHOLD FILTER SOLUTIONS

Vacuum cleaners remove dust. Our high-quality motor protection and exhaust air filters are installed as secondary filters after the vacuum cleaner bag. They increase the life of the vacuum cleaner and protect users – especially allergy sufferers – from particles in the exhaust air. In addition to superfine particles, the outlet filters also capture microorganisms, bacteria and pollen in the vacuum cleaner.

OFFICE FILTER SOLUTIONS

On average, we spend 90% of the day indoors. Therefore, we contribute to improving the quality of indoor air and protecting people from hazardous particles and gases. For example, pollution due to fine dust and toner dust in offices is a well-known problem, which has been confirmed by a number of international studies. Emission sources include laser printers, fax machines, photocopiers and shredders. micronAir® provides perfect filtration solutions for this.



RESPIRATORY FILTER SOLUTIONS

High-quality filter media made from synthetic fibers are used for the manufacture of rated particle filters for respiratory masks. The high technological level of the filter media and the production process, which is protected by patent throughout the world, guarantees maximum reliability and processing capability for the production of half masks for personal breathing protection.



FILTER SOLUTIONS FOR MEDICAL TECHNOLOGY

The number of elderly people in Europe is increasing – with corresponding effects on the healthcare system. The demand for associated products will only increase. Freudenberg Filtration Technologies already provides highly reliable solutions for medical technology. From complete ventilation systems for hospitals with sensitive areas such as operating rooms to filter media for medical equipment such as anesthesia or dialysis devices. Further applications: Incubators for premature or new-born babies, equipment for artificial respiration and devices for testing lung function.



ADVANTAGES FOR OUR CUSTOMERS

- Development of filter media according to specific customer requirements
- Continuous further development of the end product in cooperation with our customers
- Cutting edge product solutions with state-of-the-art filtration technology
- High quality standards thanks to in-depth knowledge of materials and operational procedures





UMCOMPROMISING QUALITY

FROM THE FIRST PROCESS STEP TO THE LAST

Freudenberg Filtration Technologies stands for ultimate quality. For our customers, this means: Greater safety in daily use. Our consistent efforts to achieve the very highest standards are illustrated by the wide variety of our certifications and quality improvement initiatives. Where others achieve the minimum standards, we go one step further and set new standards.

CUTTING EDGE TESTING TECHNOLOGY

With the aid of the very latest testing technology, we test our filters according to the standardized performance tests of national DIN and international standards. These tests are supplemented with stringent special tests in Freudenberg's own test laboratory, in which the filters must pass even stricter requirements such as fluctuating climatic and humidity conditions. In particular, filters for sensitive areas are subjected to individual tests using a multiscanner. A test certificate that guarantees the absence of leaks and the required performance is only issued if the particle filter passes this test.

PRACTICAL TEST PROCEDURES

Before the development of a new filter is successfully completed, the filter is subjected to many practical test procedures in addition to the laboratory tests. This performance data provides valuable knowledge, that also forms the basis for the continuous development of our products and optimum advice to our customers.

CONSISTENTLY CERTIFIED SERVICES

Freudenberg Filtration Technologies stands for the highest quality. From the first stage of development to manufacture and delivery of the products, from application engineering consultancy all the way through to after-sales service. We give particular priority to preventive quality assurance for our products and services and we operate a holistic integrated quality management system. All our business processes are subjected to continual monitoring and further development.

Freudenberg Filtration Technologies is certified according to the current DIN EN ISO 9001. Our overall integral management system is based on the current ISO/TS 16949 regulations (requirements of the automotive industry), ISO 14001 (environmental management) and OHSAS 18001 (occupational health and safety assessment systems). Six Sigma is an integral part of our corporate culture.

We are an active member of trade associations and leading committees. As a long-time technology leader, we are committed to continuous progress in the filtration industry. Day by day, we systematically implement our corporate guidelines throughout the entire process chain; thus ensuring outstanding and reliable performance in quality, innovation, risk management, environmental protection and occupational health and safety.

ALWAYS THINKING ONE STEP AHEAD

INNOVATION AS A COMPETITIVE ADVANTAGE

As a member of the Freudenberg Group, we are pioneers in the manufacture of synthetic high-performance filter media. With our competence in the design and assembly of filter elements, we can quickly and efficiently respond to changing market situations and customer requirements and can set new standards in air and liquid filtration on the basis of high process reliability and dependable quality in filter solution applications. We also pursue this principle of innovation and quality in our new filtration technologies such as gas phase filtration and process water treatment.



INNOVATIONS FROM FREUDENBERG FILTRATION TECHNOLOGIES

Discover more about how we support our customers with innovations – and find out about specific examples of products and applications.
www.freudenberg-filter.com/en/innovations



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