

Press Release

Staying healthy in cars:

How a filter conquered the market

30 years of innovative Freudenberg cabin air filters

Weinheim, Germany, July 11, 2019 Nitrogen dioxide on streets in urban areas with heavy traffic has been a hot topic for years. This air pollution can find its way into vehicle cabins. An ADAC study shows that activated carbon filters not only keep vehicle cabins free of sand, dust and particles such as diesel soot, but also help significantly reduce gaseous pollutants such as hydrocarbons, sulphur dioxides and nitrogen dioxide. The latest generation of cabin air filters can remove even the smallest allergens and particles from the air, helping to better protect against allergies and lung disorders. Freudenberg Filtration Technologies develops and sells innovative activated carbon combi-filters, while also supplying components for activated carbon filters. Freudenberg has a long history of filter technology. Thirty years ago, the company developed the first vehicle cabin air filter for serial production, initiating not only a new product category but also an entirely new industrial branch. The first model with a standard cabin air filter was the popular Mercedes Benz SL roadster in 1989. Brands such as BMW, VW, and Audi soon followed and offered optional cabin air filters. In 1991 the Opel Astra was the first mass market vehicle that came standard with the micronAir® cabin air filter.

An early idea for a cabin air filter came from former CEO Hans Freudenberg's chauffeur back in the 1950s. Noticing that his clothing was becoming soiled by the polluted air entering the vehicle, he had the idea of placing a piece of nonwoven fabric over the air intake vents. The first Freudenberg filter solution developed from this inspiration was the Viledon® filter mat, which launched onto the industrial market in 1957. The filter media used in the mats formed a basis for the later development of the cabin air filter.

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Nowadays, almost every vehicle in the world comes standard with a cabin air filter. Difficult to imagine that such an important product did not exist a mere 30 years ago. Up to then, vehicle filtration systems had focused exclusively on the engine. “It was our fundamental mission to improve human health and well-being that inspired the change in focus from the engine to the people inside the vehicle”, says Dr. Heinz Reinhardt, who was responsible for application engineering at the time. -

Freudenberg then achieved market leadership as an OEM supplier - a role it still occupies today. However, the speed of the company’s conquest was incredibly fast. In 1989, Freudenberg produced 35,000 micronAir® Filters. When the order came from Mercedes, things needed to happen fast - very fast. To meet the production schedule for the new SL, Freudenberg had to have things fully up and running within only six months. This demanded everyone’s complete dedication. Injection molding expertise was needed, production experiments needed to be carried out and pilot production runs launched as quickly as possible - without any experience in this area. After this was done, the product was scaled up for mass production over the next 18 months. By 1993, 3.6 million filters were being sold every year - with an upward trend.

High speed innovation

After the cabin air filters’ commercial success, one innovation followed the next. As early as 1993, the development team started work on an activated carbon filter, which still forms the basis for today’s combi-filters. From the beginning, all micronAir filters used an innovative new pleated filter medium, providing unprecedented protection against pollen and dust particles that could also be tailored to create different levels of efficiency. Premium manufacturers can specify the highest possible filtration performance, while manufacturers in the mass markets can make sensible compromises between efficiency and price.

In 1995, the first combi-filter rolled off the lines and came standard in numerous vehicles after 1997. In this model, a layer of activated carbon and filter medium provided added protection against harmful gases and

unpleasant odors. At the same time, Freudenberg worked closely with automotive manufacturers and original equipment manufacturers on many cabin air filters for specific models. To this day, these collaborations are an important part of the work. In 2016, the micronAir® proTect was launched on the market. The cabin air filters in the range are able to filter out even the smallest allergens and particles from the air, providing better protection against allergies and lung problems. The company's very latest innovation is the micronAir® Gas Shield activated carbon products for cabin air filters. Launched at the start of 2019, this revolutionary product provides targeted and regionally customized protection against the most harmful pollutant gases that fill the air we breathe, from nitrogen and sulfur dioxides to ammonia, ozone and aldehydes

Through 30 years of product innovation, communication between Freudenberg, the automotive industry, air-conditioning manufacturers, research institutes, regulatory bodies and public interest groups has clearly been a powerful driving force. The requirements of end customers and manufacturers are a key aspect. The insights of these groups help develop and improve Freudenberg's knowhow and products. In 2019, the micronAir® cabin air filter celebrates its 30th birthday and a new area has been established within the automotive industry.. As part of new mobility, cabin air filters and the experience, knowledge and inventive spirit of Freudenberg are now shaping the future of health protection, safety and comfort in vehicle cabins.

About Freudenberg Filtration Technologies

As a global technology leader in air and liquid filtration, Freudenberg Filtration Technologies develops and produces high-performance, energy-efficient filtration solutions which improve the efficiency of industrial processes, conserve resources, protect people and the environment and thus enhance the quality of life. With its Viledon® and micronAir® global brands, Freudenberg Filtration Technologies offers customers innovative filter elements and systems for the energy and resources, hygiene and health, automobile and transport, production and building technology sectors, and for highly-specialized applications. In 2018, Freudenberg Filtration Technologies generated sales of around €422 million and employed over 2,100 people. www.freudenberg-filter.de

About the Freudenberg Group

Freudenberg is a global technology group that strengthens its customers and society long-term through forward-looking innovations. Together with its partners, customers and research institutions, the Freudenberg Group develops leading-edge technologies and excellent products and services for more than 40 markets and for thousands of applications: seals, vibration control components, nonwovens / technical textiles, filters, specialty chemicals, medical products, IT services and the most modern cleaning products.

Strength of innovation, strong customer orientation, diversity, and team spirit are the cornerstones of the Group. The 170-year-old company holds strong to its core values: a commitment to excellence, reliability and pro-active, responsible action.

In 2018, the Freudenberg Group employed approximately 49,000 people in some 60 countries worldwide and generated sales of more than €9.4 billion. For more information, please visit www.freudenberg.com