



## Comprehensive Freudenberg expertise for pharmaceutical applications

### Process Seals – Sealing solutions for the pharmaceutical process industry

#### Freudenberg Sealing Technologies

Within Freudenberg Sealing Technologies, Process Seals is the sealing specialist for the process industries, offering products and services precisely oriented on the requirements of the food and beverage, chemical and pharmaceutical industries.

Above all pharmaceutical applications place high demands on sealing materials – due on the one hand to extreme operating conditions including aggressive media like organic solvents or high-temperature WFI water, and on the other to the strict legal requirements and purity criteria that must be fulfilled.

### High-performance speciality lubricants from Klüber Lubrication – always a good choice

#### // KLÜBER LUBRICATION

To support you in compliance with the stringent Good Manufacturing Practice guidelines applying in the pharmaceutical industry, Klüber Lubrication has developed special lubricants and has them registered as NSF H1, making all of our lubricants for pharmaceutical applications compliant with FDA 21 CFR 178.3570. These products are certified by the NSF according to the international norm ISO 21469, which guarantees that they are produced according to strict hygienic regulations. The result is a cost cut thanks to a significant extension of the component life and much longer maintenance intervals. To help you optimise your lubrication management, Klüber Lubrication have developed a service programme named KlüberAssetSupport, providing professional solutions for producers of food and pharmaceutical products regarding hygiene requirements in storage, use and labelling according to NSF ISO 21469.

### Based in Kaiserslautern, Helix Medical Europe is the market specialist for the development and manufacture of components and tubings for the medical, biotechnological and pharmaceutical industries.



As an innovative partner for development and production with more than 25 years of experience on the market, the company offers a broad range of customer-specific services, manufacturing expertise and unparalleled quality. Helix Medical is a global leader in the manufacture of precision-molded silicone and thermoplastic parts and tubing specially developed and approved for medical applications.

These components are exclusively produced in ISO Class 8 clean rooms in accordance with quality norms and certification standards including DIN EN ISO 13485 (2010) and DIN EN ISO 14971 (2010), as well as the FDA's cGMP.

### Vileda Professional – your experts in keeping clean rooms clean



Let's agree on this – operation management of controlled environments is a job for specialists, and the same goes for professional cleaning. Let's also agree that cleaning of controlled environments is critical for a perfect function of clean rooms. That's where Vileda Professional are the experts. Working with Vileda Professional means working with a partner with a solid experience of the complete cleaning process – from validating the most suitable and efficient cleaning solutions, to staff training and implementing cleaning products that give you the lowest possible total life cycle costs.

All From One Source

**Freudenberg – Expertise for the pharmaceutical industry**



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All From One Source

## Four companies – four specializations – one Group

As subsidiaries of the Freudenberg Group, Process Seals (hygienic sealing solutions), Helix Medical Europe (components and tubing), Klüber Lubrication (special lubricants) and Vileda Professional (clean-room maintenance) offer a comprehensive product range for the diverse production processes involved in the pharmaceutical industry – all in trusted Freudenberg quality.

Freudenberg is a family-owned group of companies. Over the course of its 160-year history, Freudenberg has grown to an international corporate group, with facilities in some 60 countries, while maintaining its traditional values.

### Aseptic Seals

Freudenberg O-rings are a nearly universal sealing solution, offering outstanding sealing properties for both static and dynamic applications. Innovative surface treatments like RFN™ ensure easy assembly and installation, as well as friction reduction.

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Sealing Technologies



### Tri-Clamp Seals

Our standardized clamp seals are the simplest and most efficient way to reliably connect DIN 32676 pipes from series A, B and C. The key advantages to this product are the selected Freudenberg materials.

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Sealing Technologies



### Clean-Room Wipes

Wiping is the tradition of the Freudenberg company. We have more than 60 years of experience in producing wipes for different applications. Vileda Professional offers a diverse palette of innovative products based on patented Freudenberg technology.

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### Cleaning of Floors

The Vileda Professional microfiber floor system is a total cleaning solution for controlled environments in accordance with the relevant ISO or GMP standards. The modern, easy-to-use system offers high-quality reusable products, associated services, efficient cleaning and impregnation methods and comprehensive training and advisory support.

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### Cover Seals

We stock O-rings made of tested and trusted Freudenberg materials in all standard dimensions. Special-order sizes and cords can be extruded using our FDA-compliant EPDM 391.

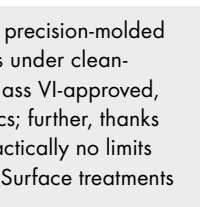
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Sealing Technologies



### Precision-Molded Parts

Helix Medical produces customer-specific precision-molded parts made of silicone and thermoplastics under clean-room conditions. We use FDA and USP Class VI-approved, platinum-cured silicones and thermoplastics; further, thanks to our cutting-edge facilities, there are practically no limits to the customized forms we can produce. Surface treatments offer additional value for our customers.

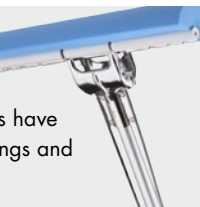
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MEDICAL



### Cleaning of Walls / Ceilings

Vileda Professional manufactures the patented Roll-O-Matic® mop system with integrated wringing mechanism. Roll-O-Matic® handles, sponges and refills have been trusted tools for cleaning walls, ceilings and floors in clean rooms for over 30 years.

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### Butterfly Valve Seals

We have developed white sealing materials especially for applications in the field of pharmaceutical solids production; these also include for example butterfly valve seals for powder applications, which are made of white EPDM 253815.

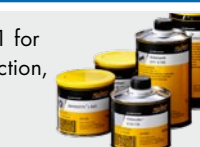
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### Speciality Lubricants

PARALIQ GTE 703 and UNISILKON L 641 for lubricating butterfly valve seals reduce friction, helping to extend component life time.

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### Tubings

Our broad selection of silicone tubings can be supplemented with customer-specific features. By pad printing, punching or tip trimming our products can be customized to precisely meet your individual needs.

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### Housing Seals

For customer-specific profiles or simple gaskets to seal housings, we can provide the right materials to withstand the demanding operating conditions in the pharmaceutical industry.

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### Shaft Seals

We offer a comprehensive assortment for all shaft seal applications. From a Hygienic Design radial shaft seal made of PTFE with a stainless steel support ring, to the basic Simmerring®, we can find the ideal solution for your specific needs.

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### 2-Component Parts

Helix Medical uses cutting-edge manufacturing technologies to produce silicone-thermoplastic and silicone-silicone components. Using surface treatments and coatings, these parts can also be developed into tailor-made solutions for your application.

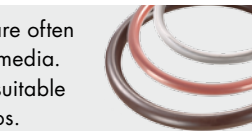
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### Quick-Release Couplings

O-rings in quick-release couplings are often exposed to a variety of aggressive media. Our broad materials palette offers suitable solutions for all application scenarios.

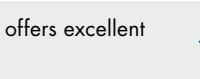
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### Speciality Lubricant

PARALIQ GTE 703 for lubricating O-rings offers excellent media resistance.

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### Guide Elements

We offer a broad range of PTFE U-seals to reliably seal applications involving rotation or translational motion.

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### Speciality Lubricants

Klüberpharma UH1 4-220, 4-460: Synthetic oils for lubricating tablet punches and bronze guides in tablet presses, especially for high-speed production.

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### Speciality Lubricants

Klübersynth UH1 6 oils: Synthetic long-term gear oils for longer service intervals.

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