Innovations made of high-performance plastics
for medical engineering.

elringklinger
Kunststofftechnik

Future technologies for medical progress: with the right partner.

The challenges in the medical industry are becoming increasingly complex. Technological and legal requirements are more demanding. Patient protection is growing in importance. The pressure to innovate is increasing. Costs must be lowered. What is required are innovations that guarantee medical progress and optimal treatment results while maintaining cost effectiveness.

As a system partner for medical and laboratory technology, ElringKlinger Kunststofftechnik develops custom-tailored, innovative engineering solutions from high-performance plastics, such as PTFE, PTFE compounds, PEEK, PPS, PEI, PE as well as the thermoplastic material Moldflon®, which enables new, economical processing methods.

Our engineering solutions are found millionfold in series production and convince even under the most demanding conditions in numerous applications. They withstand high temperatures, pressures, friction, aggressive media, and many other types of stress to an outstanding degree. In addition, they open up new constructive freedom for innovative, functional, and cost-effective solutions that precisely meet your specific requirements.

We have been setting standards with our products for more than 50 years. Highly efficient. Economical. Technological. In processing and application. Worldwide.

High-performance plastics in medical engineering – your benefits

- Customized properties
- Autoclavable, ETO sterilizable
- UV resistant
- X-ray contrast capability
- Optimal safety
- Antimicrobial
- Highly wear-proof
- Outstanding sliding characteristics
- Antiadhesive
- Breathable
- Biocompatible
- Physiologically harmless/inert
- Almost universally resistant to chemicals



Optimal safety and functionality: solutions made of PTFE and Moldflon®.

Color-coded PTFE tubings

Tube module

Trocar tube

Double piston pump

Our technologically sophisticated solutions allow for optimal results with modern medical and laboratory technology. Application-specific and optimized components result in medical products with unique properties, thanks to the plastic PTFE. For the clinical user, we offer products with a high level of usability. Their use guarantees reliability and safety for patients and staff.

Analytics and laboratory equipment

- Permeable tube modules for high-performance liquid chromatography (HPLC)
- Reusable filters
- Chemical-resistant PTFE seals and friction bearings with minimal dead space for laboratory equipment
- Durable diaphragms for dosing pumps

Packaging

- Inert pouches for banked blood
- Antiadhesive, sterilizable films and packaging for medical products

Implants

- Small PTFE ventilation tubes for ENT medicine
- Durable seals made from Chirulen® for surgical implants

Device components and modules, e. g., for minimally invasive surgery

- Precision tubes for endoscopy and cardiology
  - Color-coded
  - X-ray contrast capability
  - Multilumen
  - Tapered
- Autoclavable PTFE colored rings and plugs for rigid endoscopes
- Trocar tubes made from spiral PTFE tubings
- Filigree PTFE bayonet sleeves for laparoscopy
- Functionally integrated tube connections
- Stick-slip-free, wear resistant seals and friction bearings for
  - Operating tables
  - Vaporizers
  - Breast pumps
  - Dental instruments
  - Dry-running dental compressors
- Durable bellows in solenoid valves of dialysis machines
- Multipart double piston pumps for home dialysis devices (PD)

Material innovations in medical engineering.

Ventilation tubes | *Bayonet sleeve* | *Moldflon® film* | *Electrode holder*

Moldflon® – economical in shape

Our solutions made of the innovative material Moldflon® open new economical dimensions for large-scale PTFE processing. Moldflon® possesses the unique material properties of modified PTFE, however, with greater dimensional stability. It can be processed from the melt, for instance via injection molding, extrusion processing, or transfer molding.

Even complex component geometries can be produced in a single-step process, without laborious machining and with new molding possibilities—a low-cost, reliable process that saves on materials. This means that Moldflon® can be used, for example, as packaging for medical products, for banked blood pouches, and for functionally integrated tube connections.

Porous PTFE

Porous PTFE is manufactured using a special pressing and sintering process. The size of the pores is statistically distributed and ranges from 1 to 20 µm. One of the primary characteristics of this material is its high mechanical strength, which allows self-supporting technical solutions for media separation of gases and liquids. This material is used, for example, as a filter in sterile containers.

Highly flexible: expanded PTFE (ePTFE)

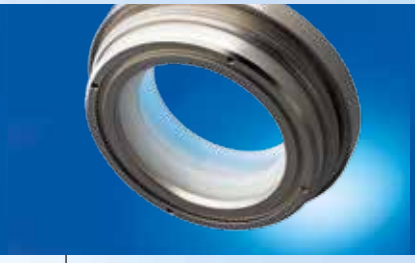
Manufactured by means of single- or multidimensional stretching in an unsintered state and subsequent hardening if necessary, ePTFE is characterized by a very high degree of flexibility and increased permeation. This material is used, for example, for highly flexible endoscopy tubes, for diaphragms, and for vascular prostheses.

Chirulen® – custom-tailored innovation

With the material Chirulen®, we offer an ultra-high-molecular-weight polyethylene (PE-UHMW), specially approved for medical applications, which is characterized by purity, very good sliding characteristics and high wear and abrasion resistance, even with abrasive media. The durable material is used, for example, for seals in medullary nails for bone distraction.

Engineering partnership for your medical products.

Moldflon® friction bearing



Flange seal

Diaphragm

Porous PTFE

Our expertise across the entire process chain will make your developments more reliable and faster, and optimally adjusted to market needs, both technologically as well as economically. As an independent and global manufacturer, we will be your reliable partner in the development and production of your medical products, even throughout longer development times.

Performance that gives you a head start

- Tailor-made technical and cost-effective solutions made of high-performance plastics with a precisely defined properties profile
- In-house development and test labs for materials, products, and systems
- In-house raw material development and compounding
- Moldflon® injection molding processing, the next generation PTFE
- Product tests for securing of serial production
- Continuous optimization of manufacturing processes and methods for quality assurance

Industry-specific conditions – for more safety

- More safety thanks to approvals for materials: we offer materials with approval or conformity in accordance with, for example, DIN EN ISO 10993, EU1935/2004, or FDA regulations
- More safety thanks to application of Good Manufacturing Practice (GMP): we offer a QA system certified in accordance with ISO/TS 16949:2002
- More safety thanks to optimal manufacturing conditions: we offer standardized manufacturing conditions in accordance with DIN EN ISO 14644-1

Take our plastics know-how to the test.

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