

Other Engineering Design Elements

ElringKlinger are masters in the art of making the best of plastics. We offer a wide range of materials that are optimally adapted to your needs. PTFE – the versatile high-performance plastic material – plays a superior role as the base material for new product ideas.

PTFE as an engineering design material or as a permanent composite with metals, elastomers and other plastics. Permanent strength even in extreme conditions.

But we also process other highly durable plastics such as

- PE-UHMW (ultra-high molecular polyethylene)
- POM (polyoxymethylene)
- PA (polyamide)
- PEEK (polyetheretherketone)

One of the crucial prerequisites for the functional performance and quality of assembly components is accomplished professional processing: From single parts to cost efficient volume production.

We continuously improve our manufacturing processes and develop new methods for quality assurance.

Our experience in this specialty field and our specified, integrated quality management system ensure that ElringKlinger products and problem solutions fully meet the requirements of our customers.

The product and application examples below are provided to give design and development engineers ideas of what is possible. Trust us to be your partner when it comes to translating product ideas into optimum solutions with functional reliability assured. That is why: what you need you will get from ElringKlinger. Try us!



Protective Covers

are used in the food, chemical and pharmaceutical industries. This example shows a probe with a PTFE cover for protection from aggressive media, welded at the face side (photo, right). Another version: Temperature sensor with PTFE cover. Lining of electrical heating elements as protective sheathing in electroplating and microelectronics applications (photo, left).

PTFE Blow Molded Tube

to protect the feeder cable in the lambda sensor from dirt and bending.

Trockar Tube

used in endoscopic surgery. The device with a spiral-shaped PTFE tube enables the performance of surgical procedures with relatively low loss of blood.

Deep Drawing Parts

Typical Characteristics

- Low material consumption
- Allows complex geometries
- Parts have thin walls
- For cost-effective manufacturing of large-volume production
- Material properties can be influenced positively



Protective Cap for Steering Angle Sensors

- Protection of electronics
- Temperature stability up to +150°C
- Chemically resistant to aggressive oils and cold cleaners

Sliding Tiles for Dyeing Machines

- Good sliding properties
- Easy assembly and removal
- Cost-effective manufacture
- High chemical resistance
- Easy to clean (anti-adhesive)

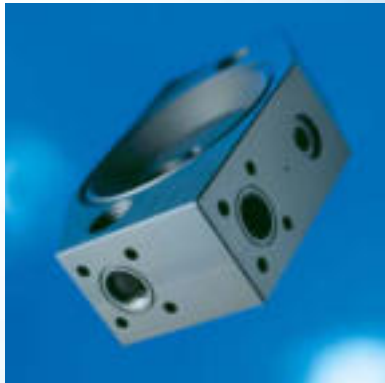
Milled Parts



PTFE Agitator Blade with Sintered-in Magnets

for use in electroplating technology.

- Good chemical resistance



Pump Housing

for use in the chemical and semiconductor industries.

- Allows complex geometries
- Allows large dimensions
- Different manufacturing technologies available



Ulbricht's Spheres Made from Porous PTFE

for use in optical measuring systems.

For additional information on engineered porous PTFE parts such as filter elements, Lambert's reflectors for projection screens, etc., please see our "Materials Catalog" as well as our "Light Flyer."



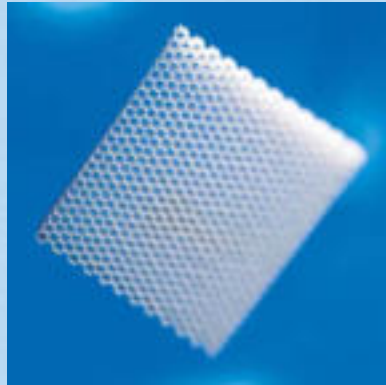
Back Plates

in heat exchangers up to dimensions of 3000 x 1500 mm.

Isostatically Compression-Molded Parts

Typical Characteristics

- Low material consumption
- Allows complex geometries



Honeycomb

for use in heat exchangers of power plants.

- Good chemical resistance



Extinguishing Nozzles

for use in high-voltage switches.

- Good electrical insulation
- High temperature resistance

Complete Solutions



Double Piston Pump

for use in home dialysis devices; consisting of a modified PE piston and rod seal as well as a POM housing. Complete assembly from a single source.



Metering Piston with Injected Elastomer

for use in the food and cosmetics industries.





Benefits

- Excellent anti-adhesive properties
- High temperature resistance
- Nearly universal chemical resistance
- Very good sliding properties
- Good wear resistance
- Adjustable thermal conductivity
- Adjustable electrical/dielectric conductivity

Application Examples

- Feed rolls and rollers
- Fuser rollers
- Pressure rolls and rollers
- Guide rolls and rollers

Manufacturing Process of PTFE Coatings

- Roller coatings with PTFE films
- Assembly of FEP-/PTFE shrink wraps

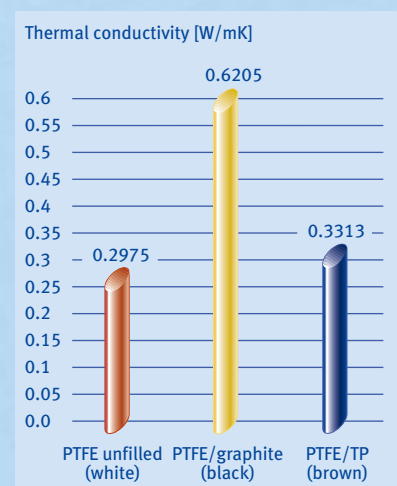
Rolls and Rollers with PTFE High-Performance Coating

The properties of PTFE can be influenced by processing methods and by adding fillers. Optimum adaptation to the respective application conditions is possible.

PTFE with Fillers

- Increased service life due to fillers
- Improved thermal conductivity due to fillers

Thermal Conductivity of Coatings for Fuser Rolls ⁽²⁾



Rolls and Rollers



Polyurethane-Coated Rolls and Rollers for Paper Feeding

Feeding Systems

Today two different technologies are used for feeding paper webs. We develop and manufacture both feeder rolls for paper with a so-called feeding perforation and newly developed feeding systems for tractor-less paper feeding.

Feeding Systems for Stacked Paper (PU-elastomer)

Benefits

- Long service life due to wear-resistant surface
- Quick and precise paper feeding due to high accuracies
- Good chemical resistance
- Low masses/weights
- Application-specific engineering design (surfaces, roller materials, dimensions)



Feeding Systems for Reel-Fed Paper (PU foam)

Benefits

- Reduction of paper costs by 30 – 50% by tractor-less paper feeding
- No disposal of edge trim needed
- Reliable feeding of light-weight papers
- Long service life due to wear-resistant surface
- Quick and precise paper feeding
- Good chemical resistance
- Low masses/weights
- Application-specific engineering design (surfaces, roller materials, dimensions)

