



**Leading the Way.
With Innovations Made of High-performance Plastics.**

elringklinger
Kunststofftechnik

The logo graphic for elringklinger consists of a blue, stylized, curved line that starts under the 'e' and ends under the 'r' of 'klinger', resembling a partial circle or a swoosh.

Future Technologies in Series. With the Right Partner.

Moving ahead with maximum performance and innovative dynamics.

The challenges in the automotive industry are becoming increasingly complex. Technological requirements are more demanding. Costs must be lowered. Development cycles must become shorter, production processes even more efficient.

ElringKlinger Kunststofftechnik, as a leader in technology and system partner for the automotive industry, develops custom-made, innovative engineering solutions from high-performance plastics, such as PTFE, PTFE compounds, and PEEK, 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 toughest conditions in numerous vehicle technology applications. They withstand high temperatures, pressures, friction, aggressive media, chemicals, and many other types of stress to an outstanding degree. And they open up new constructive freedom for innovative, functional, and cost-effective solutions that precisely meet your specific requirements.

This is how our seals and structural components set the standard. For more than 50 years. Highly efficient. Economical. Technological. In processing and application. Worldwide.

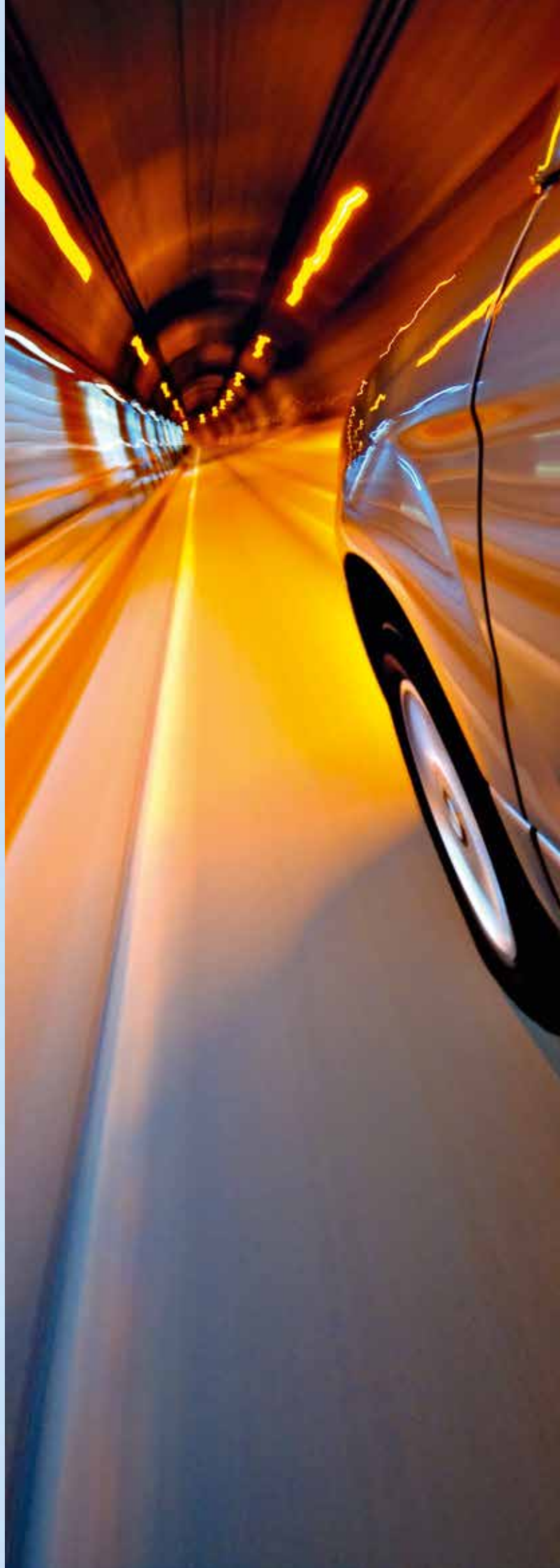


With global expertise, on site.

ElringKlinger Kunststofftechnik is at home in international automotive markets. As an ElringKlinger Group company, we use the global development and manufacturing structures of the Group with direct customer involvement. ElringKlinger has a worldwide presence with 45 locations and more than 7,500 employees, and is among the internationally leading automotive suppliers of components and systems for engines, transmissions, exhaust systems, and alternative drive technologies.

High-performance plastics – your benefits

- Customized properties
- For toughest requirements
- For a longer service life in critical applications
- More safety
- Extremely resilient
- Highly compression-proof
- Broad thermal application range
- Highly wear-proof
- Outstanding sliding characteristics
- Low friction coefficient
- Almost universal chemical resistance

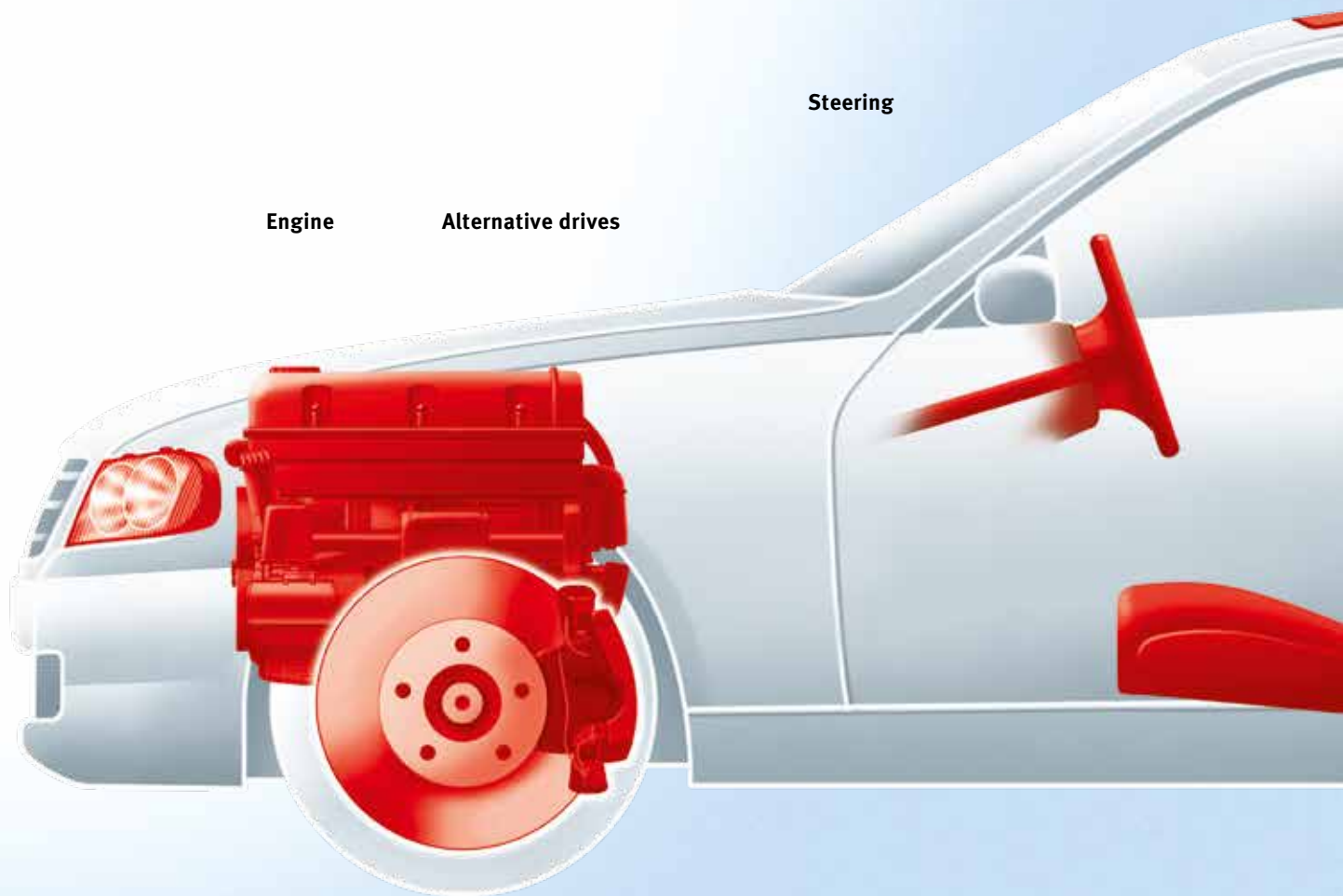


Intelligent Automotive Solutions – With High-performance Plastics.

Utilizing the full potential.

The use of innovative high-performance plastics unlocks an extensive efficiency potential in vehicle construction. In many areas, our ideas and engineering solutions are the key to faster development for serial production.

If you are looking to solve your challenges with more construction freedom and cost effectiveness, then we are your partner. Together we develop new, advantageous solutions that are the first of their kind – and successfully drive your project.



Engine

Alternative drives

Steering

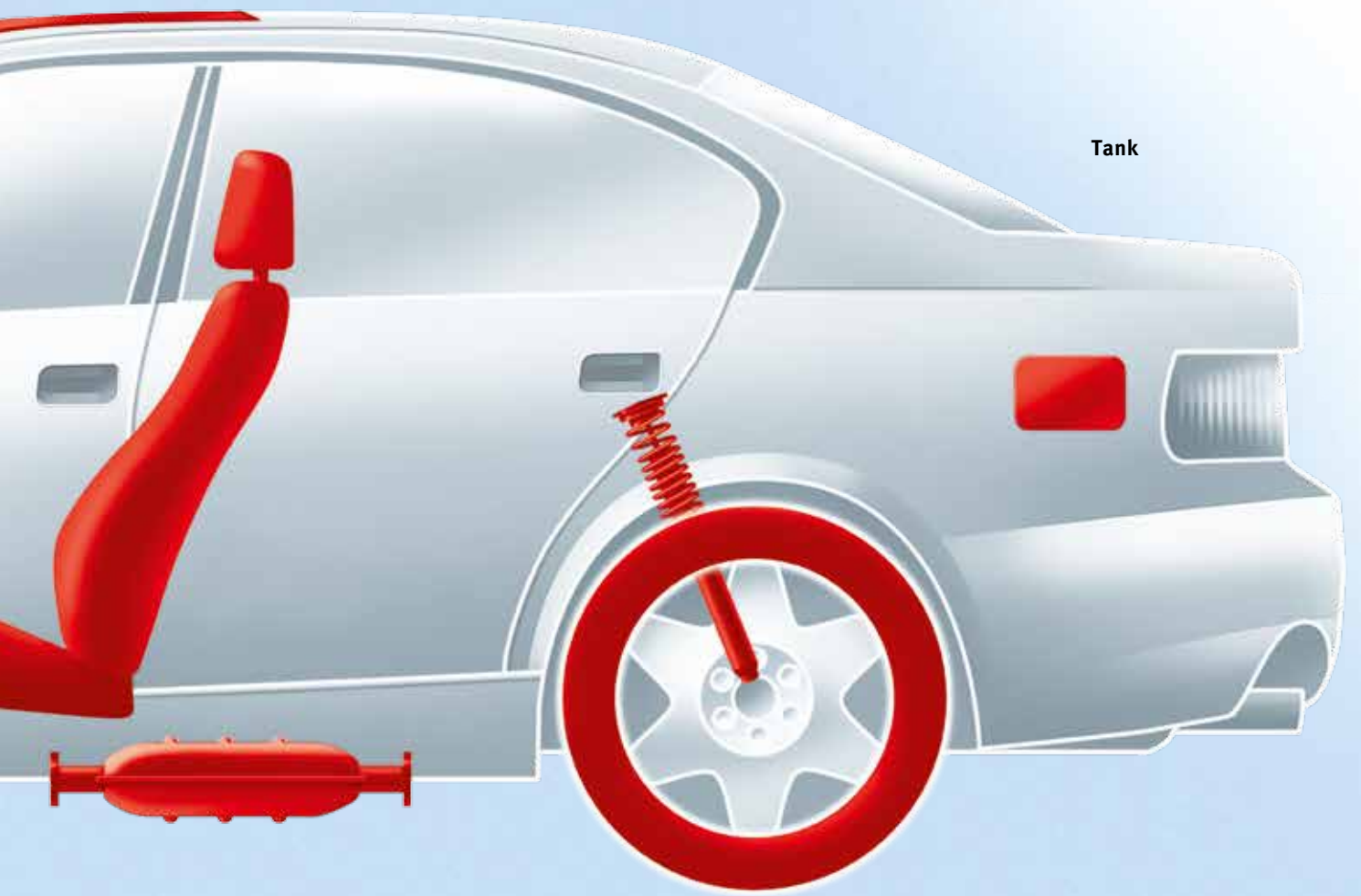
Headlights

Safety/brakes

Seat

Sunroof

Tank



Exhaust/catalytic converter technology

Chassis/shock absorber/wheel

Details Reveal the Better Solution.



Spring-energized seals

Sealing rings

Rotary shaft seals

Module with sealing lip

Engine

In modern compact as well as emission-, consumption-, and performance-optimized internal combustion engines, our superior components and solutions withstand extreme temperatures, pressures, aggressive media, and other types of stress, and contribute to increased efficiency and environmental compatibility:

- Spring energized PTFE-seals with special double spring seal design in high pressure gasoline and diesel injection pumps to avoid mixture of gas/diesel with motor oil
- PTFE- and Moldflon-seals made of special high pressure resistant materials for gasoline high pressure injectors
- Rotary shaft seals for fuel pumps and camshafts/crankshafts
- Module plastic pump housing with integrated PTFE sealing lip
- Shaft sealing rings for the crankshaft sealing
- Complete pistons with memory packings as condensate throttling for the engine brake

- PTFE sealing rings as thermostat seal in the radiator
- PTFE sealing elements for thermo management
- Sealing rings in transmissions
- PTFE seals for AdBlue piston pumps

Headlights

- Memory packings in headlight cleaning devices
- Pressure compensation elements in headlight cleaning devices

Steering

- PTFE parts for airbag systems
- PTFE hose elements in steering columns
- PTFE protective caps for protection of the electronics in steering angle sensors in steering gears



*Piston rings and
guide elements*



Blow molded tubes



Support rings



*Static high-pressure
seals*

Safety technology/brakes

- Support and guide rings for piston pumps for ABS/ESP/ASR systems

Chassis/shock absorber/wheel

- Sealing and guide elements for shock absorbers
- Piston rings, memory packings, friction bearings and guide rings in compressors for the oil-free provision of compressed air for air suspension/level control
- Special seals for tire pressure monitoring systems

Exhaust/catalytic converter technology

- PTFE blow molded tube and cable routing to protect the feeder cable in the lambda sensors from dirt and bending
- Spring energized seals for the exhaust gas recirculation
- Valve flaps for the exhaust gas recirculation

Additional range of applications

- Sunroof: PTFE hoses for bowden cables
- Seat: Memory packings in air pumps for active seats
- Tank: Sealing elements for tank valves
- Components for AdBlue tanks and supply systems



Protective caps



Memory packings



*Components for bipolar
high-performance energy
storage*



Friction bearing

Wear-resistant: PTFE seals for high-pressure direct fuel injection.

Pressures of over 200 bar are created in high-pressure pumps and high-pressure injection valves of modern direct fuel injection systems. Our highly wear-resistant PTFE-compound seals and their special sealing geometry ensure secure separation of fuel and engine oil while withstanding high piston speeds and temperatures. They offer guaranteed sealing over a very long service life and over 200,000 kilometers operational performance.

Multifunctional: Preformed hoses and cable routing for lambda sensors.

The temperatures around lambda sensors in exhaust-gas catalytic converters can reach up to 300°C. This is where our temperature-, pressure-, and weather-resistant PTFE blow molded tubes and cable routing are in use. They seal the sensors against splash water, dirt, oils, gasoline, antifreeze, and exhaust gases. They insulate the electrical cables and contacts against each other and simultaneously serve as cable bend protection, anti-chafe guard, and pull-out stop.



Moldflon® – Economical innovations in series.

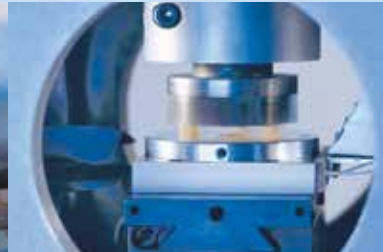
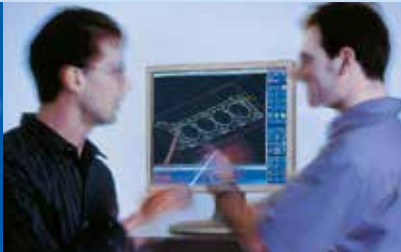
Our solutions made of the innovative material Moldflon® open new economical dimensions for large-scale PTFE processing. Moldflon® possesses the unique material properties of modified PTFE, however, with greater dimensional stability. As a thermoplastic material, it can be processed right out of the molten mass, 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 – in large-scale serial production. Material-efficient, more reliable during processing, and economical.

Spearheading new technologies and alternative drives.

Our products contribute to efficient, environmentally compatible mobility – for example, components for AdBlue tanks and supply systems, or valve flaps for exhaust gas recirculation. When it comes to accelerated, economical serial development of alternative drive technologies, we – together with our customized ideas and solutions – are an important partner going into the future. Our know-how, for example, is in demand for bipolar high-performance energy storage used as high-capacity power storage with extremely short load cycles in hybrid and electric vehicles. Our specialty gaskets and components are used in the peripheral supply systems of the fuel cell. And our ventilation and pressure compensation systems made of porous PTFE provide enhanced safety for electronics and energy storage systems.

Demand More. Advance with Our Help.



Comprehensive material and processing expertise for optimal solutions with in-house raw materials development, compounding, and application-specific compound optimization.

Teamwork from the idea to series production. Engineering with state-of-the-art tools, such as 3D CAD systems, FEM calculations, and lifetime simulations.

Test bench for rotary shaft seals with PTFE sealing lip for testing of various parameters.

Test bench for long-term wear rates of various PTFE compounds on different sliding mates.



Modern mixing equipment for precisely defined mixing ratio.

We use state-of-the-art analysis equipment such as TGA and DSC for the optimization of our PTFE compounds.

An engineering partnership that enables you to lead the way.

Our expertise across the entire process chain, including the involvement of your teams, will make your developments more reliable, 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, even throughout longer development times. Our development and manufacturing know-how enables the realization of seamless integration into your manufacturing and supply chain, as well as just-in-time delivery.

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
- Application-specific compound optimization with organic and anorganic fillers
- All manufacturing processes for semifinished products such as ram extrusion, compression molding, paste extrusion, and isostatic compression for minimization of material use
- Moldflon® injection molding processing, next generation PTFE
- Product tests for securing of serial production
- Continuous optimization of manufacturing processes and methods for quality assurance

Take our plastics know-how to the test.

The information provided in this brochure, based upon many years' experience and knowledge, does not claim completeness. No liability is assumed for damage claims on the basis of this information. All parts must be installed by trained and specialized staff. Product range and technical specifications subject to modification. No liability assumed for errata.



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