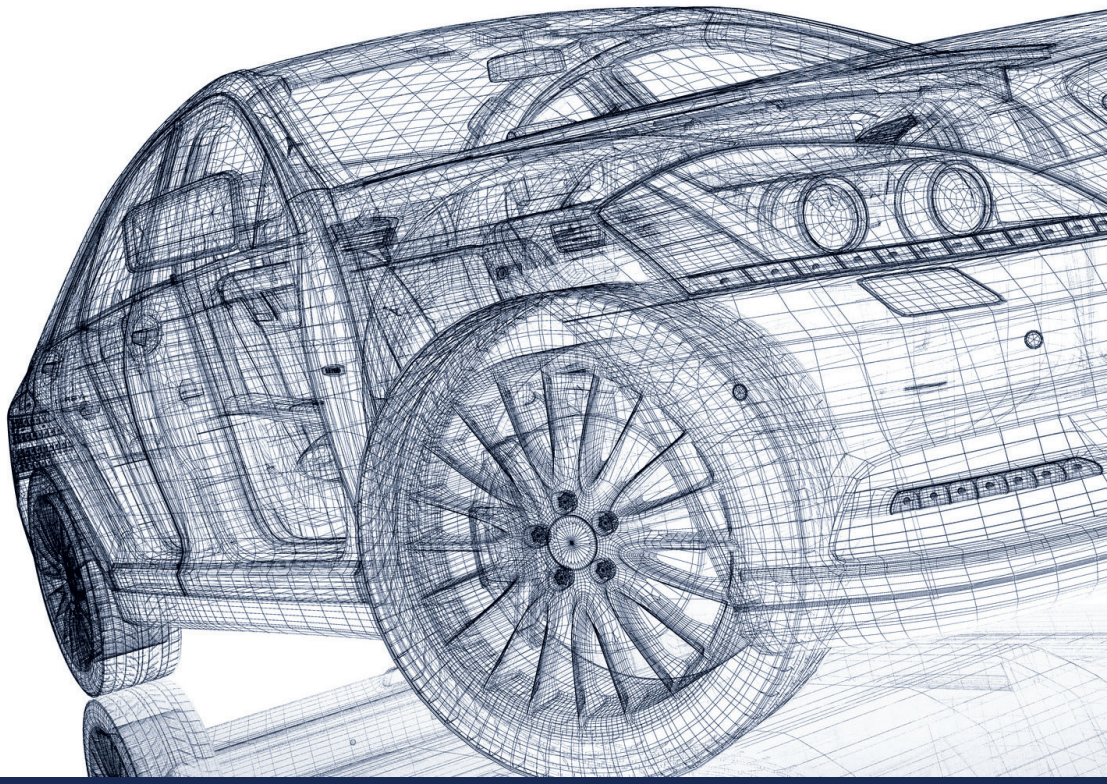
EASTERN SEALS
GLOBAL SEALING PROVIDER

UK SEALS
UK SEALS & POLYMERS LTD



Automotive sealing solutions

Increasing global demand is driving manufacturers to strive for higher quality in all aspects of automotive manufacture. The stringent emissions regulations, increase in manufacturer warranty times, and the rise in engine temperatures increases the property requirements for today's sealing products.

A wide variety of sealing solutions are used throughout today's vehicles. These include O-Rings that withstand high pressures in shock absorbers, sophisticated gaskets in electronic control units (ECUs), safety critical custom-molded components in braking systems and seals that withstand extreme temperatures, pressures and aggressive media in fuel injectors.

SEALING ENVIRONMENTS

- Extreme temperatures
- Coolants, refrigerants, brake fluids, ATF and other chemical solvents
- Oil, gasoline, fuel, diesel and grease
- Water, steam, dirt, dust and debris
- Environmental elements: ozone, oxidation, sun light, fungus, et cetera.
- Dynamic operating conditions

TYPICAL APPLICATIONS

- Transmissions and drivelines
- Diesel engines
- Oil filter and fuel systems
- Valve covers
- Engine oil pans
- Cylinder liners
- Hybrid-electric vehicles
- Sensors
- Steering systems

ABOUT US

The group is built on two of the UK's leading suppliers in automotive sealing technology.

Eastern Seals (UK) Ltd supplies seals to customers around the world. Specialist compounds are just one of the company's renown assets. UK Seals & Polymers Ltd specialise in hydraulic and pneumatic solutions. Together, the group boasts over 40 years experience in the Sealing industry.

We stock and supply a vast range of sealing solutions for cars, motorcycles, motorsport, light duty vehicles, coach, buses, trailers, trucks, and other heavy duty vehicles. Automotive parts can be supplied with Level 3 PPAP documentation, along with CPK and PPK controls.

Our extensive portfolio includes a wide range of seals and specialist materials:

- O-Rings, Bonded Seals and PTFE Seals
- Rotary Shaft / Oil Seals
- Gaskets, Packings and Sheet Materials
- Rubber Bellows and Mechanical Seals
- Retaining Rings, Snap Rings and Circlips
- Custom Mouldings and Extrusions

Featured Products

O-RINGS

O-Rings are used in automotive applications for sealing a variety of fluids. O-Rings are available in all AS568 inch sizes and a wide range of metric sizes (DIN 3771, ISO 3601 and JIS B2401) as well as custom sizes. O-Rings can be moulded in a wide range of elastomer compounds including PTFE, HNBR and special grades of Viton®. HNBR or Viton® O-rings are designed to meet the demands of oxygenate-rich gasolines, harsh engine oils and high engine temperatures.

ROTARY SHAFT SEALS / OIL SEALS

Rotary shaft seals, also known as radial shaft seals or just simply oil seals are used throughout automotive industry in many diverse applications. Rotary Shaft Seals are available in a range of seal geometry configurations and compounds including Nitrile, Viton® and PTFE. They are produced in single or double lip, with covered or uncovered metal parts, with reinforced textile rubber or reinforced metal case, as well as in many other different profiles.

BELLOWS (BOOTS)

Our range of rubber bellows (also known as boots) are designed to be suitable for steering systems, tie rod ends and axles, control cable, exhaust system, suspension joints, break systems, tractors and heavy vehicles. The type of material plays a crucial role in the performance of the rubber bellow. These seals are available in a range of compounds including; nitrile, EPDM, neoprene and polyurethane.

MECHANICAL SEALS

Automotive mechanical seals are designed to be inserted inside the cooling pump of the vehicle. It is vital that the isolation regime of the mechanical seal is at its highest level to allow the correct operation of the cooling pump. The seal also needs to guarantee prolonged isolation, to avoid malfunctions that could have repercussions on the efficiency of the vehicle.

Featured Products

CUSTOM MOULDINGS

Custom rubber mouldings for the automotive industry include rubber moulded seals, rubber moulded valve seats, cast polyurethane mouldings, rubber insulators, FFKM perfluoroelastomer, PTFE mouldings, rubber moulded diaphragms, rubber moulded masking boots, rubber to metal bonded components and rubber moulded suckers. These parts are available in almost any shape and cross section.

GASKETS

Semi closed cell foam materials are generally used to create gaskets for applications around irregular surfaces. We tend to supply semi closed cell materials for the automotive market as they offer superior water / dust tight properties to stop ingress. These materials also provide acoustic, NVH and thermal high performance properties. Materials in this range are extremely durable and have exceptional, ozone, UV, chemical and weather resistance.

WIPER SEALS (SCRAPER SEALS)

Also known as Scraper Seals or Dust Seals, the primary use of a Wiper seal is to prevent dust, debris and moisture entering the gland housing of the sealing system and damaging the pressure seals of a fluid system as reciprocating or rotating parts move. Without a wiper seal, the retracting piston rod could transport contaminants into the Hydraulic cylinder.

We supply Wiper seals in an extensive range of elastomer materials and profiles, including custom designs.

BONDED SEALS

Bonded seals can be utilised for a wide variety of automotive applications including engine sensors, fuel, braking and air conditioning systems. Bonded seals are primarily used in high-pressure environments where copper washers are unsuitable. Both the metal washer and the rubber material can be selected to suit a given application.

We supply standard and self centering styles in; Bolt size (Imperial), BSP, German Metric and French Metric. Bonded seals are available in a wide range of materials including nitrile and stainless steel.

Materials

MATERIAL	TEMP	CHARACTERISTICS	TYPICAL SEAL APPLICATIONS
Nitrile / Buna-N (NBR)	-40°C to +110°C	Good general purpose elastomer. Good mechanical properties when compared with other elastomers. Excellent resistance to petroleum-based fluids. High wear resistance. Relatively low ozone and weather resistance.	Transmission and engine cover seals, sensor seals, steering seals, anti-drain back valves and oil filter seals.
Aflas® (FEPM)	-10°C to +204°C	Outstanding resistance to high temp dry air and coolants. Good oil and fuel resistance. Limited low temp flexibility.	Coolant resistant seals and cylinder liner seals.
Polytetrafluoroethylene (PTFE / Teflon®)	-200°C to +250°C	Lowest friction co-efficient and has self-lubricating capabilities. Chemically Inert PTFE resists the most aggressive organic and inorganic chemicals and solvents over a broad temperature range.	Air conditioning, thermal management, fuel injection and exhaust gas recirculation.
Ethylene Acrylate (AEM / Vamac®) and Polyacrylate (ACM)	AEM: -25°C to +170°C ACM: -32°C to +149°C	Outstanding resistance to oils, automotive transmission fluids (ATF) and power steering fluids. Good resistance to high temp, wear, oxidation and ozone. Limited resistance to water, steam, fuel, gasoline and automotive brake fluids.	Pump-to-case seals, clutch seals, transmission cover seals and fluid transfer seals.
Ethylene Propylene (EPDM, EPM, EP, EPR)	Peroxide Cure: -60°C to +150°C Sulphur Cure: -40°C to +135°C	Outstanding resistance to ozone, weathering, steam and hot water. Excellent resistance to brake fluids, ketones, alcohols and other aggressive solvents. Not recommended for use in petroleum fluids.	Battery seals, sensor seals, bumpers, isolators, sleeves, water / coolant resistant seals, radiator pump seals, environmental seals and cylinder liner seals.
Fluorocarbon (Viton®, FKM, FPM)	-25°C to +204°C (Special compounds available: -40°C to +230°C)	Wide-spectrum chemical resistance and broad temperature range. Excellent high temp resistance. Commonly used in fuels and oils. Bio fuel and coolant resistant versions are also available. Good ozone and weathering resistance. Low resistance to brake fluids.	Cover seals, cylinder liner seals, sensor seals, cap seals, oil pan seals and steering system seals.
Fluorosilicone (FVMQ)	-60°C to +177°C	Relatively wide temperature range as silicone with good low temp capability and excellent chemical resistance. Good resistance to petroleum oils, hydrocarbon fuels, lubricants and petroleum-based greases. Not recommended for dynamic applications.	Sensor seals, cap seals and compressed natural gas resistant seals.
Hydrogenated Nitrile (HNBR, HSN)	-40°C to +150°C	Similar to nitrile with improved high temperature capabilities and ozone resistance. Excellent resistance to thermo-oxidative ageing. Excellent resistance to petroleum-based fluids. Excellent mechanical properties and wear resistance. Compatible with HFC refrigerants, oil soluble and water soluble substances. HNBR with low ACN content is not recommended for gasoline, CFC refrigerants and aggressive solvents.	Shock absorber seals, oil pan and cover seals, power steering seals, water pump seals, cap seals, sensor seals, bumpers, isolators, sleeves, under bonnet applications, HFC refrigerant resistant seals and oil filter seals.
Perfluoroelastomers (FFKM)	-25°C to +316°C	Extreme high temp capability. Excellent resistance to the broadest range of chemicals. Limited low temp flexibility. Not compatible with fluorinated refrigerants or other fluorinated chemicals.	Turbo charger seals and exhaust system seals.
Silicone (VMQ,PVMQ,PMQ)	Standard Compound: -55°C to +204°C Special Compounds: -100°C to +204°C	Excellent choice for environmental seals. Wide temperature range and good resistance to dry heat. Good ozone and weather resistance as well as good insulating properties. Relatively limited wear resistance and low resistance to fuels and oils. Not recommended for dynamic applications.	Cover seals, sensor seals, battery seals, cap seals, bumpers, isolators, sleeves, steering system seals, anti-drain back valves, oil filter seals and environmental seals.

This table provides a general guide on material recommendations. Eastern Seals (UK) Ltd and UK Seals & Polymers Ltd continues to source new materials in accordance with Automotive customer specifications in conjunction with our manufacturers around the world. The Group may source their products from a variety of Quality Approved Suppliers and the data shown should not be relied upon by any purchaser without verification of material source.

We appreciate that not everyone requires the same thing and that flexibility is the key; so whether you prefer to deal with us over the phone, by e-mail or fax we are ready and prepared to help.

You tell us what you want and we will take care of the rest.

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