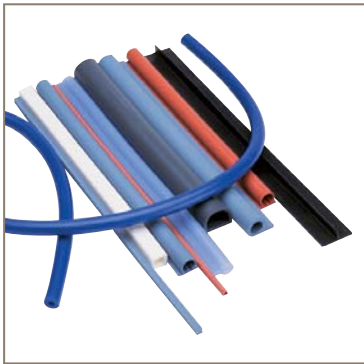




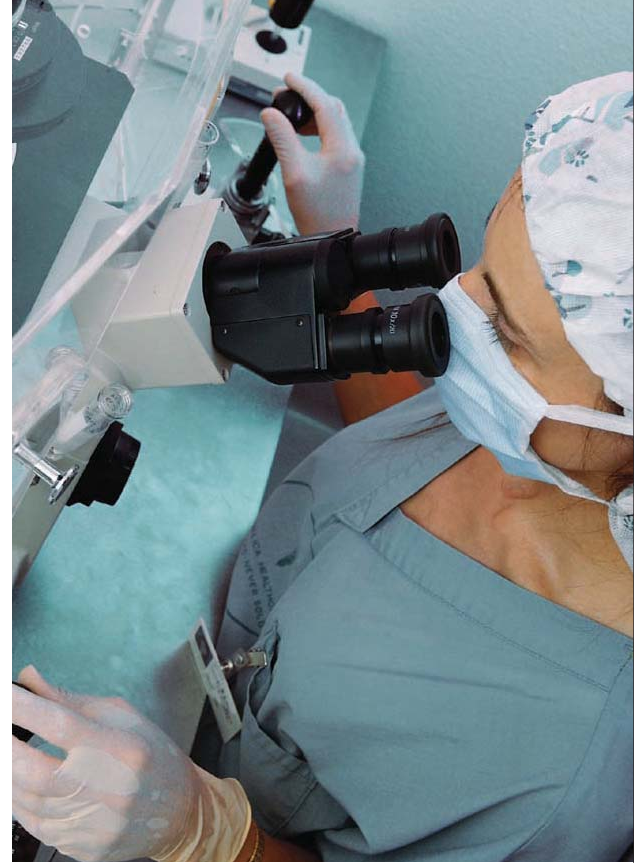
aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



Sealing Solutions for Life Sciences



ENGINEERING YOUR SUCCESS.



Sealing Solutions for Life Sciences

Parker develops and manufactures engineered sealing solutions – technologically advanced sealing devices and materials. Our sealing products have our unique combination of experience and innovation built right in, and we're able to supply them quickly and cost effectively.

Today's sealing challenges demand innovative solutions, and nobody knows innovation better than Parker.

Seals for life sciences have a variety of sealing challenges for critical components and processes. Our seals are used in medical devices, diagnostic equipment, drug delivery, pharmaceutical manufacturing and bio-tech. Typical applications include:

- closure seals on plastic devices
- diaphragms and bellows
- door seals, both small and large
- medical grade tubing
- sanitary gaskets
- small container seals
- sterilizer gaskets
- stoppers
- syringe tips
- vial cap seals

Parker has developed a wide range of specialty elastomers to satisfy the unique sealing needs for life sciences, including materials compliant to FDA and USP Class VI standards.

Life Sciences Product Overview



O-Rings

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. Parker O-rings can be molded in a wide range of elastomer compounds ranging from basic neoprene to perfluorinated materials called Parofluor ULTRA.



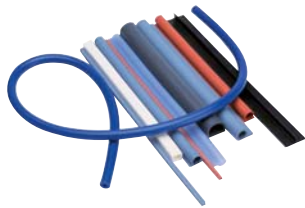
Custom Molded or Machined Shapes

Custom molded or machined seals are available in a virtually infinite range of shapes and cross sections, often used as stoppers and diaphragms. Parker designs and manufactures engineered elastomeric shapes, both homogeneous and inserted, for sealing systems and isolation applications.



Miniature Elastomer Seals

Parker is able to create high quality and consistent biocompatible precision elastomeric medical components using materials that are in compliance to USP class VI and ISO 10993. This process enables the creation of smooth surfaces and over molding with materials such as plastic, metal and other substrates.



ParFab™ Extruded Profiles

Parker offers a wide variety of standard extruded profiles in many configurations, such as; solid and hollow-O, solid and hollow-D, U-channel, rectangular, solid and hollow square and hollow-dart. These products can be shipped on spools in long continuous lengths.



ParFab Spliced/Fabricated Products

These products are manufactured using a hot vulcanization process to provide spliced hollow and solid rings and custom gaskets from either standard or custom cross-sections. ParFab parts can be fabricated into low closure force seals, large diameter O-rings, non-standard O-rings and custom profiles.



Standard and Custom Face Seals

Parker offers an array of standard and custom face seals for static and some dynamic applications. Manufactured to meet the demands of irregular groove dimensions and wide tolerancing on mating parts, they are available in a range of materials for critical vibration and sealing requirements.



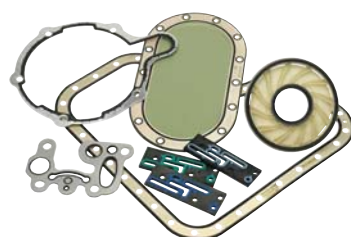
PTFE FlexiSeals®

Our full line of spring energized PTFE lip seals are used on rod, piston, face and rotary sealing applications. FlexiSeals are typically used in areas where elastomeric seals cannot meet the frictional, temperature or chemical resistance requirements of the application.



Metal Seals and Gaskets

Parker provides metal seals in a variety of base metals and plating finishes, available as resilient metal seals and metal crush gaskets in a wide range of sizes and shapes. Metal seals are ideal for high-temperature, high-vacuum, broad chemical resistance and low extractable applications.



Composite Seals

Parker's composite seals are rubber-to-metal, or rubber-to-plastic custom engineered solutions. These seals allow for the integration of multiple components with unique sealing geometries which provide ease of assembly and reliable service, resulting in a lower overall cost.

Product Innovation

Today's sealing challenges demand innovative solutions, and nobody knows innovation better than Parker. Drawing from over six decades of engineering, material formulation and manufacturing experience, we continually develop new products for your evolving sealing needs.

Sealing Systems

Our expertise allows us to find unique solutions to your sealing challenges, without sacrificing design integrity. By integrating the seal with its mating components, we can reduce inventory and make end products easier to assemble – that's just one way we add value for the customer.

Application Engineering

Our team of application engineers can help you find the most reliable, cost-effective sealing solution for your application. These engineers are experts, combining decades of experience in real-world sealing with a full complement of technology-driven design tools.

Advanced Computer Simulation

Utilizing advanced non-linear Finite Element Analysis (FEA) software our engineers can perform extremely accurate virtual simulations of performance based on actual physical

test data. These simulations eliminate the need for multiple iterations of costly prototype tooling, and dramatically reduce development lead times. They also ensure first-time selection of the best material and geometry for your application.

Quality Initiatives

Quality isn't just a buzzword at Parker. It's a culture, based on employee empowerment and continuous improvement. Our manufacturing facilities are registered to ISO 9001, cGMP, ISO 14001, and we're constantly striving to improve customer satisfaction.

Worldwide — Where You Need Us

Around the corner or around the globe, Parker is there with engineered solutions to tough sealing problems. Your local Parker life sciences market specialist provides a single point of contact for local sealing support. And our worldwide headquarters is the hub of an established worldwide network of over 300 distributor and service center locations. This network – and the global sales and engineering support it provides – means you can always get quality products when and where you need them. It also means that sound advice from a Parker sealing expert is never far away.

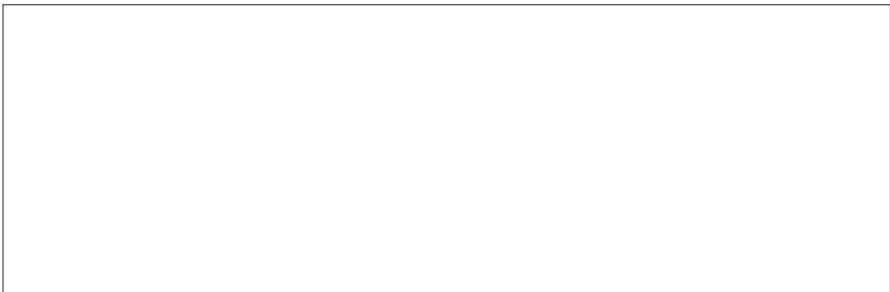


FDA and USP Class VI Seal Compounds

O-rings / Custom Molded	Extruded Profiles	Material	Hardness (Shore A)	Color	Comments
ETHYLENE PROPYLENE – materials with temperature range -70°F to 250°F					
X	X	E7001-60	60	Black	FDA
X		E1028-70	70	Black	FDA
X	X	E7736-70	70	Black	FDA
X		E3609-70	70	Black	FDA, USP Class VI
	X	E7925-70	70	Black	FDA
	X	EJ590-70	70	White	FDA, USP Class VI
	X	E7871-75	75	Black	FDA
	X	E7126-80	80	Black	FDA
FLUOROCARBON – materials with temperature range -15° to 400°F					
X		V0680-70	70	Red	FDA
X	X	V7108-70	70	White	FDA
X		V1274-80	80	Black	FDA
PERFLUORINATED – materials with temperature range -5° to 608°F					
X		FF200-75	75	Black	FDA
X		FF350-75	75	White	FDA, USP Class VI
X		FF500-75	75	Black	FDA
X		V8545-75	75	Black	FDA
X		V8562-75	75	White	FDA
NITRILE - materials with temperature range -30° to 225°F					
X		N1219-60	60	Black	FDA
X		NJ253-70	70	Black	FDA
X		N1220-70	70	Black	FDA
X		N1069-70	70	Black	FDA
	X	N7068-70	70	Black	FDA
X		N0508-75	75	Black	FDA
	X	N7219-80	80	Black	FDA
SILICONE - materials with temperature range -60° to 450°F					
X		S0802-40	40	White	FDA
	X	S7577-40 ⁽¹⁾	40	Translucent	USP Class VI
	X	S7317-40	40	Translucent	FDA
	X	S7442-40	40	Rust	FDA
X	X	S7561-40	40	White	FDA
	X	S7433-50 ⁽¹⁾	50	White	USP Class VI
	X	S7489-50 ⁽¹⁾	50	Translucent	USP Class VI
	X	S7318-50	50	White	FDA
	X	S7405-50	50	Translucent	FDA
	X	S7435-50	50	Rust	FDA
	X	S7469-50	50	Red	FDA
X		S1538-55	55	Translucent	FDA, USP Class VI
	X	S7530-55 ⁽¹⁾	55	Translucent	USP Class VI
	X	S7311-55	55	Rust	FDA
	X	S7396-55	55	White	FDA
X		S0317-60	60	Rust	FDA, USP Class VI

(1) Platinum cured silicone rubber
(2) Hardness of compound is Shore D

O-rings / Custom Molded	Extruded Profiles	Material	Hardness (Shore A)	Color	Comments
SILICONE - materials with temperature range -60° to 450°F (continued)					
	X	S7490-60 ⁽¹⁾	60	Translucent	USP Class VI
	X	S7349-60	60	Red	FDA
	X	S7350-60	60	Green	FDA
	X	S7351F-60	60	White	FDA
	X	S7354-60	60	Blue	FDA
	X	S7355-60	60	White	FDA
	X	S7359-60	60	Black	FDA
	X	S7413-60	60	Rust	FDA
	X	S7526-60	60	Yellow	FDA
X		S1138-70	70	Rust	FDA
	X	S7387-70 ⁽¹⁾	70	Translucent	USP Class VI
	X	S7492-70 ⁽¹⁾	70	Translucent	USP Class VI
	X	S7314F-70	70	Black	FDA
	X	S7494-70	70	Red	FDA
	X	S7525-70	70	White	FDA
X		S0355-75	75	Rust	FDA
	X	S7386F-75	75	White	FDA
	X	S7383-80 ⁽¹⁾	80	White	USP Class VI
	X	S7300F-80	80	White	FDA
	X	S7309-80	80	Black	FDA
	X	S7313-80	80	Blue	FDA
	X	S7548-80	80	Blue	FDA
	X	S7568-80	80	Red	FDA
THERMOPLASTIC - materials with temperature range -76° to 275°F					
	X	J7976-45	45	Beige	USP Class VI
	X	J7976-55	55	Beige	USP Class VI
	X	J7737-55	55	Black	USP Class VI
	X	J7969-55	55	Beige	FDA
	X	J7813-55	55	Black	FDA
	X	J7902-64	64	Beige	USP Class VI
	X	J7974-64	64	Black	USP Class VI
	X	J7959-64	64	Beige	FDA
	X	J7967-64	64	Black	FDA
	X	J7876-73	73	Beige	USP Class VI
	X	J7975-73	73	Black	USP Class VI
	X	J7267-73	73	Beige	FDA
	X	J7968-73	73	Black	FDA
	X	J7970-80	80	Beige	FDA
	X	J7907-87	87	Beige	USP Class VI
	X	J7971-87	87	Beige	FDA
	X	J7977-40D	40 ⁽²⁾	Beige	USP Class VI
	X	J7972-40D	40 ⁽²⁾	Beige	FDA
	X	J7973-50D	50 ⁽²⁾	Beige	FDA



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