



# TechSeal Sealing Solutions for Medical & Healthcare Applications

Catalog TSD 5417B1-USA



ISO 9001 / QS 9000  
Certified



### Parker - The Preferred Source for USP Class VI and FDA Static Sealing Solutions. . .

Parker Hannifin's TechSeal Division offers a wide range of USP Class VI and FDA elastomeric materials for the *Medical & Healthcare Industry*. These materials can be supplied as precision extruded and cut seals, long-length precision extruded profiles, or precision extruded and spliced rings or gaskets.

### USP Class VI Materials

TechSeal's offering of United States Pharmacopeia (USP) XXII Class VI materials have been tested to (USP) XXII Class VI requirements, which include system toxicity and intracutaneous toxicity. TechSeal products are sold for use in non-implant devices. It is the customer's responsibility to determine the suitability of TechSeal products for each specific application, and to comply with all applicable statutory, regulatory and healthcare industry requirements and/or standards for efficacy, labeling, safety and testing. TechSeal's USP Class VI materials and products have Controlled Batch Identification (CBI) traceability for each product lot and are produced using Good Manufacturing Practices (GMP).



**Specify TechSeal  
USP Class VI  
and FDA Silicone  
Sealing Solutions!**

### FDA "White Listed" Materials

TechSeal's FDA "White Listed" materials are formulated exclusively from ingredients listed in Federal Regulation Title 21 "Food and Drugs," CFR 177.2600, "Rubber Articles Intended for Repeated Use." It is important to note that the FDA does not "approve" rubber compounds. TechSeal compounds food-grade materials from the FDA list of ingredients.



### Product Types

TechSeal fabricates sealing solutions for medical and healthcare applications in the following three product categories:

#### **Extruded and precision cut washers, discs, sleeves, and custom profiles**

Outside diameters from .030" to 19.000"  
Axial thicknesses .030" and up

#### **Extruded cord tubing and special profiles**

Outside diameters from .030" to 1.500"

#### **Spliced / fabricated rings and gaskets**

Cross-sections from .030" to 1.500"  
Spliced I.D. 2.500" and up

### TechSeal Thermoplastic Elastomer Compounds Meeting USP Class VI Requirements

#### Typical Physical Properties

Compound	ASTM	J7919-38	J7976-45	J7976-55	J7737-55	J7902-64	J7974-64	J7876-73	J7975-73
Material		C-Flex	TPE	TPE	TPE	TPE	TPE	TPE	TPE
Color		Opaque	Beige	Beige	Black	Beige	Black	Beige	Black
Durometer +/- 5	D2240	38	45	55	55	64	64	73	73
Tensile, psi	D412	1081	435	680	680	1000	1000	1230	1230
Elongation, %	D412	725	300	400	400	440	440	460	460
Tear	D412	146	120	125	125	140	140	159	159
Specific Gravity	D297	.90	.97	.97	.97	.97	.97	.98	.98
Compression Set *	D395	13	13	23	23	23	23	24	24

  

Compound	ASTM	J7907-87	J7977-40D
Material		TPE	TPE
Color		Beige	Beige
Durometer +/- 5	D2240	87	40D
Tensile, psi	D412	2300	2200
Elongation, %	D412	530	525
Tear	D412	278	359
Specific Gravity	D297	.96	.95
Compression Set *	D395	32	41

**Other compounds available upon request. Contact the TechSeal Division for further information.**

\* Compression Set 168 Hrs. @ 23°C

### TechSeal Silicone Compounds Meeting USP Class VI Requirements

#### Typical Physical Properties

Compound	ASTM	S7577-40	S7433-50	S7489-50	S7530-55	S7490-60	S7387-70	S7492-70	S7383-80
Material		Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone
Color		Translucent	White	Translucent	Translucent	Translucent	Translucent	Translucent	White
Durometer +/- 5	D2240	40	50	50	55	60	70	70	80
Tensile, psi	D412	850	1100	1100	1000	1100	1000	1200	900
Elongation, %	D412	700	750	700	350	650	450	500	250
100% Modulus, psi	D412	90	125	125	150	200	350	300	500
Specific Gravity	D297	1.10	1.14	1.10	1.13	1.16	1.16	1.17	1.20
Compression Set *	D395	20	30	30	30	40	30	25	40

\* Compression Set 22 Hrs. @ 177°C

### TechSeal Organic Compounds Meeting USP Class VI Requirements

#### Typical Physical Properties

Compound	ASTM	E7987-70
Material		EPDM
Color		White
Durometer +/- 5	D2240	70
Tensile, psi	D412	1600
Elongation, %	D412	150
100% Modulus, psi	D412	800
Specific Gravity	D297	1.28
Compression Set *	D395	10
Curative		Peroxide

**Other compounds available upon request. Contact the TechSeal Division for further information.**

\* Compression Set 22 Hrs. @ 70°C

### TechSeal Thermoplastic Elastomer Compounds Made With FDA "White Listed" Ingredients

#### Typical Physical Properties

Compound	ASTM	J7969-55	J7813-55	J7959-64	J7967-64	J7267-73	J7968-73	J7970-80	J7971-87
Material		TPE	TPE	TPE	TPE	TPE	TPE	TPE	TPE
Color		Beige	Black	Beige	Black	Beige	Black	Beige	Beige
Durometer +/- 5	D2240	55	55	64	64	73	73	80	87
Tensile, psi	D412	640	730	1000	1000	1230	1230	1640	2300
Elongation	D412	330	380	400	400	460	520	520	530
Tear	D412	108	108	140	140	159	159	194	278
Specific Gravity	D297	.97	.97	.97	.97	.98	.98	.97	.96
Compression Set *	D395	23	24	23	23	24	23	29	29

  

Compound	ASTM	J7972-40D	J7973-50D
Material		TPE	TPE
Color		Beige	Beige
Durometer +/- 5	D2240	40D	50D
Tensile, psi	D412	2650	4000
Elongation, %	D412	600	600
Tear	D412	69	514
Specific Gravity	D297	.95	.95
Compression Set *	D395	32	41

**Other compounds available upon request. Contact the TechSeal Division for further information.**

\* Compression Set 168 Hrs. @ 23°C

## TechSeal Silicone Compounds Made With FDA “White Listed” Ingredients

### Typical Physical Properties

Compound	ASTM	S7317-40	S7442-40	S7561-40	S7318-50	S7405-50	S7435-50	S7469-50	S7311-55
Material		Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone
Color		Translucent	Rust	White	White	Translucent	Rust	Red	Rust
Durometer +/- 5	D2240	40	45	40	50	50	50	50	55
Tensile, psi	D412	1100	1000	1000	1100	1100	1000	1100	1100
Elongation, %	D412	400	300	450	325	400	300	350	300
100% Modulus, psi	D412	100	80	150	150	125	150	150	300
Specific Gravity	D297	1.14	1.15	1.12	1.17	1.17	1.17	1.19	1.22
Compression Set *	D395	30	30	30	25	25	30	20	20

  

Compound	ASTM	S7396-55	S7349-60	S7350-60	S7351F-60	S7354-60	S7355-60	S7359-60	S7413-60
Material		Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone
Color		White	Red	Green	White	Blue	White	Black	Rust
Durometer +/- 5	D2240	55	60	60	60	60	60	60	60
Tensile, psi	D412	925	1000	1000	950	1000	1000	1100	1000
Elongation, %	D412	250	300	300	200	300	300	350	200
100% Modulus, psi	D412	300	300	400	400	350	300	200	350
Specific Gravity	D297	1.26	1.26	1.29	1.29	1.25	1.34	1.25	1.26
Compression Set *	D395	22	30	25	20	25	20	20	30

  

Compound	ASTM	S7526-60	S7314F-70	S7494-70	S7525-70	S7386F-75	S7300F-80	S7309-80	S7313-80
Material		Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone
Color		Yellow	Black	Red	White	White	White	Black	Blue
Durometer +/- 5	D2240	60	70	70	70	75	80	80	80
Tensile, psi	D412	850	900	900	850	900	900	800	800
Elongation, %	D412	300	150	150	150	100	100	100	100
100% Modulus, psi	D412	300	450	500	525	700	800	500	700
Specific Gravity	D297	1.23	1.30	1.35	1.35	1.36	1.40	1.42	1.40
Compression Set *	D395	25	25	25	20	20	20	25	30

  

Compound	ASTM	S7548-80	S7568-80
Material		Silicone	Silicone
Color		Blue	Red
Durometer +/- 5	D2240	80	80
Tensile, psi	D412	800	825
Elongation, %	D412	100	100
100% Modulus, psi	D412	600	700
Specific Gravity	D297	1.42	1.39
Compression Set *	D395	25	25

**Other compounds available upon request. Contact the TechSeal Division for further information.**

\* Compression Set 22 Hrs. @ 177°C

## TechSeal Organic Compounds Made With FDA “White Listed” Ingredients

### Typical Physical Properties

Compound	ASTM	E7110-55	E7190-60	E1257-70	E7752-70	E7911-70	E7871-75	E7126-80	E7885-90
Material		EPDM	EPDM	EPDM	EPDM	EPDM	EPDM	EPDM	EPDM
Color		Black	Black	Black	Black	Black	Black	Black	Black
Durometer +/- 5	D2240	55	60	73	70	70	75	78	90
Tensile, psi	D412	1400	1400	2500	1600	1500	1900	2350	1900
Elongation, %	D412	600	300	175	400	200	200	200	100
Specific Gravity	D297	1.16	1.17	1.16	1.14	1.32	1.17	1.24	1.24
Compression Set *	D395	25	20	10	45	15	15	20	30
Curative		Peroxide	Peroxide	Peroxide	Sulfur	Peroxide	Peroxide	Peroxide	Peroxide

  

Compound	ASTM	V7108-70	V1164-75	N7068-70
Material		Fluorocarbon	Fluorocarbon	Nitrile
Color		White	Black	Black
Durometer +/- 5	D2240	70	75	70
Tensile, psi	D412	2000	2000	1500
Elongation, %	D412	200	175	400
Specific Gravity	D297	2.11	1.84	1.62
Compression Set *	D395	25	15	50
Curative		Bisphenol	Bisphenol	Sulfur

**Other compounds available upon request. Contact the TechSeal Division for further information.**

\*EPDM Materials - Compression Set 22 Hrs. @ 70°C  
Fluorocarbon Materials - Compression Set 22 Hrs. @ 175°C  
Nitrile Materials - Compression Set 22 Hrs. @ 100°C

**TechSeal offers a wide variety of custom extruded profiles**



## Features Advantages Benefits

- USP Class VI and FDA "White Listed" materials readily available
- Durometers from 40 Shore A to 50 Shore D
- Complete batch traceability for all production
- White, translucent or colored materials available
- Sealing grade materials for long term sealing solutions
- Standard ID/OD parts with no tooling costs
- Application engineering assistance
- Finite Element Analysis (FEA) assisted design
- Parts fabricated without any flash or parting lines
- Outside diameters from .030" to 19.000"
- Maximum sealing surface contact area can be obtained due to flat smooth surfaces with no "hourglassing" on the sides
- Precision tolerances
- 1-2 weeks sample lead times
- Finished goods washed in our Ultra High Purity (UHP) cell
- State-of-the-art equipment to ensure consistent processes
- Certifications supplied with each shipment
- ISO 9001 and QS-9000 compliant
- Parts produced using Good Manufacturing Practices (GMP)
- Quotations furnished within 24 hours
- Millions of parts shipped daily worldwide
- Global field sales force and distribution network

### Extruded & Precision Cut

These parts have been manufactured for a large variety of high volume applications for over 35 years. Our unique process for producing precision extruded and cut static seals provides customers tremendous latitude in design flexibility, and eliminates tooling charges for any ID/OD combination from .030" to 19.000" outside diameters. TechSeal uses only "sealing grade" material formulations with the highest possible percentage of polymer for the most effective long-term sealing solutions.



Extruded and cut products are usually supplied as ID/OD tubing type cross-sections, but can also be supplied in a variety of different cross-sections such as square, rectangular and triangular. Custom cross-sections are also available.

### ParFab™ Extruded Profiles



These profiles are typically used for fabrication into spliced rings, 4-corner spliced picture frame gaskets or custom parts cut to specific lengths. They can be supplied in bulk footage with or without pressure sensitive adhesive (PSA). TechSeal offers a wide variety of standard extruded profiles in many configurations, such as: solid & hollow-O, solid & hollow-D, U-channel, rectangular, solid & hollow square and hollow-dart configurations.

### ParFab™ Spliced/Fabricated Parts

These parts are manufactured utilizing a hot vulcanization process to provide spliced rings and custom gaskets from either "standard" or "custom" cross-sectional profiles. They offer an ideal, cost-effective sealing solution for many applications. ParFab parts can be fabricated into low-closure force seals, large diameter profiles that cannot be molded, or hollow o-rings, non-standard solid o-rings, and other extruded profiles with spliced inside diameters larger than 2.500."



*For additional information about Parker's sealing products for Medical and Healthcare applications, contact the TechSeal Division at (864) 573-7332.*

# TOTAL inPHorm

Take the guesswork out of seal design and material selection – ask for a copy of Parker's **Total inPHorm™** seal design and material selection software. Total inPHorm boasts many enhanced features, including an expanded media compatibility section and custom sizing capabilities that allow the user to design application-specific glands and seals. The software automatically cross-references thousands of part numbers, and recommends materials based on the requirements of SAE, MIL and many other standards. With a few mouse clicks, Total inPHorm takes the seal designer from concept to completion. In addition to the popular static face sealing package, Total inPHorm contains four other



standalone packages for hydraulic and pneumatic sealing applications, o-rings, standard composite sealing products and EMI shielding and thermal management products. For more information, or to order a free copy of Total inPHorm, call 1-800-C-PARKER.



**TechSeal**  
**Where Imagination Becomes Reality!**

Your Authorized Parker Seal Distributor:

Parker Hannifin Corporation  
TechSeal Division  
3025 West Croft Circle  
Spartanburg, SC 29302  
Telephone: (864) 573-7332  
FAX: (864) 583-4299  
www.techseal.com

**Innovative Sealing Solutions**

ISO 9001/QS-9000  
Certified

**Parker**  
Seals

2/02-3M-AP