

GASKETS



GASKETS

Compounds

Viton™ compound material has excellent mechanical, chemical and heat resistance properties. The formulation is a superior blend that is especially good for hard vacuum service because of its high molecular weight and low gas permeability. It has been used to -54°C (-65°F) in some static seals. Flexibility, 18°C (64°F) to 200°C (392°F) under continuous duty and will take 316°C (600°F) for short periods of time.

Teflon®/Teflon® Envelope material has been a standard in the industry and is a registered trademark of DuPont. Teflon® fluoropolymer has excellent performance properties in almost all environmental conditions with excellent resistance to weather, heat, steam, abrasion, acid, petroleum oil and vegetable oil. This products made with Teflon® fluoropolymer are unsurpassed in the industry for sanitation requirements and are in compliant with FDA and USP VI criteria. Operating temperature ratings, -110°F to 450°F.

Silicone material is known for its standard of purity and non-leaching characteristics. Its ability to withstand many chemicals and combinations of chemicals is the reason it is so popular with the pharmaceutical industry. Silicone has excellent low temperature flexibility - to -73,33°C (-100°F) in dry heat. 204°C (400°F) is the maximum for continuous duty with 316°C (600°F) possible for short periods of time. Rated at 26,66oC to 204oC (-80°F to 400°F) .
* short term 316°C (600°F)

EPDM (ethylene propylene diene monomer rubber) is excellent for hot water and steam service up to 163°C (325°F). It is very abrasion resistant and has excellent resistance to ozone, sunlight or weather and de-ionized water. EPDM also has good tensile strength and good resistance to mild acids, alkalies and alcohols. Rated -54°C (-65°F) to 176°C (350°F) (short term to 204°C (400°F).



SILVERBACK™ is the strongest compound available, outperforming standard Teflon® gaskets, especially in demanding pharmaceutical applications, lasting up to five times longer. Its exceptional strength prevents system downtime by eliminating cold flow creep, making it ideal for sanitary steam pipe connections in extreme conditions (-20°F to 450°F). Available in standard sizes (1/2" to 12"), SILVERBACK™ offers superior creep resistance, minimal thermal expansion, excellent chemical resistance, non-stick surfaces, and stability under S.I.P. conditions. It meets high pharmaceutical standards, including USP Class VI, Cytotoxicity Criteria, and ASME-BPE Standards.

Orca Encapsulated Gasket is made from EPDM that has been chemically bonded to a thin layer of PTFE, encapsulating the EPDM.

This combination of materials gives the gasket the chemical resistance of PTFE while greatly reducing the traditional problems associated with PTFE/Teflon® hygienic seals.

- Improved Resistance to Cold Flow & Creep
- Improved Flexibility
- Improved Sealing Performance
- Ultra-Low Extractables
- Superior Chemical Resistance
- No Pigmentation
- No Intrusion
- Non-Stick Surface
- FDA and USP Class VI Compliant

Type I PTFE
Gasket

Type III
Envelope
Gasket

ORCA™
Encapsulated
Gasket



GASKETS

Special EPDM Gasket for WFI

The 2107LE EPDM Gaskets are compatible with CIP, SIP, WFI and Processing areas.

- Lower Extractables
- 10X less than conventional formulations
- Longer Service Life
- Little to no wear after 500 pure steam exposure cycles (ASME BPE Appendix K)
- Better dimensional stability
- Little to no intrusion into the process stream
- Easier Maintenance
- 2107LE EPDM gaskets disassemble after long periods of exposure with little effort (static friction) and no residue on fittings
- 2107LE supports the weight of equipment better and holds tubing in alignment
- better than other compounds, all without cracking or tearing



All Biopharmaceutical Certifications and More:

- FDA (21CFR177.2600)
- USP Biocompatibility (USP <87>, USP <88> Class VI)
- Free of ADI, Latex, REACH, RoHs (I and II), ICHQ3 Solvents, etc

Worldwide Certifications:

Fully synthetic, 2107LE complies with a multitude of international regulations, standards and customer requirements (e.g. FDA, USP, EU, EP, REACH, RoHS I and II, ICH Q3D Residual Solvents and Elemental Impurities, Free of ADI, Latex, BPA, Phthalates, etc.). 2107LE also meets global requirements for biopharmaceutical processing.

Performance Designed and Tested:

2107LE has better tensile strength and modulus:

Key requirements when it comes to piping alignment and equipment support. This translates into less overall compression of the joint, maintaining a flush connection for good cleaning and draining independent of seal loading.

2107LE also has better compression set:

- Required for a more consistent seal between the gasket and mating surfaces of the ferrules during the course of use.

2107LE also has an outstanding operating temperature range:

Glass Transition Temperature (T_g) of -50°C and upper limit above 325°C means more latitude in processing than ever before.

2107LE also uses Newman's proprietary gasket design:

- This prevents crevices or excessive intrusion both when gaskets are under-tightened and over-tightened. Less risk of entrapped materials around and between the components of the piping connection. Form and fit are unchanged

Lower Extractables:

Property	2107LE
Shore A Durometer, points	77
Tensile Strength, psi (MPa)	2900 (20)
Ultimate Elongation %	180
100% Modulus, psi (MPa)	800 (5.5)
Compression Set, %	8
22 hrs@212°F (100°C, typical)	325 (163)3
Max Operating Temperature, °F (°C)	58 (-50)3
Min Operating Temperature, °F (°C)	See
Compliance	attached

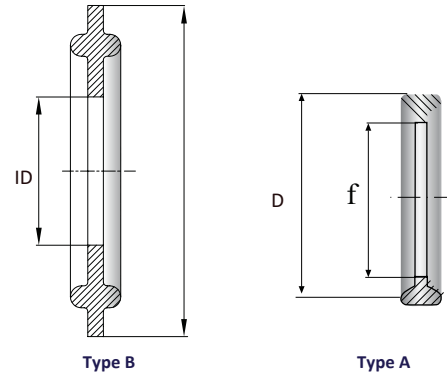
SAMPLE ID	EX-TRACTION TIMES	SOLVENT	EXTRACTABLE CONTENT mg/in.2	REQUIRE-MENT mg/in.2 max.	PASS/ FAIL
2107LE	First 7 hrs.	Distilled Water	0.1	20	PASS
2107LE	Next 2 hrs.	Distilled Water	0.3	1	PASS
2107LE	First 7 hrs.	Hexane	7.7	175	PASS
2107LE	Next 2 hrs.	Hexane	1.5	4	PASS

GASKETS

Tri-Clamp Standard Style

Nominal Size In.	Type		OD		Ordering Code
	in.	mm	in.	mm	
1/2"	0.38	9.60	0.86	21.80	15-TC.*
3/4"	0.63	16.00	0.86	21.80	20-TC.*
1.0" A	0.90	22.90	1.34	34.00	24-TC.*
1.0"	0.88	22.30	2.00	50.50	25-TC.*
1 1/2"	1.38	35.30	2.00	50.80	38-TC.*
2.0"	1.88	47.70	2.52	64.00	51-TC.*
2 1/2"	2.38	60.40	3.05	77.50	63-TC.*
3.0"	2.88	73.10	3.58	91.00	76-TC.*
4.0"	3.84	97.60	4.67	119.00	100-TC.*
6.0"	5.79	123.50	6.10	167.00	150-TC.*

*For choosing materials, see the table below



D(OD)	FDA Certified	FDA CLASS VI Certified
Buna-N	BW	
EPDA Black	EP	EP.RX
EPDM White	EPW	EPW.RX
Silicone Platinum		SX.RX
Silicone Peroxide	SP	SP.RX
Viton Black	V	V.RX
Viton White	VW	VW.RX
PTFE	TF	TF.RX
Envelope PTFE/EPDM	GREP	GREP.RX
Envelope PTFE/FKM	GRV	GRV.RX
Envelope PTFE/FKM (White)	GRVW	GRVW.RX
Orca FDA-Class VI (EPDM Filled)		TBE.RX
Orca FDA-Class VI (Viton Filled)		TBV.RX
Silverback		SB.RX
EPDM LE (Special Compound For WFI)		EPLE.RX



Ordering Example

Description	Nominal Size In.	Ordering Code
Type TCS	1.0"	15-TCS/V/60M

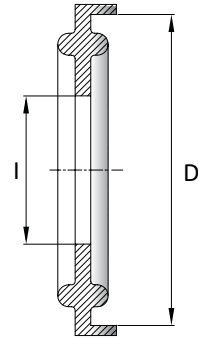
*Material and Surface are including to the ordering code

GASKETS

Tri-Clamp Flanged Style

Nominal Size In.	I(ID)		D(OD)		Ordering Code
	in.	mm	in.	mm	
1.0"	0.88	22.30	2.00	50.50	25-TC.L.*
1 1/2"	1.38	35.30	2.00	50.50	38-TC.L.*
2.0"	1.88	47.70	2.52	64.00	51-TC.L.*
2 1/2"	2.38	60.40	3.05	77.50	63-TC.L.*
3.0"	2.88	73.10	3.58	91.00	76-TC.L.*
4.0"	3.84	97.60	4.67	119.00	100-TC.L.*
6.0"	5.79	123.50	6.10	167.00	150-TC.L.*
8.0"	7.78	197.60	8.56	217.40	200-TC.L.*
10"	9.77	248.20	10.66	271.00	250-TC.L.*
12"	11.81	300.00	12.56	338.10	300-TC.L.*

*For choosing materials, see the table below



D(OD)	FDA Certified	FDA CLASS VI Certified
Buna-N	BW	
EPDA Black	EP	EP.RX
EPDM White	EPW	EPW.RX
Silicone Platinum		SX.RX
Silicone Peroxide	SP	SP.RX
Viton Black	V	V.RX
Viton White	VW	VW.RX
PTFE	TF	TF.RX
Envelope PTFE/EPDM	GREP	GREP.RX
Envelope PTFE/FKM	GRV	GRV.RX
Envelope PTFE/FKM (White)	GRVW	GRVW.RX
Orca FDA-Class VI		TB.RX



Ordering Example

Description	Nominal Size In.	Ordering Code
Type TCS	1.0"	15-TCS/V/60M

*Material and Surface are including to the ordering code

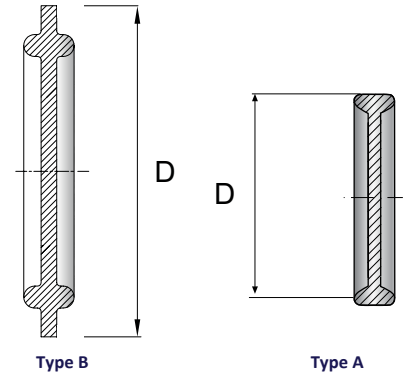
GASKETS

Tri-Clamp Gauge Guard Isolator

The Gauge Guard Isolator seals protect expensive stainless steel diaphragms and instruments from damage without affecting performance. By combining a quality hygienic seal with a membrane, the Gauge Guard Isolator hygienic seal isolates corrosive solutions from the stainless steel diaphragm. This is a necessary and cost-effective step in ensuring long life and accurate results from your gauges.

All the Benefits in a Gauge Guard Hygienic Seal:

- Seal membrane protects stainless steel diaphragm from corrosive solutions.
- Will not interfere with gauge operation or accuracy.
- Works with most industry-standard instruments.
- Helps extend the life of gauges.



Nominal Size In.	D(OD)		Ordering Code
	in.	mm	
3/4"	0.86	21.80	20-TCP.*
1.0"	2.00	50.50	25-TCP.*
1 1/2"	2.00	50.80	38-TCP.*
2.0"	2.52	64.00	51-TCP.*

*For choosing materials, see the table below

Material	FDA Certified	FDA Class VI Certified
EPDA Black	EP	EP.RX
Silicone Platinum		SX.RX
Viton Black	V	V.RX
PTFE	TF	TF.RX



Ordering Example

Description	Nominal Size In.	Ordering Code
Type TCP	3/4"	20-TCP./EP.RX

*Material is included to the ordering code.

GASKETS

Protectors

Protects Expensive, Fragile Gauge Diaphragms and Other Similar Instruments from Damage During Calibration, Routine Maintenance and During Autoclave Procedures.

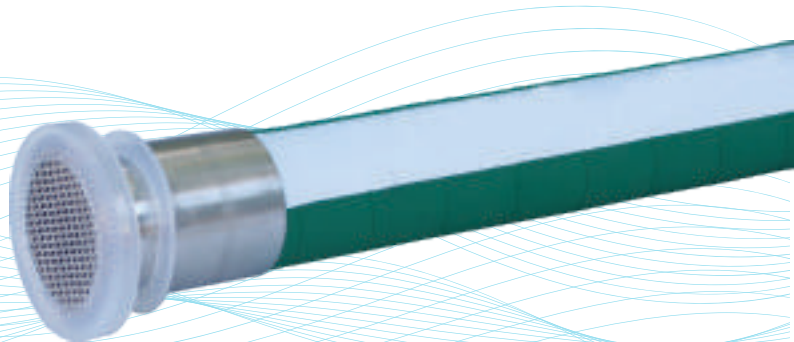


Combine the Gauge Guard Protector with a quality Rubber Fab Gauge Guard Isolator Gasket to achieve complete diaphragm protection. A necessary and cost effective step in assuring maximum service life and accurate results from your instruments and gauges.

- 3/4", 1", 1-1/2" and 2" Sizes Available
- Manufactured using U.S.P. Class VI Platinum Cured Silicone and 316SS



Caution
Do Not Push Diaphragm with Fingers or Damage to Gauge Can Result and Gauge Manufacturer Warranty Could be Voided.



Combine the Gauge Guard Protector with a quality Rubber Fab Gauge Guard Isolator Gasket to achieve complete diaphragm protection. A necessary and cost effective step in assuring maximum service life and accurate results from your instruments and gauges.

- 3/4", 1", 1-1/2" and 2" Sizes Available
- Manufactured using U.S.P. Class VI Platinum Cured Silicone and 316SS

Size	Part Number
3/4"	42GGP-PX-075
1", 1-1/2"	40GGP-PX-100/150
2"	42GGP-PX-200

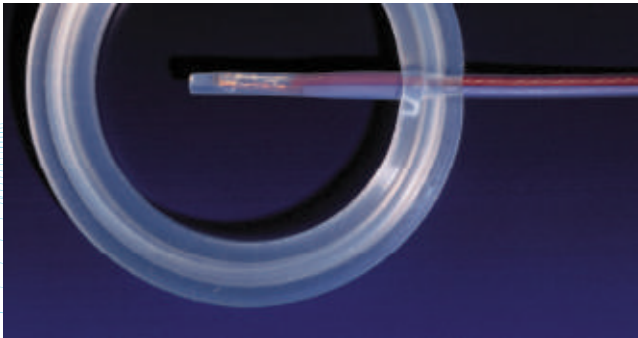
GASKETS

Protectors

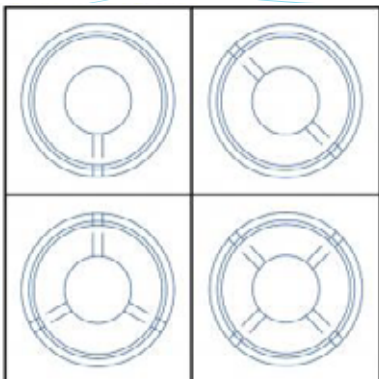
Smart Gasket ®

Smart Gasket ® value is proven when validating sterility in high-purity pharmaceutical system. Your standard sanitary flange utilizing the Smart Gasket is used to obtain the critical thermal mapping information you need during the validation process. Smart Gasket between two sanitary standard flanges using the sanitary Thermocouple Clamp to secure the flanges. The clamp provides up to four internal ports for accepting the Smart Gasket® thermocouple samples or accessories, i.e. ACC-T-199A-S or ACC-K-199-S Short Temperature Probe, ACC-T-199A-L or ACC-K-199A-L Long Temperature Probe. Meter fluids in your process system utilizing a peristaltic pump or withdraw samples utilizing our luer lock sampler and luer lock valve or syringe.

- Use temporarily or permanently without custom thermowells or expensive custom fittings.
- Easy to expand to multiple system sites.
- Sanitary without a dead leg.



Available configurations for the smart gasket



Meets High Pharmaceutical Standards

- U.S. Pharmacopeia Class VI Certification
- Cytotoxicity Criteria
- CFR Title 21 Section 177.2600
- Traceability: Lot and Batch
- Certification: Lot and Batch
- ASME-BPE Standards
- USDA Standards
- 3-A Sanitary Standards
- Current Good Manufacturing Practices (CGMP)
- Animal Derived Ingredient Free
- Metal Detectable Elastomers available

Thermometer

ACC-7001H

Temperature Range:

-200°C to + 850°C

Resolution

0.1°C

Accuracy:

±0.1°C from -100°C to +200°C

Model ACC-7001 H is a high- performance, precision handheld instrument for the measurement of temperature using type T, K, J, L, N, R or S thermocouple probes. This versatile instrument measures temperature in both °C and °F. The internal memory of the micro-computer stores the minimum and maximum measured temperature for instant recall via the LCD display.

Extension Leads

ACC-EXT-3MM 3 FEET

ACC-EXT- 6MM 6 FEET

ACC-EXT-12MM

12 FEET

Male to male (subminiature type T connectors) 26 gauge.
Stranded type to thermocouple wire with blue PVC insulation.

Temperature Probe

ACC-K-199A-S or ACC-T- 199A-S (short)

ACC-K-199A-L or ACC-T- 199A-L (long)

Short and long temperature probe for thermocouple gasket. Copper Constantan female socket and bootie.

Hole Plug

ACC-T-202A

Chrome-plated brass head with stainless steel shaft 1-1/2" long .090 diameter.

*Also available in 316 Stainless Steel.

ACC-T-202A-316

Sampling/Injection Tube

ACC-T-202

Chrome-plated brass female luerhead with 1-1/2" long stainless hypodermic tube .090O.D., .071I.D.

Stopcock

ACC-T-202B

To fit sampling/injection tube. Chrome-plated brass construction female luer fitting to male luer lock. * Also available in 316 Stainless Steel. **ACC-T-202B-316**

Thermocouple Wire

ACC-T1V-10, ACC-KV-10

Coated thermocouple wire probe x 10' long with male mini quick disconnect connector for use

with thermometer. Specify Kaptan or FEP when ordering.



GASKETS

Smart Gasket Thermocouple Hinge

Rubber Fabstn Smart Gasket Thermocouple Hinge Clamp provides up to four internal ports for accepting the Smart Gasket thermocouple samples or accessories.

Also available in gold. Consult factory for part number.



SIZE	DESCRIPTION	PORT	PART NUMBER
1/2" & 3/4"	1/2" & 3/4" Thermocouple Smart Gasket® Clamp	1	CL-TH-050/075-1
1/2" & 3/4"	1/2" & 3/4" Thermocouple Smart Gasket® Clamp	2	CL-TH-050/075-2
1/2" & 3/4"	1/2" & 3/4" Thermocouple Smart Gasket® Clamp	3	CL-TH-050/075-3
1/2" & 3/4"	1/2" & 3/4" Thermocouple Smart Gasket® Clamp	4	CL-TH-050/075-4
1" & 1 1/2"	1" & 1 1/2" Thermocouple Smart Gasket® Clamp	1	CL-TH-100/150-1
1" & 1 1/2"	1" & 1 1/2" Thermocouple Smart Gasket® Clamp	2	CL-TH-100/150-2
1" & 1 1/2"	1" & 1 1/2" Thermocouple Smart Gasket® Clamp	3	CL-TH-100/150-3
1" & 1 1/2"	1" & 1 1/2" Thermocouple Smart Gasket® Clamp	4	CL-TH-100/150-4
2"	2" Thermocouple Smart Gasket® Clamp	1	CL-TH-200-1
2"	2" Thermocouple Smart Gasket® Clamp	2	CL-TH-200-2
2"	2" Thermocouple Smart Gasket® Clamp	3	CL-TH-200-3
2"	2" Thermocouple Smart Gasket® Clamp	4	CL-TH-200-4
3"	3" Thermocouple Smart Gasket® Clamp	1	CL-TH-300-1
3"	3" Thermocouple Smart Gasket® Clamp	2	CL-TH-300-2
3"	3" Thermocouple Smart Gasket® Clamp	3	CL-TH-300-3
3"	3" Thermocouple Smart Gasket® Clamp	4	CL-TH-300-4
4"	4" Thermocouple Smart Gasket® Clamp	1	CL-TH-400-1
4"	4" Thermocouple Smart Gasket® Clamp	2	CL-TH-400-2
4"	4" Thermocouple Smart Gasket® Clamp	3	CL-TH-400-3
4"	4" Thermocouple Smart Gasket® Clamp	4	CL-TH-400-4

GASKETS

Spore Trap Gasket

The Smart Gasket® with the Spore Trap is designed to securely retain and accurately expose spore challenge test strips for use in steam sterilization when validating. After each validation cycle, the spore trap, with its securely retained test strip can easily be removed and re-challenged. Combined with the Smart Gasket® Thermocouple Gasket, an accurate integration of sterilization and spore strip is practical. The spore strip Smart Gasket®. All this is accomplished without adding special fittings or weldments and is easily installed into your sanitary systems.

Smart Gasket® with Spore Trap holder is available with and without a thermocouple port.

Spore Trap Benefits:

- Use in combination with the Smart Gasket® Thermocouple Hygienic Seal for an accurate integration of sterilization and spore strip testing.
- internal port available when utilizing the spore strip Smart Gasket®
- No need for custom fittings or weldments and is easily installed into your sanitary systems.
- Smart Gasket® with Spore Trap holder is available with and without a thermocouple port.

Nominal Size In.	Part # - Silicone	Part # - EPDM	
1½"	G-SPR-150-Sil	G-SPR-150-EP	G-SPR-150-V
2.0"	G-SPR-200-Sil	G-SPR-200-EP	G-SPR-150-V
3.0"	G-SPR-300-Sil	G-SPR-300-EP	G-SPR-150-V
4.0"	G-SPR-400-Sil	G-SPR-400-EP	G-SPR-150-V

* For choosing materials, see the table below

Spore Trap Clamp

Nominal Size In.	Part #
1½"	CL-TH-SPR-150
2.0"	CL-TH-SPR-200
3.0"	CL-TH-SPR-300
4.0"	CL-TH-SPR-400

* For Spore Trap Clamp with 1 port add -1 to end of part number



GASKETS

Biological Indicator

A new product that enables the use of a self contained biological indicator in sanitary process lines. This unique Smart Gasket permits either top loading or inline positioning of an EZTest self contained biological indicator and/or a temperature probe.

The great advantage of a self contained biological indicator over the traditional spore strip in glassine is the time saved when confirming spore kill. Results are easily obtained in only 24 hours (versus the five to seven days required with a spore strip) and without problematic laboratory transfer.

You can feel secure knowing that the biological indicator will not be lost down stream in the process. The fail-safe Smart Gasket holds the indicator in place for easy retrieval.

Sizes Available 3/4", 1", 1½" and 2"
Tri-Clamp process lines

Validation of Steam Systems

- Fermenters
- Pharmaceutical Tanks
- Sanitary Inline Pipe
- Pharmaceutical Hose



GASKETS

Meets High Pharmaceutical Standards Biological Indicator Gasket

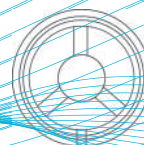
- U.S. Pharmacopeia Class VI Certification
- Cytotoxicity Criteria
- CFR Title 21 Section 177.2600
- Traceability: Lot and Batch
- Certification: Lot and Batch
- ASME-BPE Standards
- USDA Standards
- 3-A Sanitary Standards
- Current Good Manufacturing Practices (CGMP)
- Metal Detectable Elastomers available
- Animal Derived Ingredient Free

EZTest®

- U.S. Pharmacopeia
- ISO 11138
- European Norm 866

Smart Gasket Technology

The Biological Indicator Gasket is also available with one (1) Smart Gasket® Thermocouple Port.





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