

The Jorlon™ Diaphragm: Unparalleled Reliability

What is Jorlon™?

Jorlon™ is structurally modified pure PTFE. It is manufactured by a proprietary technique where PTFE layers are combined and formed in a unique process to reduce the creep and cold flow associated with conventionally formed solid, or laminated PTFE or Teflon.

A table of physical properties and compliance facts is available below.

Jorlon™ is featured in all of Steriflow's valve product lines:

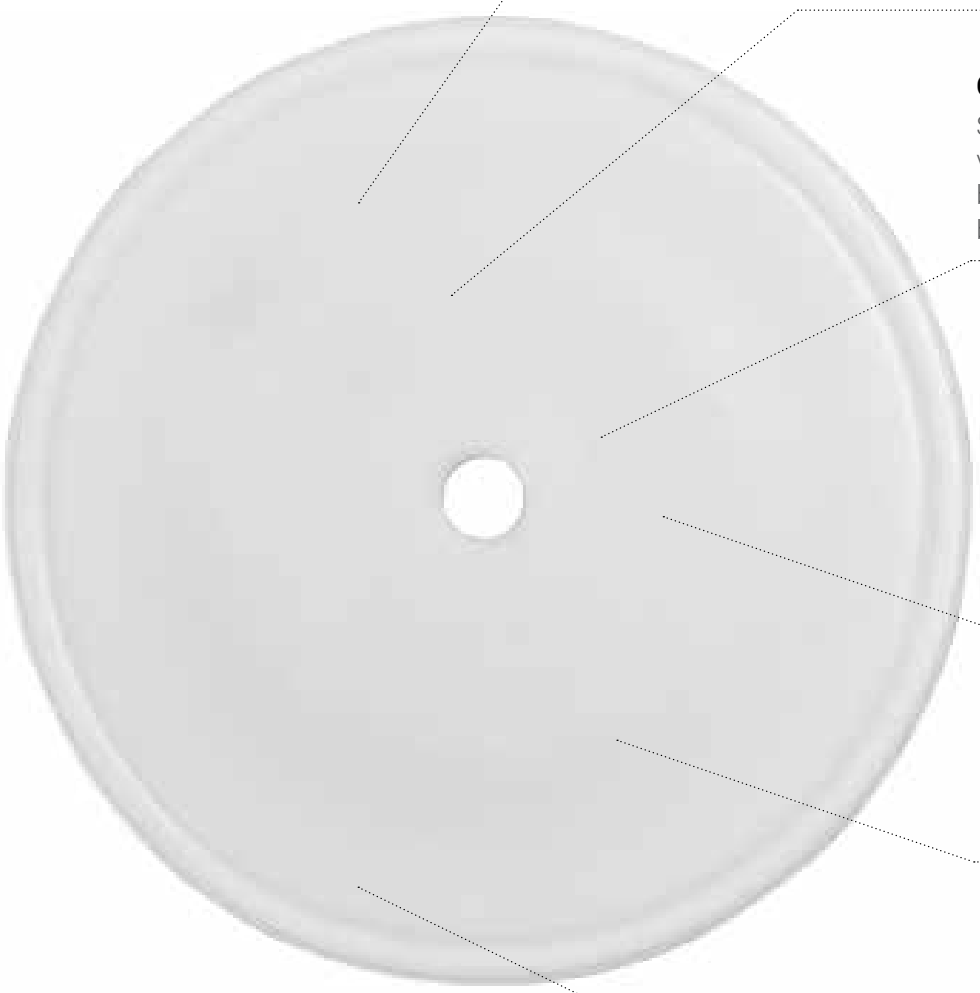
- Mark 978 Control Valves
- JSHM Manual Metering Valve
- Mark 96 Pressure Regulating Valves
- Mark 95 Back Pressure Regulating Valves
- Mark 96A, 96AA, 95A, 95AA Air Loaded Regulators
- J Series Clean Gas Pressure and Back Pressure Regulating Valves



Physical Properties of Jorlon™

Color	Clear, translucent		
Composition			PTFE
Temperature	Maximum		500°F
Creep relaxation (ASTM F38)	%		35
Specific Gravity (D792)			2.19
Compressibility (ASTM F36)	% Range		20 - 25
Recovery (ASTM F36)	Min. %		50
Tensile Strength (ASTM D1708)			
	X Direction	psi (N/mm ²)	5000 (35)
	Y Direction	psi (N/mm ²)	5100 (36)
Ultimate Elongation (ASTM D1708)			
	X Direction	%	500
	Y Direction	%	520
Gas Permeability (ASTM D1434V)	Cc/M ² /24 hrs		10,000
Flammability			Will not burn

Industry Approvals/Certifications: FDA CFR 21 177.1550,
USP<88> Class VI
USP<87>
ADI Free



Lifetime Warranty

Jorlon™ is warranted for a lifetime of use on our Mark 95, Mark 96, Mark 96AA, Mark 95AA regulators, MK978 Series control valves, J-series regulators, and the JSHM metering valve. See Page 3.

Product Applications

Jorlon™ has been specified in biopharm applications including WFI, clean steam (up to 100 psig), buffers, acids, cryogenic liquids, clean utility gas, biological intermediates and final process fluids

Customer Use

Since its inception, thousands of Steriflow valves with Jorlon™ diaphragms have been installed in systems which have been validated by the FDA

Cycle Testing

Jorlon™ has been tested on a variety of Steriflow control valves on 45 psig (3 bar) continuous steam service to over 1 million full stroke cycles. One of those valves was further tested with an additional 100 Steam and vacuum cycles without failure.

Lab Testing

Lab tests comparing Jorlon™ to 316L diaphragms have shown continued life after exceeding the SST failure cycle count by more than 100 times

Jorlon™ Material

Jorlon™ has been used by Steriflow for over 20 years. To date, not one valve has been returned due to diaphragm failure when operating within its use parameters. Jorlon™ has been nitrogen pressure tested to over 1200 psi without failure.



Jorlon™ Warranty

Steriflow Valve warrants the Jorlon™ diaphragm for use on all of its control valves and gas regulators as defined:

- J-Series Gas Regulators: Models JSRLF, JSRLFLP, JSR, JSRLP, JSRH, JSRHF, JSB, JSBLF, JSBLFLP, JSBLP
- MK95, MK96 manual and air loaded Clean Utility and Process PRVs and BPRVs
- MK978 series control valves, and JSHM Manual Control/Metering valves.

All are warranted for a lifetime¹ of use on all clean steam, WFI, clean utility, gas² or process applications at continuous operating pressures and temperatures no greater than 75 psig @ 340°F, including intermittent exposure to negative pressure not greater than 24" Hg.

1. A lifetime of use is defined as the period during which the warranted diaphragm resides in the original valve, and original installation. If the warranted valve is ever replaced or moved to a different installation, or is not used for a period of more than one year (not counting original Installation, Commissioning, Qualification and/or Validation period), the original diaphragm warranty is void.

2. Jorlon™ is an FDA (21CFR177, 1550) and USP <88> Class VI, USP <87>, ADI/TSE Free compliant PTFE material with excellent corrosion resistance. However, because of the wide variety of specialty gasses available today, Steriflow warrants its use on the most commonly used Pharma gasses such as Air, Nitrogen, Oxygen, Carbon Dioxide, and Argon. It is not warranted without Steriflow Engineering's written approval on any other gas. Contact Steriflow for details. The diaphragm warranty is void on these other gas applications without our express, written approval.

Remedy

If the original Jorlon™ diaphragm fails on any of the valves listed above at any time within the limitations stated above, Steriflow will replace that diaphragm at no charge. This includes all certifications of compliance to FDA and USP Class VI, and any UPS Next Day expedited freight charges for the replacement diaphragm and associated documentation.

Exclusions

- This warranty and associated remedy does not cover diaphragms that were damaged due to customer mishandling, misapplication or neglect.
- Steriflow reserves the right to inspect a failed diaphragm before the application of remedy, to determine cause of failure.
- Steriflow does not make provision to cover any other costs incurred as a result of diaphragm failure including (but not limited to) any labor, capital, operating costs, or lost profits due to a diaphragm failure.

This particular remedy is an addendum to the Richards Industrials' standard commercial warranty, and terms and conditions. No other remedies apply.