

# Garlock Diaphragms

For the Food and Pharmaceutical Industries



## Industrial Expertise and Material Excellence

The Garlock Family of Companies are the acknowledged global leader in the design, manufacture and supply of high-performance fluid sealing products. It supplies the broadest range of purpose designed products to meet the challenging demands of the pharmaceutical industry.

With 18 global operations employing more than 1,700 people, a distributor network covering 75 countries and 12 manufacturing facilities, Garlock is uniquely positioned to support the Pharmaceutical industry worldwide.

### QUALITY, RELIABILITY, CLEANLINESS, STRENGTH AND DURABILITY

No one likes equipment downtime; that's why we created the most durable, long lasting line of pump and valve diaphragms. From pure PTFE to one-piece bolt on PTFE bonded rubber diaphragms, if you have a difficult or critical application, we have the diaphragm to meet your needs.

## GYLON® PTFE Diaphragm



Your solution for more reliable and longer lived pump and valve diaphragms

The two biggest advantages of a GYLON PTFE diaphragm are the reduced void content and the increased flexibility. Void content and flexibility will affect all aspects of a diaphragm – leakage, cycle life, reliability, downtime, etc.

### TYPICAL APPLICATIONS

- » Metering pumps
- » Diverting valves
- » Pressure sensors
- » Pressure regulators
- » Double diaphragm pumps

### REDUCED VOID CONTENT

- » Less permeation
- » Increased life
- » Reduced potential for cross-contamination of process media
- » The use of thinner material which reduces material costs and creates energy savings

### INCREASED FLEXIBILITY

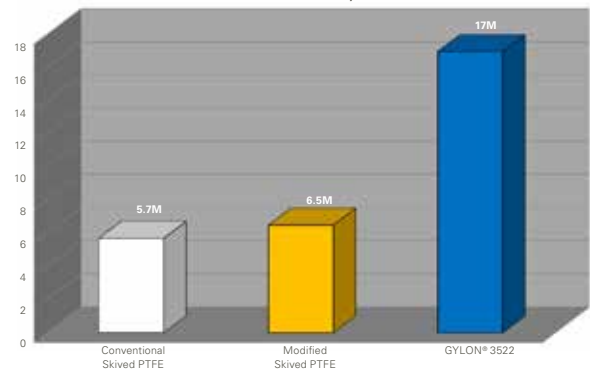
- » More time between changeovers
- » Decreased labor and documentation costs
- » Improved equipment reliability and life
- » Increased product uptime
- » Energy savings through increased equipment efficiency
- » Protection of downstream equipment

Exclusive to Garlock, the GYLON® PTFE Diaphragm material is a time proven product which is made using a proprietary process which optimizes quality and uniformity. Using the best available technology this material offer the longest cycle life in the industry, and continues to outperform all competitive materials.

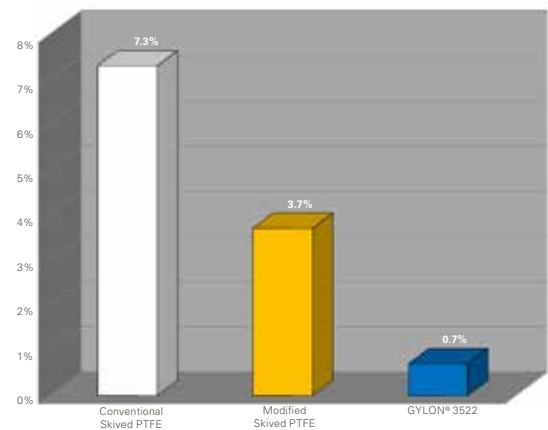
With a world class molding facility, we can make products to meet all of your requirements and with over 50 presses available, platen size is never an issue. Our world renown elastomer materials engineers specialize in rubber compounding, bonding, and molding.

These best in class products solidify the Garlock Family of Companies' position as a leader in innovation.

MIT Flex Endurance (ASTM D2176)  
Millions of Cycles



% Void Content



### MATERIAL PROPERTIES\*

<b>Compressibility</b>	20-25%
<b>Temperature<sup>1</sup></b> Maximum	+500°F (+260°C)
<b>CIP &amp; SIP Capable</b> Maximum	+300°F (+149°C)
<b>Pressure</b>	800psi (55 bar)
<b>Recovery</b>	50%
<b>Meets Specification:</b>	FDA Regulation 21CFR177.1550, 3A Standard, NSF 61 Standard, USP Class VI Chapter 87 & 88, USP Part 31, 281 and 661, TSE Free

# GYLON® ONE-UP® Pump Diaphragm

Your solution for sanitary applications  
in air operated diaphragm pumps

For years the industrial ONE-UP® pump diaphragm has been the first choice for the most demanding industrial applications. We are now introducing the new GYLON® ONE-UP for the most demanding sanitary applications.

Made using our exclusive GYLON® PTFE Diaphragm material and a proprietary EPDM rubber backing, this product is made with the same patented rib construction of our standard industrial ONE-UP.

## FDA COMPLIANCE

This FDA compliant diaphragm will have the same chemical resistance and long life as the industrial ONE-UP, however this diaphragm can be used in food and regulated applications. The GYLON® ONE-UP will outperform your current diaphragm; however because it is not as abrasive resistant as the industrial ONE-UP, we are recommending it for non-abrasive service only.

## SATISFACTION GUARANTEE

This product has the same Satisfaction Guarantee that the standard Industrial ONE-UP has. This is a money back guarantee on your initial order if you are not completely satisfied with the performance of the diaphragm.

## AVAILABILITY

Available in all of the sizes and pump offerings that the industrial ONE-UP is made: ALMATEC, ARO, DEPA, BLAGDON, FLOTRONICS, GRACO, UNITEC, VERDER, VERSAMATIC, WARREN RUPP, WILDEN AND YAMADA.

## EASY INSTALLATION

Made in a one-piece design, this diaphragm is simple to install. Whether it incorporates bolt holes or a perimeter sealing bead, it fits easily into the pump housing without the difficulties associated with installing two-piece diaphragm sets.

## TYPICAL APPLICATIONS

» Air operated diaphragm pumps for food and pharmaceutical applications

**WARNING:**  
Properties/applications shown throughout this brochure are typical. Your specific application should not be undertaken without independent study and evaluation for suitability. For specific application recommendations consult Garlock. Failure to select the proper sealing products could result in property damage and/or serious personal injury. Performance data published in this brochure has been developed from field testing, customer field reports and/or in-house testing.

While the utmost care has been used in compiling this brochure, we assume no responsibility for errors. Specifications subject to change without notice. This edition cancels all previous issues. Subject to change without notice.

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## MATERIAL PROPERTIES\*

<b>Temperature<sup>1</sup></b>	Minimum	+40°F (+4°C)
	Maximum	+300°F (+149°C)

<b>CIP &amp; SIP Capable</b>	Maximum	+300°F (+149°C)
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**Meets Specification (GYLON):** FDA Regulation 21CFR177.1550, 3A Standard, NSF 61 Standard, USP Class VI Chapter 87 & 88, USP Part 31, 281 and 661,  
**(EPDM):** TSE Free  
FDA Regulation 21CFR177.2600



# Garlock® High Performance Rubber Diaphragms

Your solution for more reliable and longer lived pump and valve diaphragms

We offer a variety of high performance rubber compounds and also have the ability to design compounds to meet customer specific requirements.

With a world class bonding and molding operation, Garlock provides the best solutions to solve your specific needs.



## FDA COMPLIANCE

Offering a variety of rubber compounds to meet your needs, we can comply with the strictest standards. We have compounds that comply with FDA standard 21CFR 177.2600 and NSF 61.

## COMPOUNDING

We provide custom mixing with state-of-the-art equipment and all materials are manufactured to comply with customer specific chemical and physical characteristics.

## MOLDING

Garlock specializes in precision molded products that encompass a high standard of quality. We can produce your product to meet commercial or precision RMA standards. With over 50 presses available platen size is never an issue.

## RUBBER BONDING

Garlock is recognized as the industrial leader, providing a superior bond with a wide array of elastomers to multiple materials:

- » Rubber to fabric
- » Rubber to metal
- » Rubber to plastic
- » Rubber to PTFE

## PERFORMANCE

Diaphragms are often the most critical part in a pump or valve and there's no need to compromise on performance. Garlock provides custom designs and the longest lasting rubber compounds to outperform all competitive products.

## MATERIALS

- » Nitrile
- » EPDM
- » Nylon
- » Aflas
- » Butyl
- » Silicone
- » PTFE
- » Urethane
- » Natural Rubber
- » Fluoroelastomer (FKM)
- » Styrene Butadiene (SBR)
- » Hydrogenated Nitrile (HNBR)



<sup>1</sup> Due to the unique dynamics of actuated pumps, Garlock can not specify temperature limits for actual diaphragms. In a diaphragm pump and valve, there are variables such as but not limited to; diaphragm geometry, displacement, and pump speed that greatly affect the diaphragm performance. Experienced pump and valve manufacturers have confirmed that pumps and valves used in low and/or elevated service temperatures (40°F to 200°F) should be re-rated with respect to speed and pressure.

DIA 6:2

## GARLOCK

EnPro Industries family of companies

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