

# GYLON BIO-LINE®

Quality PTFE seals for the pharmaceutical and food processing industries



# Process and equipment reliability

In the pharmaceutical and food processing industries, down time is not desirable. Sterilization cycles are carried out in the shortest possible time with high concentrations of the chemicals, high temperatures and increased flow through velocities. With these requirements the limits of the elastomer sealing properties are quickly reached.

GYLON BIO-LINE® offers a new sealing material for all temperatures and processes.

If you are looking for a sealing material resistant to acids, caustics and sensitive media, performing at low and high temperatures and pressures, options are difficult to find. The available elastomers generally fail in at least one of these requirements and conventional PTFE is not suitable due to its cold flow properties. The restructured and modified PTFE of the GYLON BIO-LINE® is guaranteed to meet all these criteria. Not only providing safe and efficient processes but also optimizing stock keeping.

GYLON BIO-LINE® also resolves a further problem of the elastomeric seals. Elastomeric seals extrude from connections due to mechanical stresses from vibrations and misalignment. Extruded elastomeric seals create dead spaces that impair the cleaning and sterilization. The contamination of subsequent charges through residues on the sealing material could be a consequence. GYLON BIO-LINE® seals remain flexible, tight and flush with the pipe bore even under high loads.

The pharmaceutical and food processing industries uses numerous types of seals whose standard sizes differ and overlap. One example is ISO 1127 for internal pipe cross sections, which allows for several sealing profiles. We are well aware of these short comings and are happy to support you in selecting the optimum GYLON BIO-LINE® seal.

## Advantages at a Glance

<b>Stable dimensions</b>	» No extrusion, no cold flow, high recovery
<b>Temperature resistant</b>	» Can be used at all process temperatures and with high temperature fluctuations
<b>Resistant to media</b>	» Almost universal chemical resistance, FDA compliant, meets USP Class VI
<b>A seal for all chemicals and temperatures</b>	» Reduces stock; reduces risk of improper installation
<b>Additional advantages</b>	<ul style="list-style-type: none"> <li>» Maintains excellent sealing characteristics under vibration, flange misalignment and high temperature differentials</li> <li>» Can be installed in a wide range of pressure connections</li> <li>» Reduces down time and costs</li> <li>» Resistant to all SIP and CIP processes</li> </ul>
<b>Approvals</b>	<ul style="list-style-type: none"> <li>» EN 1935/2004</li> <li>» USP Class VI</li> <li>» FDA-compliant</li> <li>» KTW-approved</li> </ul>

# GYLON BIO-ASEPT®

For aseptic flange connections in accordance with DIN 11853 and DIN 11864 (Form A).



**Flange connections according to DIN 11853 (hygienic connections) and DIN 11864 (aseptic connections) place high requirements on the sealing rings. The quality of the elastomeric sealing products and materials, combined with their installation limits, varies enormously in the market place. Acceptable aseptic connections are not always guaranteed.**

GYLON BIO-ASEPT® seals offer high stability and a specific elasticity. The seals are pre-formed and stress controlled to provide a solid seal when assembled in the piping systems. Chemical degradation or brittleness will not occur under normal or even increasing process and sterilization conditions, due to specific, high performing PTFE sealing material.

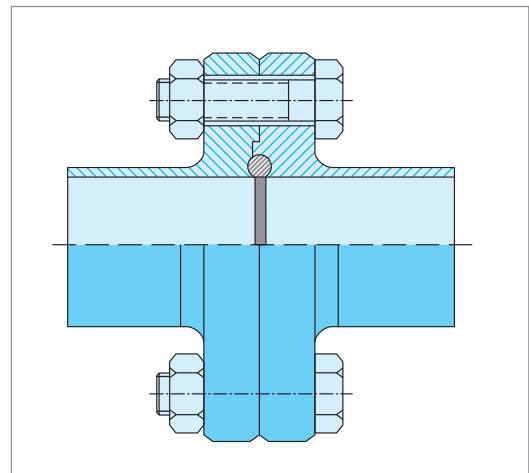
### Technical Data

» Temperatures -210 °C to +260 °C
» Seal dimensions in accordance with DIN 11850 and ISO 1127
» Production location Germany

### Characteristics

» No extrusion and no cold flow
» Excellent for all process temperatures
» High resistance to almost all chemicals and temperature cycles
» Meets EN 1935 / 2004, USP Class VI, FDA-compliant and KTW approved

### Application



Aseptic flange connection in Off-Load design.

### Nominal Sizes for Pipework

in accordance with DIN 11850 and ISO 1127:

DIN 11850 (DIN 11866 Series A) DN	ISO 1127 (DIN 11866 Series B) DN
10	13,5
15	17,2
20	21,3
25	26,9
32	33,7
40	42,4
50	48,3
65	60,3
80	76,1
100	88,9

## GYLON BIO-ECO®

The ideal seal for dairy screw couplings in accordance with DIN 11851 and SMS 1149.



**Couplings were originally manufactured for fluid foodstuffs, and have now established themselves as the most common fastener in the entire fluid foodstuffs industry.**

The necessity for adequate sealing stress and simultaneous recovery makes GYLON BIO-ECO® the ideal solution for couplings in accordance with DIN 11851 and SMS 1149. All of the disadvantages associated with current elastomeric seals regarding temperature, chemical resistance and re-usability are eliminated by the modified PTFE material. GYLON BIO-ECO® seals are available in all dimensions without inner collar (M1) or with inner collar (M2).

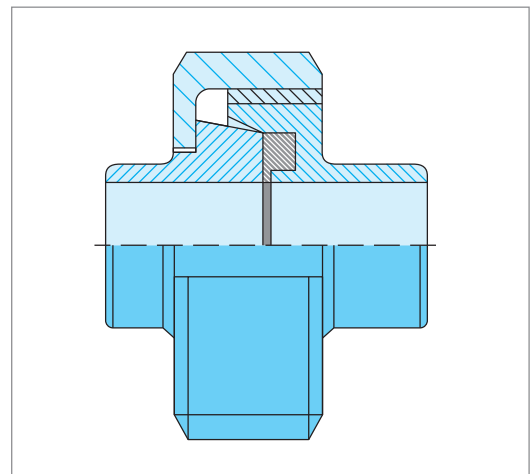
### Technical Data

» Temperatures -210 °C to +260 °C
» Pressure 55 bar
» Compressibility 25 to 45 %
» Recovery 30 %
» Seal dimensions in accordance with DIN 11851 and SMS 1149
» Production location Germany

### Characteristics

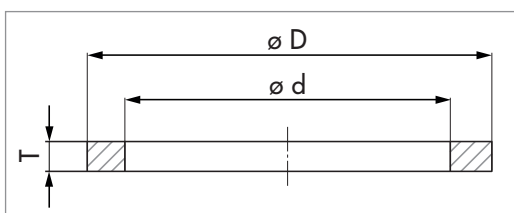
» No extrusion and no cold flow
» Excellent for all process temperatures
» High resistance to almost all chemicals and temperature cycles
» Meets EN 1935 / 2004, USP Class VI, FDA-compliant and KTW approved

### Application



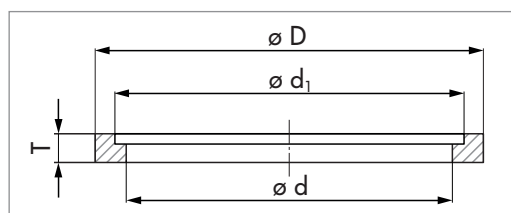
Standard flange connection.

### GYLON BIO-ECO® M1



Without inner collar

### GYLON BIO-ECO® M2



With inner collar

# GYLON BIO-ECO®

Dimensions for diary screw couplings in accordance with DIN 11851 and SMS 1149.

DIN 11851, Type M1			
DN	Ø d (mm)	Ø D (mm)	T (mm)
10	12,0	20,0	3,8
15	18,0	26,0	3,8
20	23,0	33,0	3,8
25	30,0	40,0	4,8
32	36,0	46,0	4,8
40	42,0	52,0	4,8
50	54,0	64,0	4,8
65	71,0	81,0	4,8
80	85,0	95,0	4,8
100	104,0	114,0	6,4
125	130,0	142,0	6,4
150	155,0	167,0	6,4

DIN 11851, Type M2				
DN	Ø d (mm)	Ø d <sub>1</sub> (mm)	Ø D (mm)	T (mm)
10	10,5	12,0	20,0	3,8
15	16,5	18,0	26,0	3,8
20	20,5	23,0	33,0	3,8
25	26,5	30,0	40,0	4,8
32	32,5	36,0	46,0	4,8
40	38,5	42,0	52,0	4,8
50	50,5	54,0	64,0	4,8
65	66,5	71,0	81,0	4,8
80	81,5	85,0	95,0	4,8
100	100,5	104,0	114,0	6,4
125	125,0	130,0	142,0	6,4
150	150,0	155,0	167,0	6,4

SMS 1149, Type M1			
DN	Ø d (mm)	Ø D (mm)	T (mm)
25	25,0	32,0	4,8
32	32,0	40,0	4,8
38	38,0	48,0	4,8
51	51,0	61,0	4,8
63,5	63,5	73,5	4,8
76	76,0	86,0	4,8
89	89,0	101,0	4,8
108	108,0	120,0	4,8

SMS 1149, Type M2				
DN	Ø d (mm)	Ø d <sub>1</sub> (mm)	Ø D (mm)	T (mm)
25	22,5	25,0	32,0	4,8
38	35,5	38,0	48,0	4,8
51	48,5	51,0	61,0	4,8
63,5	60,5	63,5	73,5	4,8
76	72,5	76,0	86,0	4,8
101 s	98,0	104,0	116,0	4,8
104 s	101,0	104,0	116,0	4,8

s (special dimensions)

# GYLON BIO-PRO®

A new perspective for all TRI-CLAMP connections in the pharmaceutical and food processing industries.



**TRI-CLAMP connections are the standard connection in the pharmaceutical and food processing industries since many years. Seals of varying quality and materials are often used regardless of their suitability for constantly increasing operating parameters.**

GYLON BIO-PRO® seals offer a safe solution with its modified and restructured PTFE material, pre-formed and stress controlled, for all TRI-CLAMP standards. It is dimensionally stable and resists intrusion into the pipe bore. Can be safely used with all cleaning, neutralizing and sterilizing media, including steam, and for all standard process temperatures.

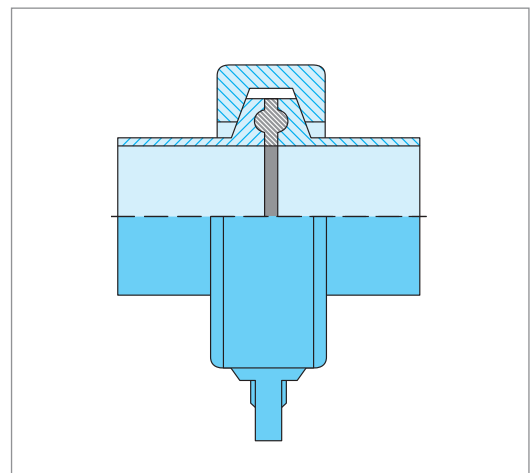
### Technical Data

» Temperatures - 210 to + 260 °C
» Pressure 55 bar
» Seal dimensions in accordance with DIN 32676, DIN 11850, ISO1127, ASME BPE - 2009, ISO 2852, SMS 3019
» Production location Germany

### Characteristics

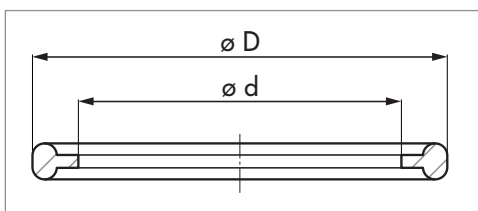
» No extrusion and no cold flow
» Excellent for all process temperatures
» High resistance to almost all chemicals and temperature cycles
» Meets EN 1935 / 2004, USP Class VI, FDA-compliant and KTW approved

### Application

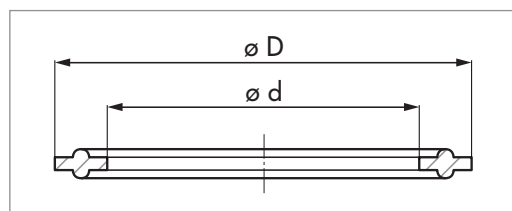


Standard TRI-CLAMP connection.

### GYLON BIO-PRO® T1



### GYLON BIO-PRO® T2



Garlock differs, depending on standard and flange seal geometry, two types of TRI-CLAMP connections. So-called 'Miniclamps' are characterised with T1, all remaining seals represent the type T2.

# GYLON BIO-PRO®

Seals for TRI-CLAMP connections.

DIN 32676								
DIN 11850 (DIN 11866 Series A)			ISO 1127 (DIN 11866 Series B)			ASME BPE - 2009 (DIN 11866 Series C)		
DN	Ø ID	Ø OD	DN	Ø ID	Ø OD	DN	Ø ID	Ø OD
6 <sub>T1</sub>	6,2	21,8	10,2 <sub>T1</sub>	on request		¼" <sub>T1</sub>	4,8	21,8
8 <sub>T1</sub>	8,2	21,8	13,5 <sub>T1</sub>	10,5	21,8	⅜" <sub>T1</sub>	8,0	21,8
10	10,2	34,0	17,2 <sub>T1</sub>	14,2	21,8	½" <sub>T1</sub>	9,6	21,8
15	16,2	34,0	21,3	18,3	50,5	¾" <sub>T1</sub>	16,0	21,8
20	20,2	34,0	26,9	23,9	50,5	1" <sub>T1</sub>	22,3	31,1
25	26,2	50,5	33,7	29,9	50,5	1"	22,3	50,5
32	32,2	50,5	42,4	38,6	64,0	1 ½"	35,0	50,5
40	38,2	50,5	48,3	44,5	64,0	2"	47,7	64,0
50	50,2	64,0	60,3	56,5	77,5	2 ½"	60,4	77,5
65	66,2	91,0	76,1	72,3	91,0	3"	73,1	91,0
80	81,2	106,0	88,9	84,5	106,0	4"	97,6	119,0
100	100,2	119,0	114,3	109,9	130,0	6"	147,1	167,0
125	125,2	155,0	139,7	134,7	155,0			
150	150,2	183,0	168,3	163,3	183,0			
200	200,2	233,5	219,1	214,1	233,5			

ISO 2852		
DN	Ø ID	Ø OD
12	10,2	34,0
12,7	10,9	34,0
17,2	15,4	34,0
21,3	19,5	34,0
25	22,8	50,5
33,7	31,5	50,5
38	35,8	50,5
40	37,8	64,0
51	48,8	64,0
63,5	60,6	77,5
70	67,0	91,0
76,1	73,1	91,0
88,9	85,1	106,0
101,6	97,8	119,0
114,3	110,5	130,0
139,7	135,9	155,0
168,3	163,3	183,0
219,1	214,1	233,5

SMS 3019		
DN	Ø ID	Ø OD
12	10,0	34,0
18	16,2	34,0
25	22,8	50,5
33,7	31,5	50,5
38	35,8	50,5
51	48,8	64,0
63,5	60,5	77,5
76,1	73,1	91,0
88,9	85,1	106,0
101,6	97,8	119,0
114,3	110,5	130,0
139,7	135,9	155,0
168,3	163,3	183,0
219,1	214,1	233,5

Special Sizes	
Ø ID	Ø OD
12,0	21,8
12,0	34,0
14,0	34,0
18,0	34,0
30,8	50,5
39,1	50,5
45,4	64,0
56,3	91,0
99,4	119,0
250,0	268,0
300,0	319,0

Dimensions in mm  
Sealing design "T2" if not differently stated

Note:  
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 GARLOCK is a registered trademark for packings, seals, gaskets, and other products of Garlock.  
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