

Leading Innovator of Sanitary Gaskets, Hoses, Hose Assemblies and Pump Parts

# Video training: Connections, Gaskets and Accessories

Time Mechanical
Temperature
Chemical

29.04.2020 – Webinar II by Sascha Butter, Christoph Neuffer, Dominik Wiese





**Tri-Clamp Connection** 

- > Provides a hygienic joint
- Reduced seal intrusion
- Easy to install / assemble / disassemble
- > Allows for COP, visual inspection, process re-configuration and easy replacement of parts



# Rubber Fab

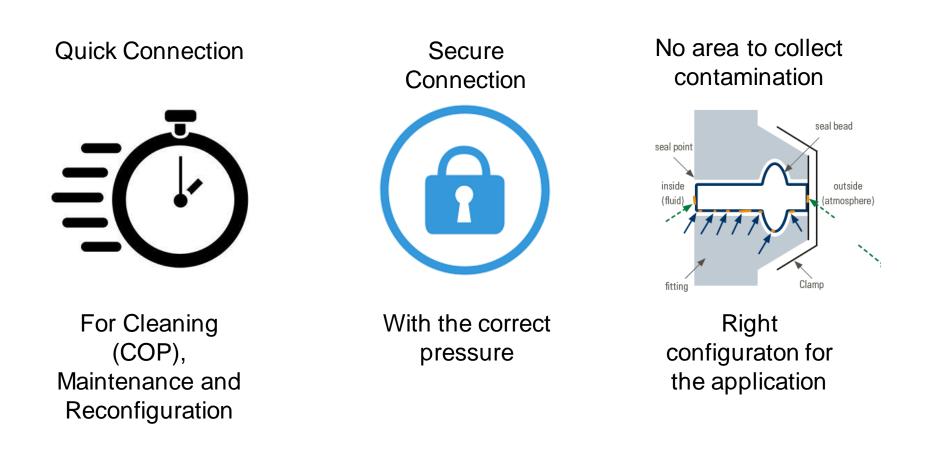
#### Various sanitary connections

- Dairy Connection acc. to DIN 11851
- Aseptic connection acc. to DIN 11864
- SMS connection
- DRD Welding adapter
- Varivent connections
- APV connections
- Welding adapter for Deltapilot S
- Tri-Clamp acc. to DIN 32676/ISO 2852
- Welding adapter "F" for Liquiphant
- Process connection DN 25 Ingold
- I Line Clamp Fitting ; Cherry Burrell
- BSM British Standard Milk
- .....many more!!!!!





### **Goals of the Clamp Connection**





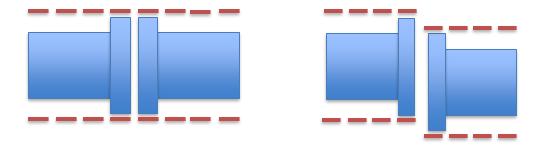
### **Key Points of the Clamp Connection**

- Maintenance is Critical
- Training is important

- Inspect the Ferrule and check alignment
- Clamp Deformation and Damages

- Select Proper Gasket Materials and tools
- Confirm Gasket Size









a Garlock Hygienic Technologies company

## **Product Overview**



#### **Rubber Fab Gasket Materials**

- GYLON<sup>®</sup>
- Tuf-Steel<sup>®</sup> (PTFE and 316 Atomized Stainless Steel)
- Tuf-Flex<sup>®</sup> (PTFE and EPDM)
- PTFE
- Platinum Cured Silicone
- FKM Fluroelastomers
- EPDM
- Buna



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#### **Gasket Color Coding**

 Many sanitary elastomeric materials are the same in appearance. Rubber Fab sanitary gaskets are specifically color coded with dots to easily identify the gasket material.

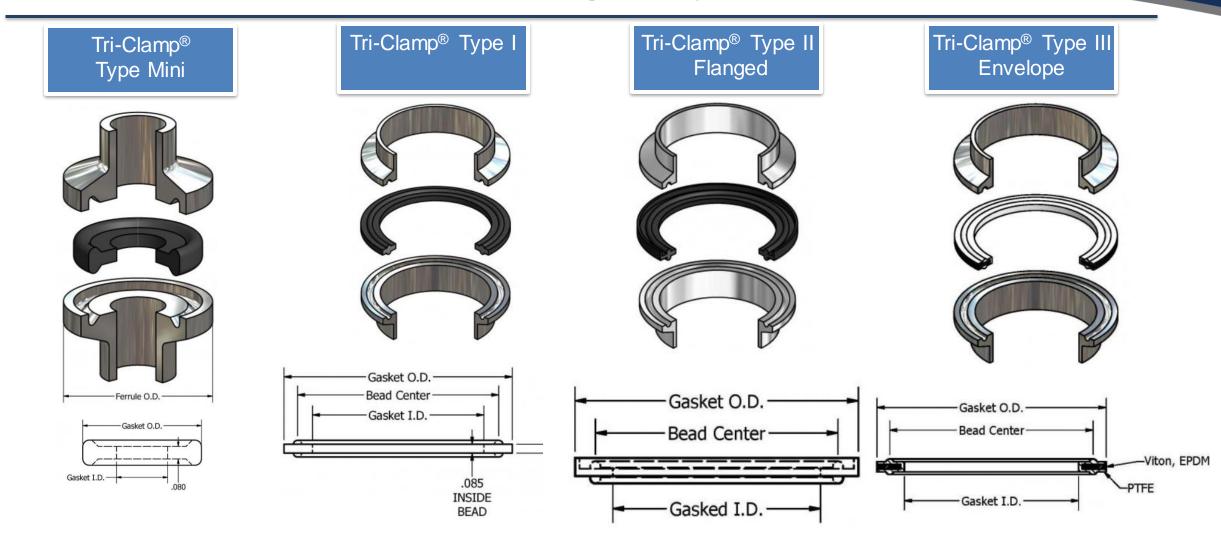


Material	Dot Description	Color Code
Tuf-Steel®	no dot	
Tuf-Flex®	no dot	
PTFE	no dot	
PTFE - Type III Envelope Style with FKM Fluoroelastomer Filler	one white dot & one yellow dot	$\circ$
PTFE - Type III Envelope Style with EPDM Filler	three green dots	
FKM Fluoroelastomer	one white dot & one yellow dot	$\circ$
EPDM - peroxide cured	three green dots	
Silicone - white platinum	one pink dot if re- quested	•
Silicone - platinum cured	no dot	
Buna	one red dot	

**Rubber Fab** 

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#### Standard TC gasket types



Webinar 02 – Connections, Gaskets + Accessories



#### **Buna Gaskets**

- Versatile and cheap elastomer when chemical compatibility is sufficient
- Good physical properties
- Operating temperature of -30°F to 200°F (-34°C to 93°C)





#### **EPDM Gaskets**

- Works well in both low and high temperatures (temperature cycling)
- Good resistance to chemicals
- Peroxide cured
- Operating temperature of -30°F to 300°F (-34°C to 148°C)





**FKM Gaskets** 

- Well suited for prolonged exposure to high operating temperatures
- Good for steam applications

 Operating temperature of -30°F to 400°F (-34°C to 204°C)





#### **Platinum Cured Silicone**

- Material of choice in sanitary water systems
- Withstands temperature extremes
- Resists product adhesion and maintains product integrity
- Operating temperature of -40°F to 450°F (-40°C to 232°C)





#### **PTFE Gaskets**

- Material of choice whenever low temperature flexibility or gasket memory is not required
- Can remain in service for longer periods of time in both water and steam applications
- Not recommended with large temperature variations due to creep and cold flow.
- Operating temperature of -100°F to 500°F (-73°C to 260°C)





PTFE Envelope Gaskets

- Envelope Type III
  - Chemical resistance of PTFE and elastomeric insert of EPDM or FKM
  - > Available flanged and non flanged
  - Meets FDA and USP Class VI standards
- Temperature Range:
  - PTFE w/EPDM -22°F to 302°F (-30°C to 150°C)
  - PTFE w/VITON -22°F to 338°F (-30°C to 170°C)

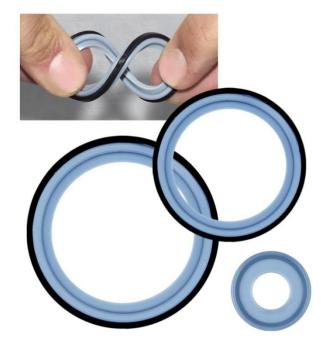






#### **Tuf-Flex® Unitized Gasket**

- Combining the flexibility of an elastomer with the chemical resistance of PTFE
- Performance with exceptional purity
  - PTFE contact surface
  - EPDM rubber inner core
- Complete bonded construction provides flexibility in a high purity environment
- Operating temperature of -20°F to 300°F (-28°C to 148°C)
- Sizes available: Mini 12"





#### **Tuf-Steel**®

- New Standard in SIP (Sterilization in Place) gasket stability and longevity
- Composed of a unique 50/50 blend of PTFE and 316L <u>atomized</u> and <u>passivated</u> stainless steel
- Unique blend provides outstanding performance in sanitary steam pipe connections with temperature ranges of -320° to 550°F (-195°C to 287°C).
- Sizes available: Mini-12"
- Also available in sheet





**GYLON BIO-PRO<sup>®</sup>** 

- No extrusion and cold flow
- Temperature range of -346°F to 500°F (-210°C to 260°C)
- High resistance to most chemicals & temperature cycles
- Meets EN 1935/2004, USP Class VI, FDAcompliant and KTW approved





## **GYLON BIO-PRO® PLUS**

- Sealing integrity proprietary GYLON® resists creep and cold flow
- Temperature range of -450°F to 500°F (-267°C to 260°C)
- Eliminates gasket recession and intrusion into the process flow
- Ease of removal with zero gasket residue
- Exceptional chemical and thermal cycling capabilities





#### **Screen Gaskets**

- Helps to filter out unwanted particulates
- Metallic screens are available in 316 stainless steel, in a variety of mesh sizes
- Standard materials available
- Available sizes include Mini 6"

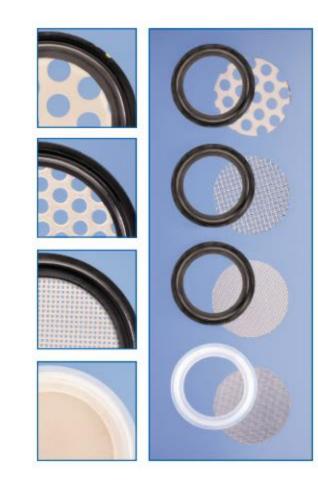




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#### **Perforated Plate Gaskets**

- Gaskets for large particle filtration
- Standard Materials available
- Screen discs, Perforated discs and Orifice plate inserts available





#### **Sock Screen Gaskets**

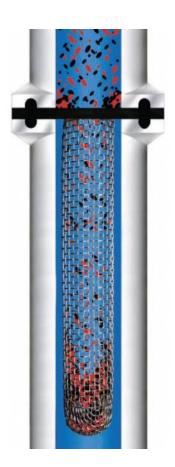
- Increased surface area over standard screen gaskets
- Larger containment area reduces costly downtime
- Metal 316 Stainless Steel Base is impulse welded
- Available in sizes 1.5" 4"
- Custom lengths available

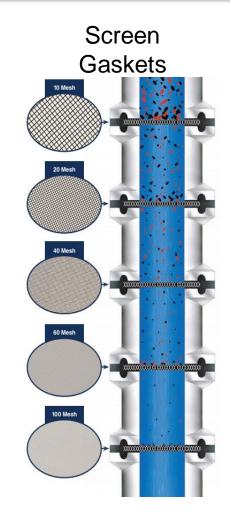


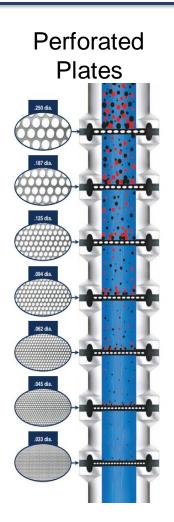


#### **Particle Filtration**

Sock Screen









**Orifice Plates** 

- Manufactured from 316L stainless steel
- Drilled holes from 1/64" to  $1\frac{1}{2}$ "
- Vertical style is available
- Tabs can be laser engraved to indicate orifice installation and hole size
- Available in FKM, Silicone, EPDM, Buna, PTFE and Tuf-Steel®
- Sizes ranging from Mini to 4"





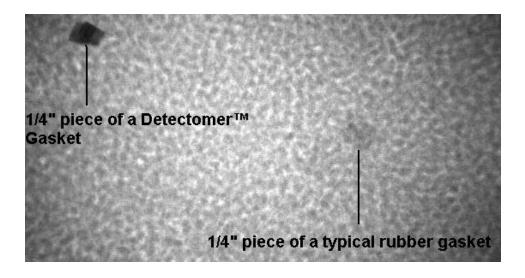
#### **Detectomer® Products**

- Full line of patented metal detectable / x-ray inspectable elastomeric products
- Helps to reduce product loss, product recalls and costly downtime
- Available in Tuf-Steel®, Buna, Silicone, FKM and EPDM
- Available in Tri-Clamp Gasket, sheet, O-ring and more
- Detectomer®/X-ray Inspectable Patent #9,701,827



**Detectomer® Products** 

- Making the Invisible Visible
- Remove foreign material contamination









#### What are Detectomer® Products?

 Plastics and Elastomeres can be easily modified to enhance detectability

• No significant impact on functionallity

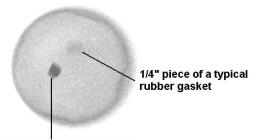
• Understand detectability limits



PolyMag Additives



PolyMag Beige XRD



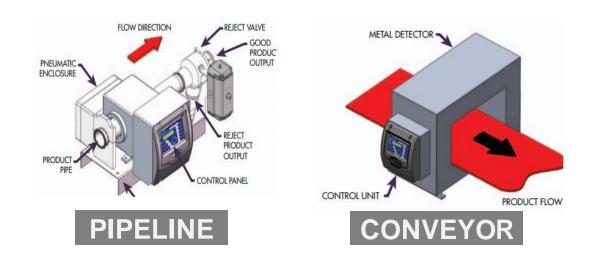
1/4" piece of a Detectomer™ Gasket



#### **Metal Detection Types**

Well established method, widely implemented.

Easily configured for multiple process/application areas



PRODUCT PIPE RUBBER BOOT DETECTOR SHOWN IS FULL SIZE CASE FLAP-GATE REJECT VALVE FETRIEVAL SYSTEM GOOD PRODUCT OUTPUT

Images are property of Fortress Technology



#### **Smart Gasket®**

- Pharmaceutical in-line validation system
  - > Temporary or permanent use without custom installation
  - Easy to expand (1, 2, 3, and 4 internal ports available)
- Available sizes Mini 4"
- Materials: EPDM, FKM Fluoroelastomere and Platinum Silicone
- Accessories are also available





Thermocouple Clamps

- Works with the Smart Gasket®
- Available in  $\frac{1}{2}$ " 4"
- Comes with 1 to 4 ports





#### Smart gasket® Spore Trap

- Avoids loss of spore test strips in the process system
- Easily and securely to retain after each validation cycle
- Platinum cured Silicone





#### **Smart gasket® Biological Indicator**

- Self-contained indicator for sanitary process lines
- Top loaded or inline positioning. Holds indicator in place for easy retrieval
- Results within 24 hours
- Available sizes are  $\frac{3}{4}$ " 2" in Silicone only





#### **Gauge Guard Protectors**

- Manufactured in Silicone and 316L stainless steel
- Protects critical instrumentation while not in use
- Available in sizes  $\frac{3}{4}$ " 2"





#### **Gauge Guard Isolator Gaskets**

- Protects critical instrumentation with NO performance loss; protects process media from manometer's filling liquid (e.g. glycerin, silicone oils)
- Isolates hot or caustic saline solutions from instrumentation
- Available in Silicone
- Sizes include
  - 1/2" & 3/4" .015 membrane thickness
  - ➤ 1", 1 ½" & 2" .010 membrane thickness





**Torque Tee And Accessories** 

- Designed to aid in clamp installation and removal
- Creates effective tightening leverage and aids in reaching tight spaces
- Works with Torque-Rite® and standard hinge clamp wing nuts
- Available in 30, 40, 50 and 70 in/lbs tees





**Torque-Rite**®

- Compression control made easy
  - Eliminates OVER and UNDER tightening of seals
- "CLICK" your way to a perfect seal and the perfect surface system
- Available in 30 in/lbs 40 in/lbs and 50 in/lbs





Value Added Services

- Laser Marking of Gaskets
- Custom Labeling
- Bar Coding
- Technical Services
- Packaging & Shipping Services
- Gamma Irradiation, Autoclaving, etc.



RUBBER FAB

RUBBER FAB

(973)-579-2959

## **Rubber Fab**

a Garlock Hygienic Technologies company

#### **Product Documentation**

Rubber Fa				Product	Selection	Overview				okio d Drive • Sparta, -1-386-4/ 2-2959 sales@rubbertep.com	++1-9/3-5/9-/2/5
	GYLON <sup>©</sup> BIO- PRD PLUS <sup>TH</sup>	GYLON BID-PRD**	Buna	FKM	EPDM	Silicone	PTFE	Tul-Flex <sup>®</sup>	Tuf-Steel*	PTFE/EPDM Envelope	PTFE/FKM Envelope
Product/Attribute	0	0	0	0	0	0	0	$\bigcirc$	0	$\bigcirc$	$\bigcirc$
Temperature Range	-260 to +280%	-260 to +260°C	-40 to +135°C	-30 to +205°C	-28 to +150°C	-40 to +230°C	-73 to +260°C	-20 to -260°C	-200 to -268°C	-30 to - 150°C	-30 to +170°0
Pressure Range	up lo ãõ bar	up to 55 tax	Clamp****	Clamp	Campros	Clamp****	Clanio****	Clamp	Clamp	Clamp****	Clamp
Vaccum	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Chemical Resistance	Universal*	High	Low to Medium	Medium to High	Medium	Medium	Universal*	Universa 1*	High	Universa *	Universal*
Valerial	100% PTFE	PTFE i Pigment + Fillar	100% Buna	100% EKM	100% EPDM	100% Silicane	100% PTFE	PTEE + EP DM	PTFE + 316SS	PTEE/EPDM	PTEE/EKM
Traceabili ty	Yes	On Demand	On Demand	On Demand	On Demand	On Demand	On Demand	On Demand	On Demand	Or Demand	On Demand
GIP Processes	Yes	Yos	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIP Processes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dimonsional Stability	Yes	Yos	Ycs	Yos	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Easy removal/non-stick	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Shelf Life	Unlimited	Unlimited	10 Years	10 Years	10 Years	10 Years	10 Years	10 Years	10 Years	10 Years	10 Years
Service Life	Uni mited**	Unli nited**	Application Dependen***	Application Dependent***	Application Dependent***	Application Dependent***	Application Dependent***	Application Dependent***	Application Dependent***	Application Dependent***	Application Dependent**
TA-LUFT + Blowout	Yes	No	No	No	No	No	Na	No	No	No	No
FDA	Yas	Yas	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YES
EC1935	Yes	Yes	No	No	No	No	No	No	No	No	No
USP Class VI	YHS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Phthalate Free	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Silicone Free	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes.	Yes	Yes
BAM Tested	Yes	Yos	No	No	No	No	Na	No	No	No	No
ADI Free	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hydrocheck	Na	Yos	Na	No	Na	No	Na	No	Na	No	Na
3A 60-63	TBD	No	No	Yes	Yes	Yes	Yes	No	No	No	No
3A 18-30	Na	No	Class 1	Class 1	Class 1	Class 1	Class 1	Class 1	Class 1	Class 1	Class 1
3A 20-27	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hygienic Design per EHEDG	Yes	No	No	No	No	No	No	No	No	No	No
NSF 61	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
62.Bfr	Yes	No	No	No	Na	No	Na	No	Na	No	No
Application	Pharma, Face, SIP, CIP, Hyglenic Design, Ultra-Law Adhesion, High Pur y Demanos, Sustainable Cleaning	Pharma, Food, Rough SLP & CIP, Well Known and Proven Gasket	Pharma, SIP, CIP, Soce Chemical Resistance	Pharma, Food, High Dhemical Resistance & Tem- perature Range, SIP, CIP	Pharma, Hood, High Chemical R-sistance & Tem- perature Rango B E CIP	Pharma, Food, High Chemical Resistance & Tem- perature Range, SIP, CIP	Pharma, Food, High Chemical Pesislance & Tem- perature Rang; SIE CIP	Pharma, Food, Rough SIP & DIP, Well Known & Proven Gaskeling Material	Pharma, Hood, Rough SIP & CEN Well Known & Proven Gaskoling Material	Pharma, Food. High Chemics Resistance & Term- perature Range, SIP, CIP	Pharma, Food High Chemica Resistance & Te perature Rongs SIP, CIP

**Product Selection Guide** 

Rubber Fab		Tuf-Fle				LD N			
Tuf-Flex <sup>®</sup>						nd Item Nur	nbe	rs	
The Ultimate in Gas	sket Performance	DIN11850/1 (Pipe conne Item No.		2676: Row A 1866 Row A ID (mm)					
Tuf-Flex® is a unitized sanitary gasket compose PTFE grafted to an EPDM rubber inner core. Tuf- is specifically designed to meet critical requirer in the food, pharmaceutical and biotechnolog dustry. Tuf-Flex® is setting new standards for performance and flexibility, maintaining high di sional stability and times. This innovative gasks not impart tasts or oder and provides high pri safety. Tuf-Flex® divose secienter classibility, the	-Flox* Hents by fin- thy will the will be a set of the set of	DIN32676-06-TF-E DIN32676-08-TF-E DIN32676-10-TF-E DIN32676-16-TF-E DIN32676-20-TF-E DIN32676-25-TF-E DIN32676-25-TF-E DIN32676-02-TF-E	06 08 10 15 20 25 32 40	6.2 8.2 10.2 20.2 26.2 32.2 38.2	21.8 21.8 34 34 34 50.5 50.5 50.5	$\left( \right)$		)	
est sealing performance and outstanding service		DIN32676-50-TE-E	50	50.2	64				
with extended uptime.	50 (100)	DIN32676-65-TF-E	65	66.2	91	5	10		
		DIN32676-80-TF-E	80	81.2	106			-	
MAIN SEGMENTS  Pharmaceutical	Marco -	DIN32675-100-TF-E	100	100,2	119		2		
Pharmaceubcal     Biotechnology		Landson and a second second second second							
Biotechnology     Food									
			7 (010)20636	0-0-0	-	ASME BPF	(DIN22676	0	_
Dairy		ISO112 (Pipe conne	7 (DIN32676 ection DIN 1	5: Row B) 1866 Row B	15	ASME BPE (Pipe connect			
CERTIFICATES/DECLARATIONS	and the second se	Item No.			OD (mm)	Item No.			
<ul> <li>3A Sanitary Standards</li> </ul>	Tuf-Flex® provides high flexibility and adaptation to	IS01127-06-TF-E	10,2	7,2	21.8	A42MPGR-TF-050-E1121	1/2"	9,6	21,8
<ul> <li>FDA 21 CFR177.1550</li> </ul>	flanged equipment.	IS01127-08-TF-E	13,5	10,5	21,8	A42MPGR-TF-075-E101	3/4"	16	21,8
<ul> <li>FDA 21 CFR177.2600</li> </ul>		IS01127-10-TF-E	17,2	14,2	21.8	A40MPGR-TF-100-E®	1'	22,3	50,5
<ul> <li>USP Class VI &lt;87&gt;, &lt;88&gt;</li> </ul>		IS01127-15-TF-E	21,3	18,3	50,5	A40MPGR-TF-150-E <sup>2</sup>	1 1/2	35	50,5
<ul> <li>ADI free (EMEA 410/01)</li> </ul>		IS01127-20-TF-E	26,9	23,9	50,5	A40MPGR-TF-200-E <sup>®</sup>	2"	47,7	64
<ul> <li>ASME-BPE Standards</li> </ul>		IS01127-25-TF-E	33,7	29,9	50.5	A40MPGR-TF-250-E <sup>a</sup>	2 1/2"	60,4	77,
A Company of the second s		IS01127-32-TF-E	42,4	38,6	64	A40MPGR-TF-300-E <sup>n</sup>	3"	73,1	91
KEY BENEFITS     Hvalenic design		IS01127-40-TF-E	48,3	44,5	64	A40MPGR-TF-400-E <sup>2</sup>	4'	97,7	119
Excellent SIP and CIP performance		IS01127-50-TF-E	60,3	56,5	77,5	A40MPGR-TF-600-E*	6'	147,1	163
Perfect cleanability		IS01127-65-TF-E	76,1	72,3	91	A40MPGR+TF-800-E <sup>2</sup>	8'	197,6	217
<ul> <li>Wide temperature range:</li> </ul>	TYPE III	IS01127-80-TF-E	88,9	84,5	106	A40MPGR-TF-1000-E1	10*	247,4	26
-29 °C (-20 °F) to 149 °C (300 °F)	Solid PTFE Envelope Tuf-Flex®	IS01127-100-TF-E	114,3	109,9	130	A40MPGR-TF-1200-E <sup>21</sup>	12'	298,2	319
Minimal thermal expansion     High dimensional stability     Superior resistance to cold flow and creep     No intrusion or recession     Flexibility of an elastomer with	Soudo PTC Environment Tommente Type I Ganket Type III PTE PTFE With a Gasteri with full elastomer EPD4 # FRM core Filter	For further information			ithout a listed if	1) 42: Part designation numt 2) Equal to 85 4825-3 (Britis Item number please contact Rul 26 Br	h Standard) bber Fab.	ize gaskets e + Sparta, N	U 0787
chemical resistance of PTFE     Non-stick surface								9 + +1-973-5	

#### Product One-Pager

And more...



#### **Sharing our Success - Case Studies**





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set and they in the late	CPT	Fierback Chillie	Control & New Zee band
A 405 No instrumentary	Colock PT 1	Coshark Margan	Constantine Lenis
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101 DOM: 101 DOM: 1

#### **Rubber Fab**

Case Study: Pharmaceutical Get Caps





#### **Rubber Fab** Case Study: Aloe Vera Juice Processing Tuf-Steel' Gaskets



All of our case studies can be found on our website. Visit: https://rubberfab.com/res ources/case-studies/



#### 4/29/2020