

SQ-S™ GASKET SHEET

NOW AVAILABLE:
SO-S REGULAR SHEET (60"X60")
SO-S "V" RIGID SHEET (60"X60")
SO-S "HUGE" SHEET (77"X77")

**GASKETING
AND
SEALING MATERIALS
FOR THE
NEW MILLENNIUM
MADE BY...**

Inertex®

GOODYEAR
RUBBER PRODUCTS, INC.

☎ 727-342-5088

You can also email us at
GRP@goodyearrubberproducts.com

INERTEX SQ-S™ GASKET SHEET

INERTEX SQ-S GASKET SHEET is the world's first 100% expanded PTFE in a true 60" x 60" format. This material is manufactured by our proprietary *isotropic-expansion* process which breaks all the rules traditional to gasket material manufacturing of the past. *Isotropic-expansion* provides a highly fibrillated microstructure with nearly equal tensile strength in every direction. This unique structure maximizes performance predictability and stability while minimizing creep and cold flow. *INERTEX SQ-S* definitely is an all-purpose gasket sheet that is setting the new standard in gasket technology.

ONE COLOR.....ONE CHOICE

INERTEX SQ-S is made of 100% virgin PTFE. Our *isotropic-expansion* process completely eliminates the need for binders, fillers, or pigments. This material is engineered to replace all filled PTFE gasket sheet materials in various colors such as fawn, blue, off-white, green, or orange. It will eliminate the possibility of misuse of these different colored gasket materials. Plus, gasketing inventories will be greatly reduced with *INERTEX SQ-S*, the one, all-encompassing gasket material.

PURE.....INTEGRAL

INERTEX SQ-S is so pure that it far exceeds the requirements set forth in the rigid SEMASPEC 92010934B-STD according to testing performed by a SEMATECH recognized laboratory. And, since it does not particulate, *INERTEX SQ-S* is the choice for handling ultra-pure fluids such as ultra-pure water, bio-tech, and pharmaceuticals.

SOFT.....BUT STRONG

INERTEX SQ-S is very soft and extremely compressible with relatively light torque. It can be applied in FRP, porcelain, plastic, and glass-lined piping or vessels. Yet, this material is very strong and tough. It can withstand compressive loads of over 40,000 psi without affecting its sealing capability. *INERTEX SQ-S* is virtually impossible to abuse.

THE TIGHTEST

According to the testing done by Ecole Polytechnique Tightness Testing Research Laboratory (TTRL), *INERTEX SQ-S* is one of the tightest sealing gasket materials in the world. It can help meet the most strict regulations of the Clean Air Act. Coupled with excellent chemical compatibility with all VOC's, HAP's, and HON's, *INERTEX SQ-S* becomes the ultimate resolution to the EPA issue.

Distributed by:



USER-FRIENDLY

INERTEX SQ-S has an unlimited shelf life and will not become brittle, age, or otherwise deteriorate in the application. This material is unaffected by UV, ozone, and corona. It is easily hand or die cut. And, when necessary, *INERTEX SQ-S* can be removed easily from flange surfaces due to the non-sticking nature of PTFE.

QUALITY ASSURANCE

INERTEX SQ-S is manufactured in our ISO 9002 certified facility (Certification #94/4207). To assure receiving *INERTEX SQ-S* in the best condition each and every time, all sheets are individually rolled onto a paper tube and shrink-wrapped before being put into a blister sleeve and sturdy box.

INERTEX SQ-S Typical Properties

ASTM	Compressibility (F-36)	68%
	Recovery (F-36)	12%
	Sealability (F-37-B)	0.00 ml/hr (Fuel A) 0.02 ml/hr (Nitrogen)
	Creep Relaxation (F-38)	32% at 212°F 16% at 73°F
Temperature Limit	- 450°F to + 600°F	
Pressure Limit	Full Vacuum to 3000 psi	
pH Limit	pH 0 -14 EXCEPT MOLTEN ALKALI METALS AND ELEMENTAL FLUORINE	
FDA / USDA	Suitable INCLUDING RED INK FOR BRAND ID	
Flammability	Will Not Burn	
Bacterial Growth	Will Not Support	
Sheet Size*	60" x 60" (1524mm x 1524mm)	
Thickness	1/16", 1/8", 1/4", 1mm, 0.5mm	
Tolerance	1/16" ± 0.006", 1/8" ± 0.010"	
Specific Gravity	0.85 ± 0.04	
THIS DATA IS FOR GENERAL REFERENCE ONLY AND SHOULD NOT BE THE SOLE MEANS OF SELECTING <i>INERTEX SQ-S</i> . TESTING DETAILS FOR ASTM, PSA, TTRL(MTI), AND SEMASPEC AVAILABLE UPON REQUEST. *80" X 80" IN DEVELOPMENT.		

THE FAMILY

INERTEX family represents a full line of 100% expanded PTFE gasketing and packing. Other products of *INERTEX* are as follows:

- *INERTEX UHF* Joint Sealant
- *INERTEX UHF* Gasket Tape
- *INERTEX EZ-Seal* Insertable Gaskets
- *INERTEX* Valve Stem Packing

Custom designed products are also available upon request. Please call our technical department at 1-800-732-5835 for your special requirements.

INERTECH INC.

TEL: 1-800-732-5835
FAX: 1-800-732-8828



UHF

JOINT

SEALANT

INERTEX[®]

UHF JOINT SEALANT

- TEMPERATURE RANGE, -450° F UP TO +600° F
- PRESSURE RANGE, FULL VACUUM UP TO 3000 PSIG
- INERT TO ALL COMMON CHEMICALS (pH 0-14)
- MEETS FDA REQUIREMENT 21 CFR 177.1550

SIZE

Manufactured under U.S. Patent no. 5,098,625.
INERTEX[®] is a registered trademark of INERTECH, Inc.

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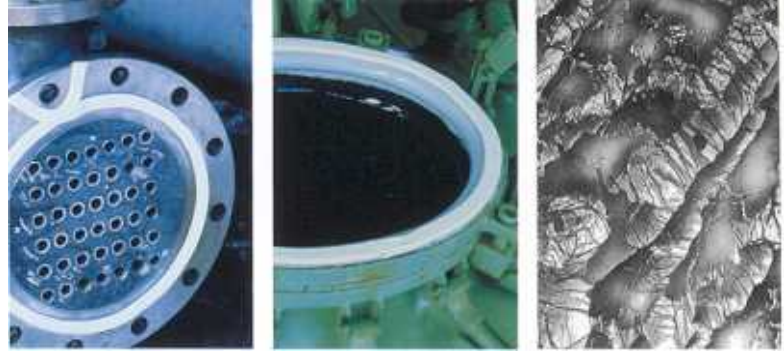
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INERTEX® UHF JOINT SEALANT



INERTEX® UHF Joint Sealant looks and feels different from other Joint Sealant products. It is smooth and flexible with an exceptionally uniform texture and density. Under the surface is a microscopic structure that makes this remarkable material the strongest, most versatile sealant available today.

INERTEX® UHF Joint Sealant is made of 100% expanded virgin PTFE. INERTEX® alone uses a patented process that produces a uniform and highly fibrillated microstructure with thousands of small fibers running in many directions. These create a soft and pliable, yet very tough oval-shaped joint sealant that is very compressible with a high tensile strength. INERTEX® UHF Joint Sealant provides excellent cold flow and creep relaxation resistance. It is FDA suitable and it comes with an easy peel off self-adhesive backing that makes installation simple.

INERTEX® HIGH PERFORMANCE

- 100% expanded virgin PTFE
- Withstands a wide range of temperatures from - 450° F to + 600° F
- Unaffected by common chemicals, pH range, 0-14
- Non-contaminating, non-toxic
- FDA suitable (FDA 21 CRR177.1550)
- Will not age or harden in service
- Extremely strong; pressure range from full vacuum to 3000 PSI

STANDARD AND CUSTOM SIZES FOR ANY NEED

INERTEX® UHF Joint Sealant can be ordered in a wide variety of sizes and lengths. All sizes with the exception of 1MM include an easy peel, self-adhesive backing. Custom sizes and shapes are available for special applications. Consult your INERTEX® distributor about custom INERTEX® products.

Standard Sizes		Size Selection Reference	
Size	Standard Length (ft/spool)	150-300 lb. ANSI Flanges	Use this size
1MM	100, 1000	1/2" - 3/4"	1/8"
1/8"	100, 1000	1" - 1-1/2"	3/16"
3/16"	75, 750	2" - 3-1/2"	1/4"
1/4"	50, 100, 500	4" - 6"	3/8"
3/8"	25, 50, 250	8" - 16"	1/2"
1/2"	15, 30, 150	18" - 20"	5/8"
5/8"	15, 30, 150	24" - 36"	3/4"
3/4"	15, 30, 50, 100,	36" - 60"	1"
1"	15, 30, 75	60" - ↑	2"
2"	39		

Non-standard or Special Size Flanges	
Sealing Width	Use this size
1/8" - 1/4"	1/8"
5/16" - 3/8"	3/16"
7/16" - 5/8"	1/4"
3/4" - 1"	3/8"
1-1/8" - 1-1/2"	1/2"
1-5/8" - 2"	5/8"
2" - 2-1/2"	3/4"
2-1/2" - 3"	1"
3" - ↑	2"

EASY INSTALLATION

1. Choose INERTEX® UHF Joint Sealant that is approximately 1/3 to 1/2 the width of the sealing surface.
2. Peel off the adhesive backing and apply it around the flange inside the bolt circle.
3. Overlap ends about 3/4" at a bolt hole.
4. Follow standard torquing sequence to tighten.

INERTECH CUSTOMER SERVICE

INERTECH manufactures a full line of advanced sealing products including Gasket Sheet, Gasket Tape, Joint Sealant, Valve Stem Packing, Thread Tape and EZ-Seal Insertable Gaskets. For assistance with custom applications or for more information, consult your INERTEX® distributor.

Distributed By:

For more information
Call 800-732-5835

UHF

GASKET
TAPE

INERTEX[®]

UHF GASKET TAPE

- TEMPERATURE RANGE,
-450°F UP TO +600°F
- PRESSURE RANGE, FULL
VACUUM UP TO 3000 PSIG

• INERT TO ALL COMMON
CHEMICALS (pH 0-14)

• MEETS
21 CFR 177.1550

SIZE

INERTEX[®]

UHF GASKET TAPE

- TEMPERATURE RANGE,
-450°F UP TO +600°F
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21 CFR 177.1550

SIZE

Manufactured under U.S. Patent no. 5,098,525.
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INERTEX UHF GASKET TAPE

INERTEX UHF Gasket Tape looks and feels different from other gasket products. It is soft and flexible with an exceptionally uniform density. Under the surface is a microscopic structure that makes this remarkable material **one of the strongest, most versatile gasket materials available today!**

Manufactured in our **ISO 9002** facility, **INERTEX UHF Gasket Tape** is made of 100% expanded virgin PTFE. **INERTEX** alone uses a patented process that produces a **Uniform and Highly Fibrillated** microstructure with thousands of small fibers running in many directions. These create a soft and pliable, yet, very tough gasket material that can seal surface irregularities up to .007" in depth with a relatively low clamping force. **INERTEX UHF Gasket Tape** is FDA suitable and comes with a **full paper covered self-adhesive** backing that makes installation simple.

INERTEX UHF Gasket Tape FOR DEPENDABLE PERFORMANCE

- 100% expanded virgin PTFE
- Withstands a wide range of temperatures from -450°F to +600°F
- Pressures from full vacuum to 3000 PSI
- Unaffected by common chemicals, pH range: 0 - 14
- Soft and compressible under low bolt loads
- No creep or cold flow
- Non-contaminating, non-toxic, silicone free
- FDA suitable (FDA 21 CFR177.1550)
- Helps you meet tough EPA standards for fugitive flange emissions

STANDARD AND CUSTOM SIZES FOR ANY NEED

INERTEX UHF Gasket Tape standard sizes are listed below. Lengths are available in either 50 or 100 feet with the exception of 8" wide (5 to 25 feet). All sizes include a full paper covered self-adhesive backing. Custom sizes are available for special applications.

Standard Sizes	Width Selection									
	Thickness	1/2"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"
.010"	•	•	•	•	•	•	•	•	•	•
.015"			•	•	•	•	•	•	•	•
.020"	•	•	•	•	•	•	•	•	•	•
.031"			•	•	•	•	•	•	•	•
.040"	•	•	•	•	•	•	•	•	•	•
.050"			•	•	•	•	•	•	•	•



LASTS LONGER, SAVES TIME, COST AND IS VERY VERSATILE

- Excellent for use on glass lined, plastic, and FRP plastic flanges
- Can be used on odd shaped flanges
- Can be used as an insulating tape
- Excellent for repairing worn spiral wound and metal gaskets
- Eliminates the need for etched PTFE
- Wider widths are useful for volume cutting of gaskets
- Easy to use, will not unravel and is simple to install

MANY APPLICATIONS

INERTEX UHF Gasket Tape can be used wherever a thin gasket is needed and wherever an FDA suitable material is required. Industries currently using **INERTEX UHF Gasket Tape** Include:

- Chemical Manufacturing and Transporting
- Distilling
- Food Equipment Manufacturing
- Food Processing
- Heating and Air
- Automotive Paint Booths
- Petrochemical Production
- Pharmaceutical
- Power Generation
- Pulp and Paper
- Pump and Valve

THE FAMILY

The **INERTEX** family represents a full line of 100% expanded PTFE gasketing and packing. Other products from the **INERTEX** family are as follows:

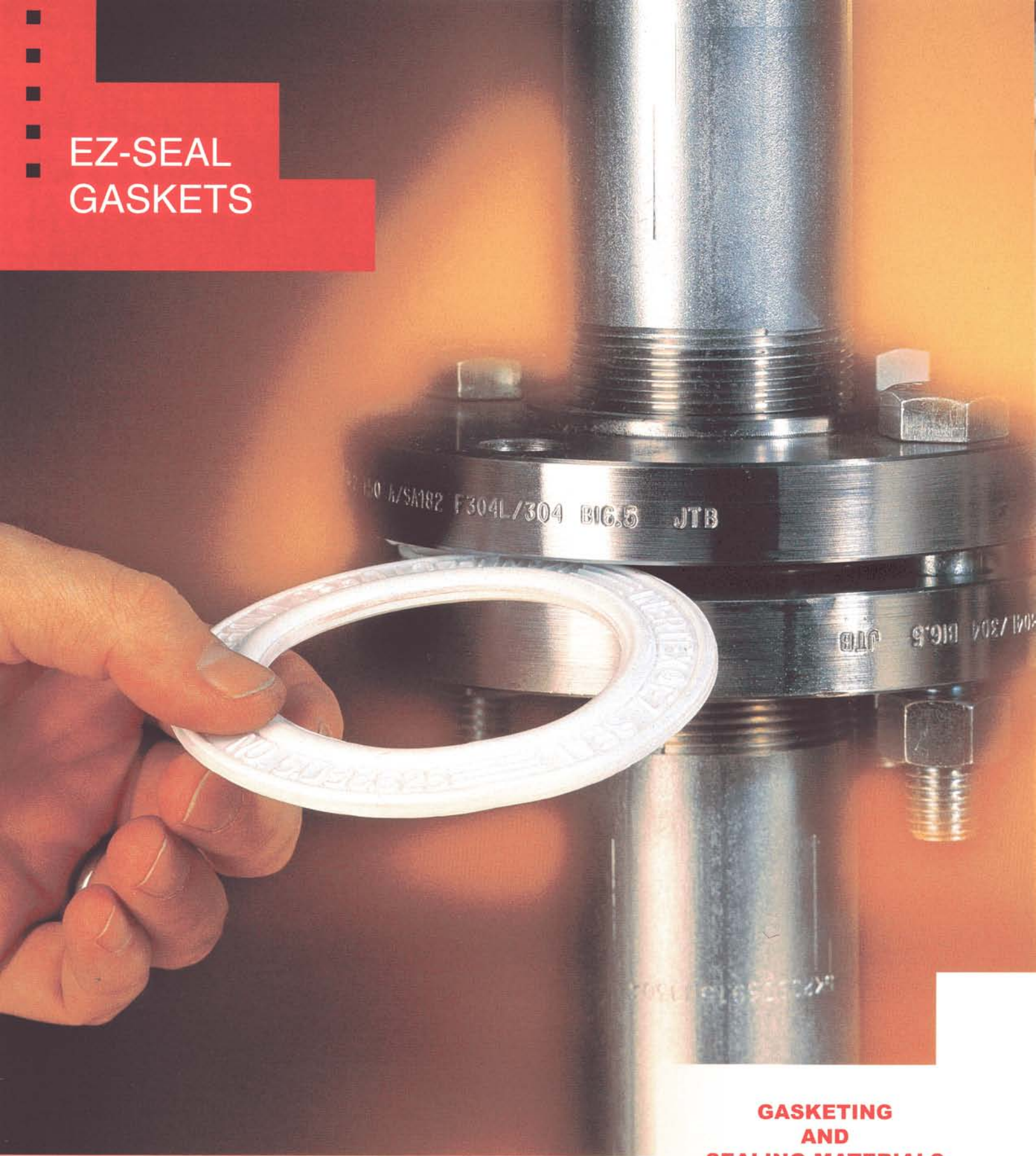
- **INERTEX UHF** Joint Sealant
- **INERTEX SQ-S** Gasket Sheet
- **INERTEX EZ-Seal** Insertable Gaskets
- **INERTEX** Valve Stem Packing

Custom designed products are also available upon request. Please call our technical department at 1-800-732-5835 for your special requirements.

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EZ-SEAL
GASKETS



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INERTEX EZ-SEAL GASKETS



Self-aligning INERTEX EZ-Seals are a molded, rigid, densified form of our UHF Joint Sealant. Manufactured in our ISO 9002 facility under U.S. Patent #5,098,625, **INERTEX EZ-Seals** provide the user ease of installation and maximum performance for applications where flanges can not be separated far enough apart to lay Joint Sealant in place.

The raised inner portion of the **INERTEX EZ-Seal** is designed to compress easily. As it is being compressed, this raised surface fills irregularities, voids, and nicks on the flange contact surface (even on wire drawn flanges). **EZ-Seal** Gaskets require less bolting stress to seal than conventional PTFE envelope gaskets, plain PTFE gaskets, or filled PTFE products. **INERTEX EZ-Seals** are one of the most effective gaskets for **glass lined, plastic or FRP flanges!** **INERTEX EZ-Seals** can be used with all ANSI raised face flanges. Once installed, **EZ-Seal** Gaskets provide a long and dependable service life.

INERTEX EZ-Seals FOR DEPENDABLE PERFORMANCE

- 100% expanded virgin PTFE
- Withstands a wide range of temperatures from -450°F to +600°F
- Pressure range from full vacuum to 3000 PSI
- Unaffected by common chemicals, pH range: 0 - 14
- No creep or cold flow
- Self aligning within bolt circle
- Non-contaminating, non-toxic
- FDA suitable (FDA 21 CFR177.1550)
- Application limits embossed on each seal to assure proper use
- Helps you meet tough EPA standards for fugitive flange emissions

EZ-SEAL GASKET APPLICATIONS

INERTEX EZ-Seal Gaskets can replace:

- PTFE envelope gaskets
- Sheet PTFE gaskets
- Wire inserted molded PTFE gaskets
- Asbestos and non-asbestos gaskets
- Spiral wound gaskets
- Filled PTFE gaskets
- Rubber gaskets

Industries currently using **INERTEX EZ-Seals** include:

- | | |
|---|-----------------------|
| Chemical Manufacturing and Transporting | • Petrochemical |
| Distilling | • Pharmaceutical |
| Food Equipment | • Power Generation |
| High Purity/Ultra-Pure Water | • Pulp and Paper |
| Food and Beverage Processing | • Marine |
| | • Steel Manufacturing |

INERTEX THE RIGHT CHOICE!

All **EZ-Seal** Gaskets are individually packaged and protectively wrapped. Each **EZ-Seal** is clearly marked on the gasket face with size, application limits, and the **INERTEX** brand name.

INERTEX EZ-Seals SIZE CHART

(STANDARD INCH SIZES)

USE EZ-SEALS THIS SIZE	FOR THESE APPLICATIONS SIZING BASED UPON ASME/ANSI B16.5 CLASS PIPE FLANGES			
	150#	300#	400#	600#
1/2X150	1/2X150			
1/2X300		1/2X300	1/2X400	1/2X600
3/4X150	3/4X150			
3/4X300		3/4X300	3/4X400	3/4X600
1X150	1X150			
1X300		1X300	1X400	1X600
1-1/4X150	1-1/4X150			
1-1/4X300		1-1/4X300	1-1/4X400	1-1/4X600
1-1/2X150	1-1/2X150			
1-1/2X300		1-1/2X300	1-1/2X400	1-1/2X600
2X150	2X150			
2X300		2X300	2X400	2X600
2-1/2X150	2-1/2X150			
2-1/2X300		2-1/2X300	2-1/2X400	2-1/2X600
3X150	3X150			
3X300		3X300	3X400	3X600
3-1/2X150	3-1/2X150			
3-1/2X300		3-1/2X300	3-1/2X400	3-1/2X600
4X150	4X150			
4X300		4X300	*****	*****
5X150	5X150			
5X300		5X300	*****	*****
6X150	6X150			
6X300		6X300	*****	*****
8X150	8X150			
8X300		8X300	*****	*****
10X150	10X150			
10X300		10X300	*****	*****
12X150	12X150			
12X300		12X300	*****	*****

THE FAMILY

The **INERTEX** family represents a full line of 100% expanded PTFE gasketing and packing. Other products from the **INERTEX** family are as follows:

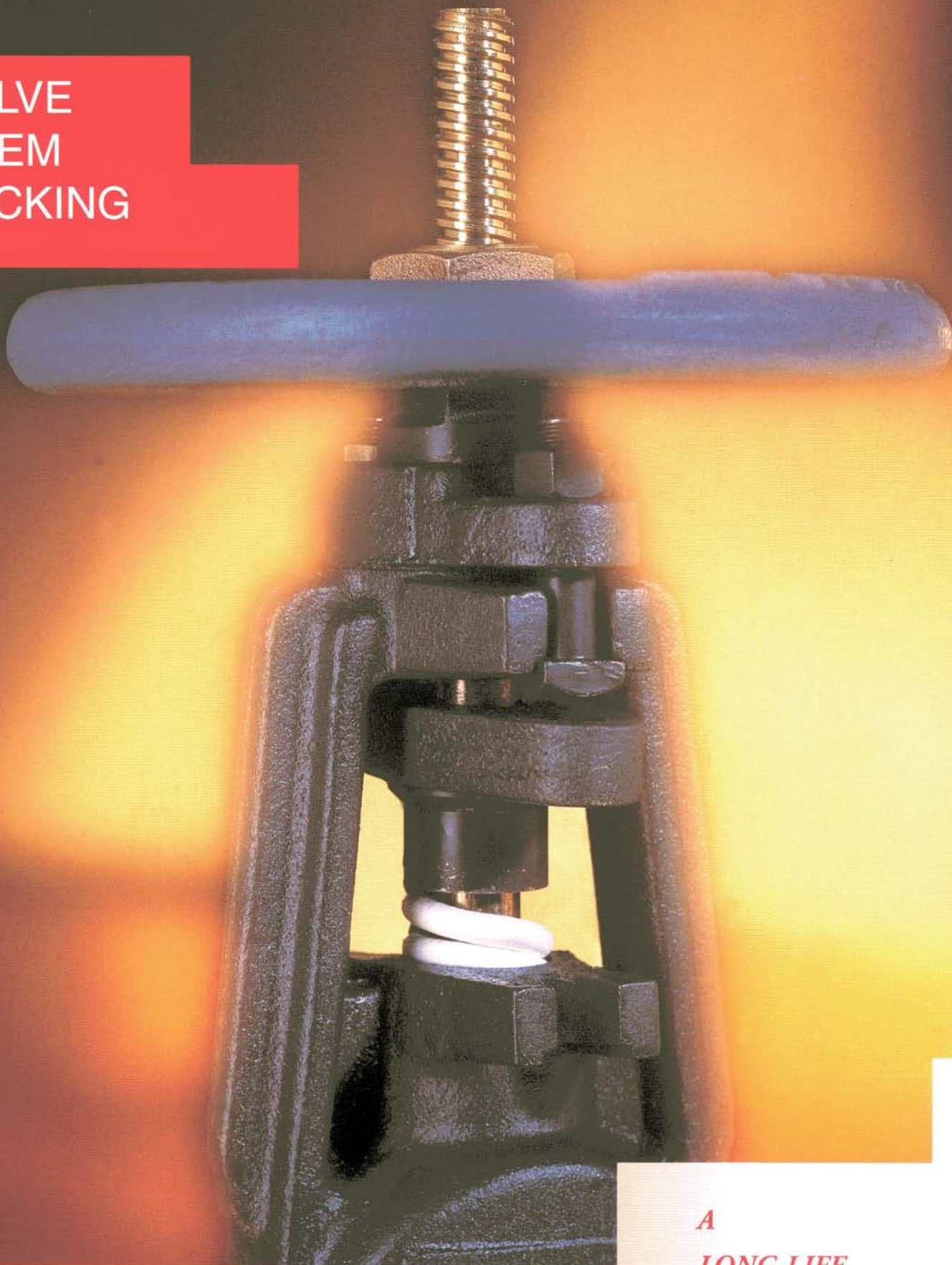
- **INERTEX** UHF Joint Sealant
- **INERTEX** SQ-S Gasket Sheet
- **INERTEX** UHF Gasket Tape
- **INERTEX** Valve Stem Packing

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Distributed By:

- VALVE
- STEM
- PACKING



*A
LONG LIFE,
HIGH PERFORMANCE
VALVE STEM*

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THE RIGHT CHOICE

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INERTEX VALVE STEM PACKING

INERTEX Valve Stem Packing is made from 100% EXPANDED PTFE. Manufactured in our ISO 9002 certified facility, this highly pliable material will conform to worn valve stems and packing glands to help eliminate the need for costly down time and repair. The unique properties of PTFE assure valve operation even after long periods of valve inactivity.

INERTEX ... THE RIGHT CHOICE! FOR LONGER SERVICE LIFE

Because **INERTEX** uses 100% pure PTFE with no fillers or additives, **INERTEX Valve Stem Packing** will not harden or dry out in service. **INERTEX Valve Stem Packing normally will outlive the life of the valve!**

INERTEX VALVE STEM PACKING FOR DEPENDABLE PERFORMANCE

- 100% expanded virgin PTFE
- Withstands a wide range of temperatures from -450°F to +600°F
- Unaffected by common chemicals, pH range: 0 - 14
- Non-contaminating, non-toxic
- FDA suitable (FDA 21 CFR177.1550)
- Will not age, harden, shrink or dry out in service
- Withstands the pressure limits for which the valve is designed
- Adds service life to old and worn valves
- Valve still activates easily after long periods of non-use
- Helps you meet tough EPA requirements for fugitive emissions

INERTEX VALVE STEM PACKING STANDARD AND CUSTOM SIZES

INERTEX Valve Stem Packing is available in the sizes listed below. Please call Inertech, Inc. for custom sizes for non-standard valves and special applications.

1/16 X 50'	1/4 X 12'
3/32 X 25'	9/32 X 9'
3/32 X 50'	5/16 X 7'
1/8 X 25'	3/8 X 7'
5/32 X 25'	1/2 X 12'
3/16 X 15'	5/8 X 25'
3/16 X 25'	3/4 X 25'
7/32 X 15'	1 X 15'
7/32 X 25'	



INERTEX Valve Stem Packing EASY INSTALLATION

INERTEX Valve Stem Packing is easy to install. Follow these simple steps to create a perfect fitting, high density packing that conforms to fill any irregularities or voids within the stuffing box.

1. Isolate the valve pressure and remove old packing from the stuffing box.
2. Select the largest size **INERTEX Valve Stem Packing** that will fit by hand into the stuffing box.
3. Estimate the length needed to fill gland and cut one continuous length.
4. Wind the packing around the stem and push into stuffing box.
5. Compress by tightening the gland nut.

INERTEX Valve Stem Packing BROAD SPECTRUM OF APPLICATIONS

Industries currently using **INERTEX Valve Stem Packing** include:

- Chemical Manufacturing and Transporting
- Distilling
- Food Equipment
- Food and Beverage Processing
- Petrochemical
- Pharmaceutical
- Power Generation
- Pulp and Paper
- Marine
- Steel Manufacturing

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- **INERTEX SQ-S** Gasket Sheet
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Distributed By:

INERMET

INSERTABLE EXPANDED PTFE GASKET WITH CORRUGATED METAL INSERT

THERMAL CYCLING GASKETS AT THEIR BEST.™



EXPANDED PTFE
WITH RECOVERY

HIGH TIGHTNESS
LOW LOADS

LAYER 1
EXPANDED
PTFE

LAYER 2
Corrugated SS
or other metal
as required

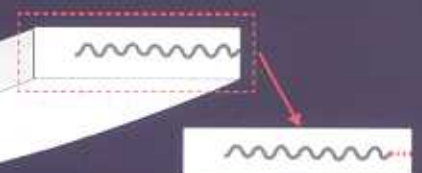
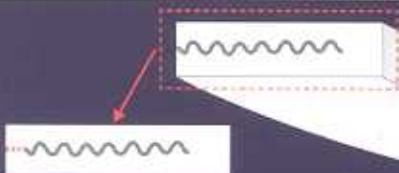
HIGH CREEP
RESISTANCE

EXCELLENT
RELIABILITY

LESS
RETORQUING

CYCLICAL
CAPABILITIES

LAYER 3
EXPANDED
PTFE



INERMET PITA STYLE

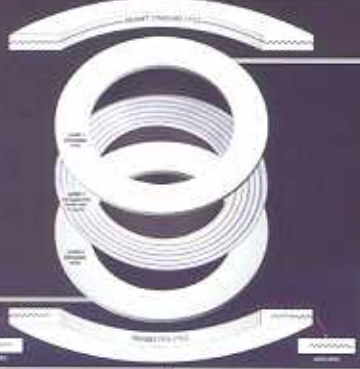
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INERTEX[®] Inermets are made with a corrugated metal insert (typically 24 gauge 316ss) sandwiched between two layers of **INERTEX[®] SQ-S Isotropic Expanded PTFE gasket sheets**. Typically the ePTFE sheet thickness is 1/16" (1mm also available.)

TIGHTEST SEALING GASKET PLUS THERMAL CYCLING CAPABILITIES

INERTEX[®] SQ-S Isotropic Expanded PTFE gasket sheets are the tightest sealing ePTFE under 600°F! When coupled with the corrugated metal insert, these gaskets are "energized" allowing the gasket to compensate for extreme temperature variations while still providing the tightest seal.

EXTREMELY RESISTANT TO BLOW OUT

The thin profile of the highly compressible **INERTEX[®] ePTFE Sheet** plus the reinforcement of the corrugated metal insert makes this an ideal product for steam lines, blow lines, hand hole and manway gaskets, or other applications where blow-out resistance is critical.

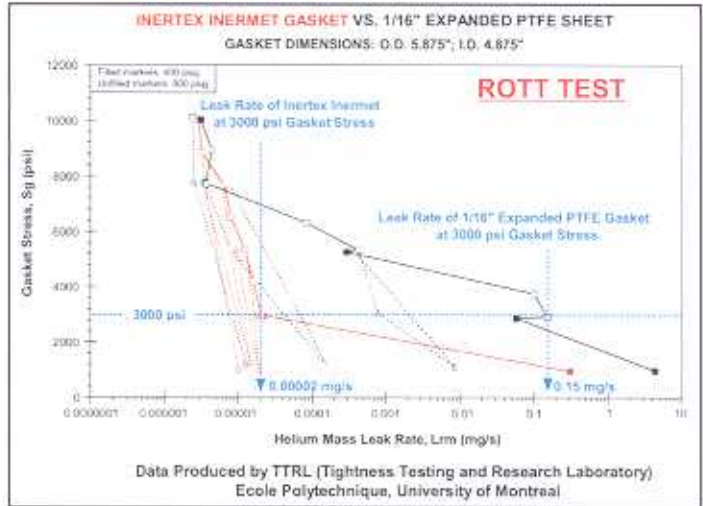
ANY SIZE / ANY CONFIGURATION



Inermets can be fabricated into nearly any style and shape of gasket including oval manways, ribbed heat exchangers, strips, plates, or others as required.

INERMET PITA STYLE

The **PITA style Inermet** (as illustrated) has the metal inserted in the expanded PTFE sheet as a one piece construction. The ID of the ePTFE is solid (not split) which isolates the metal from the fluids. As a further enhancement, in applications where electrical arcing might take place, the



**Suggested Torque Values (ASME/ANSI Raised-Face Flanges)
Flat Ring Gasket for ASME/ANSI B16.5 Pipe Flanges and Flanged Fittings**

Class 150	Tightness Class				
	T1	T2	T3	T4	T5
Flange Size (NPS)	MINIMUM TORQUE VALUE per bolt				
(inch)	(ft-lb)				
2	17	17	20	37	70
2-1/2	20	20	23	43	82
3	29	29	34	64	120
3-1/2	17	17	19	36	67
4	21	21	24	45	85
5	33	33	36	67	127
6	43	43	45	85	161
8	61	61	61	115	218
10	61	61	61	109	207
12	83	83	83	145	275

Above Torques are Typical Values for an Internal Pressure of 150psi

**Suggested Torque Values (ASME/ANSI Raised-Face Flanges)
Flat Ring Gasket for ASME/ANSI B16.5 Pipe Flanges and Flanged Fittings**

Class 300	Tightness Class				
	T1	T2	T3	T4	T5
Flange Size (NPS)	MINIMUM TORQUE VALUE per bolt				
(inch)	(ft-lb)				
2	10	10	12	22	42
2-1/2	14	14	17	31	59
3	21	21	24	46	87
3-1/2	25	25	27	52	98
4	31	31	35	65	124
5	41	41	43	82	154
6	36	36	36	69	130
8	61	61	61	109	205
10	70	70	70	114	214
12	108	108	108	170	321

Above Torques are Typical Values for an Internal Pressure of 300psi

Inermet Specifications
(Nominal Values)

Temperature Range:
-450 °F to +600 °F

Pressure Range:
Full vacuum to 3000 psi

Chemical Compatibility:
ePTFE is 0 to 14 pH (excepting elemental fluorines and molten alkali metals)
(Metals 316 as standard, others as required)

ROTT Test Data:
Gb = 348
a = .276
Gs = 4.0E-09
Tp Max = 29,669
Tp Min = 6,902
S₁₀₀ = 1241
S₁₀₀₀ = 2343
S₁₀₀₀₀ = 4425

Max Crush Resistance:
>25,000 psi

HOBT 2: @ 1000 psi
628 F (test 1)
677 F (test 2)
>700 F (test 3)



by **inertech, Inc.**

INERTEX[®] Inermet RRTC Gaskets



INERTEX[®] Inermet RRTC Gasket Nozzle Design (Type N)

One Style Fits Most 18" and 20" Nozzles

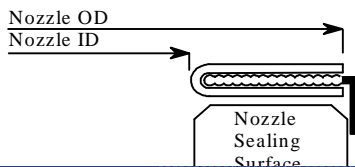
INERTEX[®] Inermet RRTC Gasket Dome Lid Design (Type DL)

Stays in Place Inside Tank Car Dome Groove to Lessen Handling and Positioning Problems.

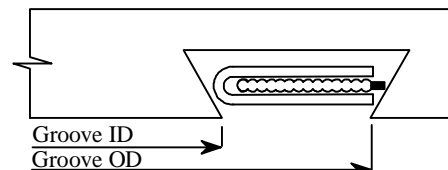
Inertech, Inc.'s **INERTEX[®] Inermet Rail Road Tank Car Gaskets (RRTC's)** are Engineered to Solve Problems Relating to Transportation of Aggressive Chemicals.

- 100% Expanded PTFE (Teflon[®]) Facings Wrapped Around a 316ss Corrugated Insert
- Facings are Nearly 100% Chemically Inert (0 to 14 pH)
- Standard and Custom Sizes Available
- Expanded PTFE Assures Ease of Opening Dome and Easy Removal of Gaskets
- Designed to Seal Against Uneven or Rough Surfaces
- Low Stress to Seal Compared to Conventional Flat Gaskets
- Resists Cutting; Won't Crack, Harden, or Distort Like Rubber Gaskets
- The Only "Complete" Design Available
- Corrugated Insert Provides Dynamic Response to Compensate for Railcar Vibration and Minimizes Gasket "Creep and Cold Flow"
- Mechanically Secured to Manway. Will Not Fall into Railcar.

INERTEX[®] Inermet RRTC Gasket Nozzle Design



INERTEX[®] Inermet RRTC Gasket Cover Design





316ss tabs secure the gasket to the Nozzle and prevent it from falling into the tank car. (bend down to fit nozzle)



316ss tabs secure the gasket into the Cover Groove to prevent the gasket from falling out.



All of Inertech, Inc.'s Inernet Gasket Designs Incorporate a 316ss Corrugated Insert to Provide an Internal Dynamic Response and Resistance to Gasket Load to Ensure a Positive Seal for Your Railcar Fleet.

For Pricing, Technical Assistance, or for a **No-Risk Trial** contact us at:

inertech, Inc.

641 Monterey Pass Road
Monterey Park, CA 91754-2718

Ph: (800) 463-7839 Fax: (626) 282-7569
Or Email us at: info@inertech.com

INERTEX® Products Offer Real Gasket Solutions to Real Gasketing Problems

GOODYEAR
RUBBER PRODUCTS, INC.

☎ 727-342-5088

You can also email us at
GRP@goodyearrubberproducts.com



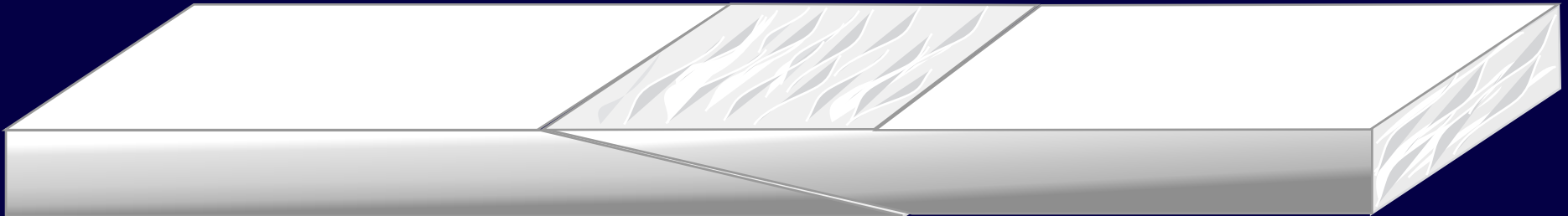
SQ-S ISOTROPIC GASKET SHEET TAPE

Skiving Method



Create a generous "skived" cut as shown

Overlapped Method



Between 2 1/2" & 3 1/2"
depending on thickness

inertech, Inc.



NEW INERTEX LOW-TORQUE GASKET TECHNOLOGIES INCLUDE:

INERTEX "LTC" or "LTC-NR" LOW-TORQUE GASKETS and INERTEX "OPRA" REDUCED AREA GASKETS

INERTEX PRODUCT	INERTECH CODE NUMBER	NOMINAL THICKNESS	UNIT	NOMINAL PIPE SIZE	UNIT	FLANGE CLASS	UNIT
-----------------	----------------------	-------------------	------	-------------------	------	--------------	------

Inertex Gaskets for Low Torque Applications	"LTC" = LTG1000150 "OPRA" = OPW01000150	0.1250	INCH	1	INCH	150	LB
Inertex Gaskets for Low Torque Applications	"LTC" = LTG1500150 "OPRA" = OPW01500150	0.1250	INCH	1 1/2	INCH	150	LB
Inertex Gaskets for Low Torque Applications	"LTC" = LTG2000150 "OPRA" = OPW02000150	0.1250	INCH	2	INCH	150	LB
Inertex Gaskets for Low Torque Applications	"LTC" = LTG3000150 "OPRA" = OPW03000150	0.1250	INCH	3	INCH	150	LB
Inertex Gaskets for Low Torque Applications	"LTC" = LTG4000150 "OPRA" = OPW04000150	0.1250	INCH	4	INCH	150	LB
Inertex Gaskets for Low Torque Applications	"LTC" = LTG6000150 "OPRA" = OPW6000150	0.1250	INCH	6	INCH	150	LB
Inertex Gaskets for Low Torque Applications	"LTC" = LTG8000150 "OPRA" = OPW8000150	0.1250	INCH	8	INCH	150	LB
Inertex Gaskets for Low Torque Applications	"LTC" = LTG10000150 "OPRA" = OPW10000150	0.1250	INCH	10	INCH	150	LB
Inertex Gaskets for Low Torque Applications	"LTC" = LTG12000150 "OPRA" = OPW12000150	0.1250	INCH	12	INCH	150	LB
Inertex Gaskets for Low Torque Applications	"LTC" = LTG1400150 "OPRA" = OPW14000150	0.1250	INCH	14	INCH	150	LB

INERTEX PRODUCTS TORQUE REQUIREMENTS

(BOLTS MUST BE LUBRICATED TO ACHIEVE THESE VALUES)

LTC & LTC-NR DESIGNS	OPRA PIPE WALL DESIGN	OPRA PW WITH COMPRESSED EARS
----------------------	-----------------------	------------------------------

13	23	18
14	27	23
19	41	36
25	53	48
19	49	44
24	71	64
36	89	81
36	105	98
41	128	121
85	163	155

OTHER COMMON GASKETING PRODUCTS USED

APPROXIMATE MINIMUM TORQUE REQUIREMENTS

COMPETITIVE LOW-TORQUE GASKET DESIGNS PUBLISHED TORQUE REQUIREMENTS

MIN ASSEMBLY TORQUE	MIN ASSEMBLY TORQUE	OPTIMUM TORQUE	MIN ASSEMBLY TORQUE	MIN ASSEMBLY TORQUE	MIN ASSEMBLY TORQUE
---------------------	---------------------	----------------	---------------------	---------------------	---------------------

GORE	GARLOCK	KC	GARLOCK	GORE	INERTEX
TRIGUARD* LOW TORQUE GASKET	STRESS SAVER* LOW TORQUE GASKET	MULTI-RING*	GYLON* 3545 (2400 psi stress)	GR* SHEET (2800 psi STRESS)	SQ-S* SHEET (2800 psi STRESS)
(FT-LB)	(FT-LB)	(FT-LB)	(FT-LB)	(FT-LB)	(FT-LB)

36	15-35	N/A	45	51	54
49	20-45	25	59	68	73
86	35-80	55	105	122	129
128	50-120	86	155	181	192
86	35-80	60	105	122	129
131	45-115	166	159	185	196
188	65-165	245	240	280	281
184	65-160	240	222	259	276
267	95-230	342	323	376	400
376	135-335	437	456	531	564

*GARLOCK STRESS-SAVER and GYLON are registered trademarks of Garlock Sealing Technologies

*GORE-TEX TRIGUARD and GR are registered trademarks of W.L. Gore and Assoc.

*K.C. MULTI-RING is a registered trademark of Engineered Piping Systems, Inc.



NEW INERTEX LOW-TORQUE GASKET TECHNOLOGIES INCLUDE:

INERTEX "LTC" or "LTC-NR" LOW-TORQUE GASKETS and INERTEX "OPRA" REDUCED AREA GASKETS

INERTEX PRODUCT	INERTECH CODE NUMBER	NOMINAL THICKNESS	UNIT	NOMINAL PIPE SIZE	UNIT	FLANGE CLASS	UNIT
Inertex Gaskets for Low Torque Applications	"LTC" = LTG16000150 "OPRA" = OPW16000150	0.1250	INCH X	16	INCH X	150	LB
Inertex Gaskets for Low Torque Applications	"LTC" = LTG18000150 "OPRA" = OPW18000150	0.1250	INCH X	18	INCH X	150	LB
Inertex Gaskets for Low Torque Applications	"LTC" = LTG2000150 "OPRA" = OPW2000150	0.1250	INCH X	20	INCH X	150	LB
Inertex Gaskets for Low Torque Applications	"LTC" = LTG2400150 "OPRA" = OPW2400150	0.1250	INCH X	24	INCH X	150	LB

INERTEX PRODUCTS TORQUE REQUIREMENTS

(BOLTS MUST BE LUBRICATED TO ACHIEVE THESE VALUES)

LTC & LTC-NR DESIGNS	OPRA PIPE WALL DESIGN	OPRA PW WITH COMPRESSED EARS
	153	145
	178	165
	177	165
	222	211

OTHER COMMON GASKETING PRODUCTS USED

APPROXIMATE MINIMUM TORQUE REQUIREMENTS

COMPETITIVE LOW-TORQUE GASKET DESIGNS			COMMONLY USED GASKET SHEET PRODUCTS		
PUBLISHED TORQUE REQUIREMENTS					
MIN ASSEMBLY TORQUE	MIN ASSEMBLY TORQUE	OPTIMUM TORQUE	MIN ASSEMBLY TORQUE	MIN ASSEMBLY TORQUE	MIN ASSEMBLY TORQUE
GORE	GARLOCK	KC	GARLOCK	GORE	INERTEX
TRIGUARD* LOW TORQUE GASKET	STRESS SAVER* LOW TORQUE GASKET	MULTI-RING*	GYLON* 3545 (2400 psi stress)	GR* SHEET (2800 psi STRESS)	SQ-S* SHEET (2800 psi STRESS)
(FT-LB)	(FT-LB)	(FT-LB)	(FT-LB)	(FT-LB)	(FT-LB)
339	120-300	400	N/A	N/A	
381	N/A	495	N/A	N/A	
359	N/A	465	N/A	N/A	
504	N/A	590	N/A	N/A	

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*GORE-TEX TRIGUARD and GR are registered trademarks of W.L. Gore and Assoc.

*K.C. MULTI-RING is a registered trademark of Engineered Piping Systems, Inc.

Thank you for your interest in Inertech's patented OPRA® technology. The information which follows should help you understand the OPRA® technology and we hope you will find the additional files and photos helpful in allowing your customer to picture the OPRA® style and to review the application parameters.

Background:

OPRA® stands for One Piece Reduced Area. The OPRA® gasket design has been developed in response to the use limitations and high cost of Inertech's LTC (Low Torque Composite) gaskets. OPRA® gaskets have a broad opportunity for sealing plastic flanges, and thin, flat face metal vessel flanges where all other PTFE based gaskets simply require an excessive assembly bolt load. Other products in this category include the GORE-TEX® TriGuard™ gasket, the Garlock® Stress Saver® gasket, our own LTC and LTC-NR gaskets, the K-C Multi-ring gasket, and some of the sheet materials believed to be capable of sealing such applications but requiring far too much load to be effective for such applications.

Material:

All OPRA® gaskets are 100% **INERTEX®** SQ-S Expanded PTFE Gasket Sheet. No skins to crack or delaminate, no elastomers to contaminate and lowers the overall cost to the end-user considerably from those other products mentioned above.

Concept:

A design patent has been granted for the OPRA® gasket which covers the unique approach of dramatically reducing the contact area of gaskets (approximately 67% reduction of gasket material) intended for low bolt load sealing applications including FRP, PVC piping and vessels. The reduced gasket area results in a proportionate reduction in the bolt load (Torque) necessary to affect and maintain a seal. OPRA® gaskets require less bolt torque than any other 100% PTFE type gasket. The minimum bolt torque for OPRA® gaskets is always on the low end of the torque range required for Garlock® Stress Saver® or GORE-TEX® TriGuard™. The LTC gasket is not being eliminated. The LTC and LTC-NR gaskets remain as the PTFE gaskets with the lowest minimum assembly torque required and are the only gaskets available on the market to seal effectively within the recommended torque ranges for most FRP and Plastic Piping Industry manufacturers.

Designs:

There are a variety of profiles machined or molded across plastic flanges. For example some plastic flange manufacturers fabricate their flanges with a:

- Smooth, flat flange sealing surface
- Flat sealing surface with concentric serrations machined across the flange face
- Flat sealing surface with one or more narrow concentric grooves machined into the flange face
- Flat sealing surface with one or two wide concentric grooves machined into the flange face

The narrow sealing ring on our LTC gasket typically prevented its use on flanges with machined grooves. The LTC-NR was designed to fit and seal on the wide array of flange profiles; however, because of its high cost and labor intensive manufacturing this has not been a widely accepted product. Because of the different issues, two different styles of OPRA® gaskets have been developed which have a much lower manufacturing cost, and are simple to fabricate:



inertech, Inc.

OPRA® Small ID Noted as the PW or Pipe Wall Style:

All OPRA® element of the OPRA® PW gasket is positioned as close as possible to the flange ID. The ID of OPRA® PW gaskets range from 1/8" larger than the nominal pipe size (NPS 1/2" – NPS 3) to 1/4" larger than the nominal pipe size (NPS 4 – NPS 8) to 3/8" larger than the nominal pipe size (NPS 10 – NPS 24).

- 1) The width of the sealing area ranges from 1/2" wide for NPS 1/2 - NPS 3, 5/8" wide for NPS 4 – NPS 8 and 3/4" wide for NPS 10 – NPS 24.
- 2) Instead of having a standard bolt hole pattern, OPRA® PW gaskets have a slot for each bolt. The OD of the slot aligns the gasket correctly on the flange. Replacing the standard bolt hole with a slot is another means of reducing the gasket contact area.
- 3) OPRA® PW gaskets are our standard design for standard pipe flanges

OPRA® Large ID Noted as the BC or Bolt Circle Style:

- 1) The sealing area of the OPRA® BC gasket is positioned as close as possible to the inside edge of the bolt holes.
- 2) The width of the sealing area is 1/2" for all OPRA® BC gasket sizes.
- 3) OPRA® BC gaskets are a design option that can be used with non-standard gaskets – specifically large diameter vessel gaskets.

Selection:

- 1) OPRA® PW design is the standard for pipe flanges; however, the OPRA® BC pipe flange gaskets are available if necessary.
- 2) OPRA® gaskets can be custom designed for any non-standard piping or vessel flange. Information required for design is: Vessel Flange ID, OD, and BCD. Number of bolts, diameter of bolt, assembly torque recommended and flange profile (smooth, grooved, serrated, etc).





EXPANDED PTFE
GASKETING AND SEALING PRODUCTS
FOR
THE NEW MILLENNIUM

NEW PRODUCT
RELEASE

"LTC" AND "LTC-NR" LOW TORQUE GASKETS
FOR FRP AND OTHER LIGHT LOAD APPLICATIONS



FRP

PVC

PLASTIC

PVDF

- NO MORE BROKEN FLANGES FROM OVER-TORQUEING
- SEALS AT FLANGE MFGS. RECOMMENDED TORQUE LEVEL
- CHEMICALLY INERT THROUGHOUT 0 TO 14 Ph
- 100%EXPANDED PTFE
- STANDARD AND CUSTOM SIZES



STANDARD
"LTC" GASKET

See Reverse Side for Application Information



"LTC-NR"
NON-ROTATIONAL
GASKET

by **inertech, Inc.**

641 Monterey Pass Road
Monterey Park, CA 91754-2718

Ph: (800) 463-7839

Fax: (626) 282-7569

GOODYEAR
RUBBER PRODUCTS, INC.

☎ 727-342-5088

You can also email us at
GRP@goodyearrubberproducts.com

INERTEX[®] "LTC" and "LTC-NR" Low Torque Gaskets

AN INDUSTRY-DESIGNED ANSWER
To an Every Day Industry Problem

Every Day Real Industry Problems!	The Industry and Inertech Solution
FRP piping mfgs'. recommended maximum torque is too low for a leak-free joint.	Design a gasket that seals at torques below piping mfgs. recommended levels.
Gasket materials are too hard and/or do not seal at recommended torque levels.	Use a soft compressible material that seals at low loads.
When leakage is detected, mechanics frequently torque bolts to stop leakage resulting in broken or cracked flanges.	Provide a leak free gasket in the initial installation that maintains its leak free performance for the life of the joint.
Field personnel often use the wrong gasket material for the media to be sealed.	Provide a gasket with total chemical compatibility.
Downtime from replacing flanges is very costly.	Provide a gasket that eliminates broken flanges and resulting downtime.
Lost product as a result of flange leakage or breakage is extremely costly.	Provide a long life, leak-free gasket designed to seal within piping manufacturers' recommendations.
When higher temperatures are present, mechanics frequently have to re-torque gaskets to keep them from leaking.	Provide a material that has little to no creep relaxation or cold flow.

INERTEX[®] "LTC" and "LTC-NR" Low Torque Gaskets

Co-developed by engineers at Virginia Sealing Products, Inc. and Inertech, Inc., the **INERTEX[®] "LTC" and "LTC-NR"** Low Torque Gasket designs eliminate the problems most users of FRP, Plastic, or similar fragile piping materials experience every day. **No other gasket design does all this! These designs are the only pure PTFE (Teflon[®]) gaskets designed for FRP flanges!** Review the table below and decide for yourself.

TORQUE COMPARISON TABLE OF COMMON GASKETING MATERIALS FOR FRP PIPING

Nominal Pipe Size	A.O. SMITH CO. Fiberglass Piping Maximum Recommended Torque	Garlock Stress Saver (Published Values)	Garlock Gylon 3545 (Requires 2400 psi stress)	Gore-Tex GR Gasket Sheet (Requires 2800 psi stress)	INERTEX [®] SQ-S Gasket Sheet (To reach approximately 2800 psi stress)	INERTEX [®] "LT" Low Torque Gasket (To produce approximately 3,000 psi stress)
1" X 150#	25 ft. lbs	14 ft. lbs	45 ft. lbs	51 ft. lbs	54 ft. lbs	13 ft. lbs
1 1/2" X 150#	25 ft. lbs	19 ft. lbs	59 ft. lbs	68 ft. lbs	73 ft. lbs	14 ft. lbs
2" X 150#	30 ft. lbs	33 ft. lbs	105 ft. lbs	122 ft. lbs	129 ft. lbs	19 ft. lbs
3" X 150#	30 ft. lbs	49 ft. lbs	155 ft. lbs	181 ft. lbs	192 ft. lbs	25 ft. lbs
4" X 150#	30 ft. lbs	33 ft. lbs	105 ft. lbs	122 ft. lbs	129 ft. lbs	19 ft. lbs
6" X 150#	30 ft. lbs	46 ft. lbs	159 ft. lbs	185 ft. lbs	196 ft. lbs	24 ft. lbs
8" X 150#	40 ft. lbs	66 ft. lbs	240 ft. lbs	280 ft. lbs	281 ft. lbs	36 ft. lbs
10" X 150#	40 ft. lbs	64 ft. lbs	222 ft. lbs	259 ft. lbs	276 ft. lbs	35 ft. lbs
12" X 150#	40 ft. lbs	93 ft. lbs	323 ft. lbs	376 ft. lbs	400 ft. lbs	41 ft. lbs
14" X 150#	100 ft. lbs	N/A	456 ft. lbs	531 ft. lbs	564 ft. lbs	85 ft. lbs

Two Designs Cover MOST Possibilities
(SPECIAL DESIGNS AVAILABLE)
U.S. AND OTHER PATENTS PENDING



The INERTEX[®] "LTC" Design
(STANDARD)

Handles nearly 90% of all FRP, Plastic, and other Lightweight Flanges. Used primarily in Pulp and Paper and Chemical Plants.

The INERTEX[®] "LTC-NR" Design
(NON ROTATIONAL)

Prevents Flange Rotation! For extremely light, fragile, or sensitive piping materials. Also excellent for Food, Pharmaceutical, or Semi-



TECHNICAL DATA INFORMATION for

INERTEX[®] UHF JOINT SEALANT

INERTEX[®] EZ SEALS INSERTABLE GASKETS

INERTEX[®] SQ-S GASKET SHEET

General Information

INERTEX[®] UHF Joint Sealant, UHF EZ Seal Insertable Gaskets, and SQ-S sheet gasketing material are expanded PTFE (Teflon) products made from 100% virgin PTFE (Polytetrafluoroethylene). *INERTEX*[®] products are produced via a unique process, protected under U.S. patent #5,098,625 (see patent within booklet).

Our UHF process generates a **Uniformly** and **Highly Fibrillated** microstructure. This high ratio of the fibrillation results in millions of interlocking fibrils which provides significantly LESS CREEP and COLD FLOW characteristics than other expanded PTFE products. *INERTEX*[®] products are more dense, are more easily compressed with less clamping force, and fill flange surface irregularities more easily than other gasketing products.

Under compression *INERTEX*[®] products form an extremely strong inner structure which translates into high retention of bolt load with a tighter sealing gasket. This provides the user with lower emissions at every gasketed joint.

Because it is a formed-in-place gasket, *INERTEX*[®] UHF Joint Sealant is ideally suited for large diameter applications such as pressure vessels, tank lids, heat exchangers, manholes, and can also be used to form gaskets for any irregularly shaped equipment configuration.

INERTEX[®] UHF EZ Seal Insertable Gaskets are preformed rigid insertable gaskets which fit all standard ANSI Flanges 150# and 300# class. All properties and information defined in the following data for *INERTEX*[®] UHF Joint Sealant are applicable to *INERTEX*[®] UHF EZ Seal Insertable Gaskets.

INERTEX[®] SQ-S Sheet Gasket material is the largest expanded PTFE sheet in the world at 77" x 77" in either 1/16" or 1/8" thickness. It is easily hand cut or die cut. Please refer to the separate test data section for standard ASTM testing results.

Due to the characteristics of 100% Virgin PTFE, all *INERTEX*[®] products are completely unaffected by all common chemicals, do not deteriorate with age, will not contaminate flow media and will not leave a residue on the sealing surface when removed.

**PRODUCT FEATURES
and
SPECIFICATIONS
(ALL *INERTEX*[®] PRODUCTS)**

Operating Parameters

Temperature Range	-450° F to +600° F
Pressure Range	Full vacuum to 3000 PSI
Chemical Compatibility	Fully compatible throughout the pH range of <u>0 to 14!</u> Affected only by elemental Fluorine and molten alkali metals.
Oxygen Service Limits	Oxygen index of 94.5% (PRODUCT MUST BE ORDERED WITHOUT ADHESIVE STRIP) (PTFE will burn in 100% oxygen atmosphere when ignition source is provided)
FDA Suitable	FDA 21CFR 177.1550

Material Properties

- A. Specific Gravity: 0.45 - 0.55 for UHF Joint Sealant; 0.75 - 0.95 for SQ-S Gasket Sheet; compressed to 2.0 - 2.1
- B. Modulus of Elasticity: 50,000 PSI at 73°F
- C. Matrix Tensile Strength: ≤ 6800 PSI
- D. Coefficient of Friction: 0.2 (comparable to wet ice)
- E. Surface Free Energy: 18.5 dynes / cm².
- F. Chemical Compatibility: Inert except with elemental fluorine and alkali metals.
- G. Oxygen Index: 94.5%
- H. Thermal Conductivity: 0.601 BTU-in/hr-ft²-°F @ 75°F
- I. Heat of combustion: 1434 ± 100 cal/g
- J. Specific heat: 0.23 BTU/lb. -°F
- K. Autoignition Temp: 939 ± 100°F
- L. Ignition Temp.: Pa = 75 bar 145°C = 12k, Pe = Approx. 105 bar in condensed oxygen.
- M. Dissociation Pressure: 5 x 10⁻¹⁸ mm Hg at 27°C: 5 x 10⁻¹² mm Hg at 100°C.
- N. PTFE is degraded by high energy radiation; however, there are examples of exposure to 17 megarads of gamma radiation on steel flanges with no loss of seal.
- O. Toxicity: NON-TOXIC
- P. HEALTH HAZARDS: None under normal use and conditions
- Q. WASTE DISPOSAL METHOD: Normal landfill - complies with any local disposal regulations

SEALING PROPERTIES FOR
***INERTEX*[®] UHF JOINT SEALANT and**
***INERTEX*[®] UHF EZ SEAL INSERTABLE GASKETS**

• DIN 3535 Gas Permeability

This standard provides a means of measuring leakage of a gas through a gasket. This test is designed to compare the leakage rates of different products. The apparatus used is considerably more versatile than that used in ASTM F37. The sample gasket size can be varied, and much higher internal pressures can be used. Normally measurements are made at room temperature.

Results of gas permeability test (DIN 3535 Part 4 Sec. 4.7)

3/16" (5mm) *INERTEX*[®] UHF Joint Sealant,
 2.76" (70mm) of sealing ring's diameter.
 Temperature = 73°F 3.6° (23°C ± 2°) nitrogen gas.
 Clamping Pressure = 4350 psig (30 N / mm²).

Internal Pressure	Gas permeability (ml/min.)
232 psig (16 bar)	0.04 (range 0.02 - 0.05)
363 psig (25 bar)	0.04 (range 0.03 - 0.05)
580 psig (40 bar)	0.06 (range 0.04 - 0.07)

• DIN 52913 Torque Retention

This test equipment is designed to determine the torque retention capabilities of gasket products, when subjected to the compression load and operating temperatures as defined by the test procedures.

The test consists of applying a predetermined load on the test gasket via a tension screw, then heating the gasket/flange assembly to the desired temperature (there is no internal pressure). The standard test period is either sixteen (16) hours or one hundred (100) hours. At the end of the required time period, the compression load which is left acting on the test gasket, is measured. This allows one to calculate the torque retention capabilities of various gasketing products.

This test differs from the "Hot Compression Test" in that the gasket load is not constant, but is a function of the torque retention capability of the product tested.

Results of torque retention test (DIN 52913)

3/16" (5mm) *INERTEX*[®] UHF Joint Sealant.
 2.56" (65mm) sealing ring's diameter.
 Clamping Pressure = 4350 psig (30N/mm²)
 Test period = 16 hours
 Operating temperature = from 73°F (23°C) to 302°F (150°C) and 392°F (200°C).

Temperature	Times Tested	Torque Retention	Decrease %
302°F (150°C)	Continuous 16 times	2751 psi (range 2465-2929)	37.3% (32.6%-43.3%)
392°F (200°C)	Continuous 12 times	2717 psi (range 2465-2915)	37.6% (33.0%-43.4%)

• Compressibility - Please refer to chart IV on page 7.

Remarks:

DIN (Deutsches Institut für Normung)

German Institute for Standardization

ADDITIONAL TESTING INFORMATION

Mass change after storage in synthetic gas condensate and subsequent drying out.

Testing Conditions	Original Samples	Compressed Samples
Soaking in Isooctane/Toluol (70/30), 7 days at 23°C.	62	1.3
Drying out, 14 days at 40°C	-0, 1	-0, 1
Soaking in Isooctane/Toluol/Methanol (50/30/20) 7 days at 23°C	64	1.2
Drying out, 14 days at 40°C	-0, 1	0, 0

APPLICATION INFORMATION

Size Conversion:

1mm	1/8"	3/16"	1/4"	3/8"	1/2"	5/8"	3/4"	1"
1mm	3mm	5mm	7mm	10mm	14mm	17mm	20mm	25mm

Size Recommendation: *

Nominal Pipe Size (ANSI B16.5)	Recommended Size of <i>INERTEX</i> [®] UHF Joint Sealant
1/2", 3/4"	1/8"
1", 1-1/4", 1-1/2"	3/16"
2", 2-1/2", 3", 3-1/2"	1/4"
4" - 6"	3/8"
8" - 16"	1/2"
18" - 20"	5/8"
24" - 36"	3/4"
36" - 60"	1"
60" and over	2"

Other Nonstandard Flanges

Sealing Width	Recommended Size of <i>INERTEX</i> [®] UHF Joint Sealant
1/8" - 1/4"	1/8"
5/16" - 3/8"	3/16"
7/16" - 5/8"	1/4"
3/4" - 1"	3/8"
1 1/8" - 1 1/2"	1/2"
1 5/8" - 2"	5/8"
2" - 2 1/2"	3/4"
2 1/2" - 5"	1"
5" over	2"

* In case of non-standard flanges, damaged flanges, or bigger than 24", the size recommended is 1/2 of the sealing surface's width.

Acceptance / Approval

FDA	<i>INERTEX</i> [®] UHF Joint Sealant meets the FDA requirements, PTFE - FDA21 CFR177.1550 Adhesive - FDA21 CFR175.105
DVGW	German Federation of Gas and Water Technology According to DVGW No. 11G/Dr. Dri-PG, <i>INERTEX</i> [®] UHF Joint Sealant is suitable for the gas supply at internal pressure up to 232 psig (16 bar) in the temperature range from 14°F (-10°C) to 122°F (50°C).
BAM	German Institute for Material Research and Test According to BAM No. 13621/87 4-4625, there are no reflections against the usage of <i>INERTEX</i> [®] UHF Joint Sealant for the oxygen supply, sealing the flanges made of copper, copper alloy or steel at internal pressure up to 580 psig (40 bar) in the temperature up to 140°(60°C).
TUV	Technical Supervisory Federation of Bavaria in Germany, Materials and Structural Engineering Division, quality monitoring According to TUV No. 191604, MP3/7381, the characters of the sealing values are as per Chart I & Chart II on page 6.

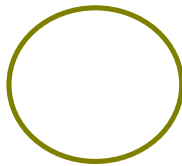
Custom Orders

Other than the oval shaped cross-section, *INERTEX*[®] UHF Joint Sealant can be supplied in various cross sections such as V-shape, square, rectangular and round as shown below, to fit into all kinds of flanges or sealing surfaces which have particular slots, grooves or special requirements of the cross-sections for easy installation. V-type, as a general practice, is to be stuffed with other materials such as fiberglass for certain specific applications.

Please consult us for these custom-made *INERTEX*[®] UHF Joint Sealant.



Rectangle



Round



V-Type



Square

Overlapping Methods at the End

Other than the regular method by crossing the ends at a bolt hole, here as shown (top view) are some examples for the applications where the extra bulk at the crossover could cause troubles.



The data listed here fall within the normal range of product properties but should not be used alone as the basis of design. INERTECH, Inc. assumes no obligation or liability for any advice furnished herein or for results obtained with respect to the product(s). Buyer assumes sole responsibility for the results.