Uni-Seals Product Catalog

Category: PTFE

UNI-SEALS

Unimax International Limited

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Index

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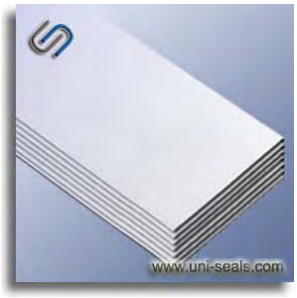
PTFE Sheet



PTFE (polytetrafluoroethylene) has the best chemical resistance among known plastics. It also has good aging stability, electrical insulation, wear resistance, and extremely low friction coefficient. The unloaded operating temperature range is -180~+260°C, and the dielectric strength is more than 10KV/mm.

GS4000 Pure PTFE sheet

Uni-seals PTFE sheet is molded or skived from 100% virgin PTFE resin.
Available to be etched on one side or both sides (style number: GS4000E).

Application:
Used as sealing material, electrical insulating parts, lining pads, etc.

Specification:

Density	Tensile strength	Elongation at break	Temperature	Maximum pressure
2.1~2.3g/cm^3	≥15Mpa	≥150%	-180°C~+260°C	10Mpa

GS4010 PTFE molded sheet

PTFE sheets with thickness over 3mm are normally manufactured by molding method.

Normal Dimension:

Size	Thickness	Tolerance
150 x 150mm	1.0~30mm	±0.30~±0.50mm
250 x 250mm	1.5~30mm	±0.30~±0.50mm
300 x 300mm	1.5~30mm	±0.30~±0.50mm
450 x 450mm	1.5~30mm	±0.30~±0.50mm
600 x 600mm	2.0~30mm	±0.30~±0.50mm
800 x 800mm	3.0~30mm	±0.30~±0.50mm
1000 x 1000mm	3.0~30mm	±0.30~±0.50mm
1200 x 1200mm	3.0~30mm	±0.30~±0.50mm
1000 x 2000mm	5.0~35mm	±0.30~±0.60mm
1500 x 1500mm	5.0~30mm	±0.30~±0.50mm
1800 x 1800mm	8.0~30mm	±0.30~±0.50mm
2000 x 2000mm	8.0~30mm	±0.30~±0.50mm

GS4020 PTFE skived sheet

Virgin PTFE resin is firstly molded into a blank rod, and then skived into sheet. PTFE sheets with thickness of 3mm and less are normally manufactured by this method.

Normal Dimension:
Thickness: 0.5~3mm; Width: 900mm, 1000mm, 1200mm; Length: ≥200mm.

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Expanded PTFE Sheet

GS4100 Expanded PTFE sheet

Our expanded PTFE sheet is made from 100% PTFE through special manufacturing process. Composed of innumerable multidirectional fibers, the product has a particular high density fiber texture. Under pressure the fibers will mutually tangle, making the texture even tighter and resulting in better sealing performance.

Expanded PTFE sheet has fine flexibility, high tensile strength, good resistance to temperature, creep, cold flow, corrosion, and aging. It is non-toxic and non-pollution, easy to cut and install, and not easy to distort.
The material may seal rough and damaged flange, and maintains excellent sealing performance even under severe corrosive environment and high temperature.

Application:

The product is suitable with all kinds of flanges. Widely used in industries of chemical, petroleum, nuclear power, steelmaking, papermaking, shipbuilding, semiconductor, aerospace, food, pharmacy, medical instrument, and so on.

Specification:

Temperature	-260°C~+260°C
Maximum pressure	20Mpa
Compressibility	66%
Recovery	16%
PH range	0~14

Normal Dimension:

60″ x 60″ x 1/16″ (1.5m x 1.5m x 1.5mm);
60″ x 60″ x 1/8″ (1.5m x 1.5m x 3.0mm);
60″ x 60″ x 1/4″ (1.5m x 1.5m x 6.0mm).

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PTFE Rod

RO4000 PTFE rod

Uni-seals PTFE rod is extruded or molded from 100% virgin PTFE resin.
PTFE rods with diameter over 50mm are normally manufactured by molding method, while rods with diameter less than 50mm are normally manufactured by extruding method.

Application:

Used for making sealing material, electrical insulating material, and antisticking material.

Specification:

Density	Tensile strength	Elongation at break	Temperature
2.1~2.3g/cm^3	≥14Mpa	≥140%	-180°C~+260°C

Normal Dimension:

Diameter		Length	
Nominal	Tolerance	Nominal	Tolerance
4, 5, 6mm	+0.48mm	1000mm	+5.0mm
7, 8, 9mm	+0.58mm		
10, 13, 15, 16, 18mm	+1.10mm	1000mm	+3.6mm
20, 25, 30mm	+1.30mm		
35, 40, 45, 50mm	+1.60mm		
55, 60, 65, 70, 75, 80, 85, 90, 100mm	+2.00mm	100~300mm	+2.5mm
110, 120, 130, 140, 150mm	+2.50mm		
180, 200, 250, 270, 300mm	+3.0mm	100mm	+2.0mm

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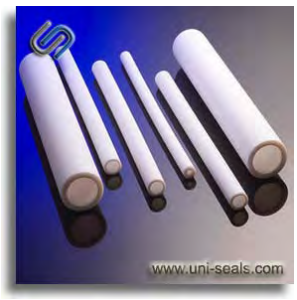
PTFE Tube



TU4000 PTFE tube

The tube is manufactured by extruding method from 100% virgin PTFE granular resin.

Application:

Used as insulting cover for conductor, pipe for corrosive fluids. It is also applied for sealing the valve rod and rotating pump shaft in corrosion-resistant case.

Specification:

Density	Tensile strength	Elongation at break	Temperature
2.1~2.3g/cm^3	≥18Mpa	≥230%	-180°C~+260°C

Normal Dimension:

Specification	Outer diameter		Wall thickness		Length
	Nominal	Tolerance	Nominal	Tolerance	
24 x 2mm	24mm	±0.65mm	2mm	±0.30mm	≥4000mm
25 x 2mm	25mm				
29 x 2mm	29mm				
29.6 x 2mm	29.6mm				
32 x 2mm	32mm	±0.80mm			
32 x 3.5mm	32mm		3.5mm	±0.38mm	
40 x 2mm	40mm		2mm	±0.30mm	
40 x 4mm	40mm		4mm	±0.38mm	
50 x 4mm	50mm				
50 x 5mm	50mm		5mm		
51 x 2mm	51mm	±0.95mm	2mm	±0.30mm	
52 x 4mm	52mm		4mm	±0.38mm	
64 x 2.5mm	64mm		2.5mm		
64 x 4.5mm	64mm		4.5mm		
81 x 2.5mm	81mm		2.5mm		
82 x 2.5mm	82mm		2.5mm		
82 x 3mm	82mm		3mm		
90 x 3mm	90mm	±1.10mm	3mm	±0.38mm	
90 x 5mm	90mm		5mm		
104 x 3mm	104mm		3mm		
129 x 3.5mm	129mm	±1.20mm	3.5mm	±0.38mm	
154 x 4mm	154mm		4mm		
204 x 4mm	204mm		4mm		

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PTFE Extruded Tube

TU4600 PTFE extruded tube

PTFE extruded tube is manufactured from high pressure PTFE dispense resin mixed with additive, extruded and sintered. It could be made in opaque or translucent according to different demands.

The PTFE tube has many excellent properties such as chemical inertness, extremely low coefficient of friction, non-toxicity, odourless, flavourless, fire-retardant and unaffected by ultraviolet light.

Application:

Widely used in chemical and general industries in situations where aggressive fluid or environments are involved. It can also be used as a protective sleeving for cables and as a substitute for nylon hose where pressures allow.

Specification:

Density	2.1~2.2g/cm^3
Tensile strength	≥20Mpa
Elongation at break	≥200%
Dielectric strength	10KV/mm

Normal Dimension:

Size OD x ID	Tolerance
0.8 x 0.4mm	±0.08mm
1 x 0.5mm	±0.08mm
2 x 1mm	±0.08mm
4 x 2mm	±0.1mm
6 x 4mm	±0.1mm
8 x 6mm	±0.1mm
10 x 8mm	±0.1mm
12 x 10mm	±0.2mm
14 x 12mm	±0.2mm
16 x 14mm	±0.2mm
18 x 16mm	±0.3mm
20 x 18mm	±0.3mm
22 x 20mm	±0.3mm
24 x 21mm	±0.3mm

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PTFE Skived Film

FL4000 PTFE skived film

The PTFE film is made through molding, sintering and rotary skiving process.
It has good tensile strength and dielectric characteristics, excellent chemical resistant and no aging. Could be timelessly served in the applications with temperature between -180°C~+260°C.

Application:

Used as sealing material, oilless lubricating material, and dielectric material at any frequencies, such as capacitor dielectric, wire isolation, electrical instrument isolation etc.

Specification:

Density	Tensile strength	Elongation at break	Temperature
2.1~2.3g/cm^3	≥15Mpa	≥150%	-180°C~+260°C

Normal Dimension:

Thickness: 0.03~0.1mm; Width: 30~1000mm; Length: ≥10m.

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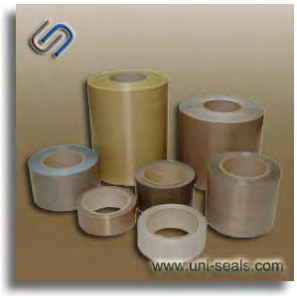
PTFE Tape



TA4000 PTFE skived tape

PTFE skived tape is manufactured from high strength suspension PTFE resin. Virgin PTFE resin is firstly molded into a blank rod, and then skived into tape.

Specification:

Density	2.1~2.3g/cm^3
Tensile strength	≥15Mpa
Elongation at break	≥150%
Dielectric strength	≥10KV/mm

Normal Dimension:

Thickness	0.5~4mm
Width	100~500mm
Length	≥1000mm

TA4007 PTFE adhesive tape

The PTFE skived tape is one side etched and coated with adhesive, and then slit into different sizes.
The tape has good anticorrosive and electrical insulating property, and not aging. It is widely used in the fields where PVC tape is not suitable to apply.
The tape is used primarily in electrical applications such as coil wraps and separators, transformer, slot liners and harness wrapping where good insulation and heat resistance are needed. It is also used in mechanical applications requiring high temperature resistance and a non-stick surface such as roll protection in flat die extrusion.

Specification:

Tensile strength	≥25Mpa
Elongation at break	≥125%
Bonding strength	≥6N/25mm
Dielectric strength	≥10KV/mm
Temperature	-50°C~+180°C

Normal Dimension:

Thickness	0.1~0.15mm
Width	10mm~50mm
Length	20m, 30, 40m, 50m

TA4017 PTFE anticorrosive pipe tape

The tape is manufactured from PTFE suspension resin. The skived PTFE tape is one side etched, and then coated with adhesive. Different colors are available.
It is easy to use, is an ideal and new style anticorrosive product for cable and piping in place of paint.
Used as anticorrosive protecting for the cantilevers of bridges, pipes and machine parts in chemical plants

Specification:

Density	2.1~2.2g/cm^3
Tensile strength	≥15Mpa
Elongation at break	≥150%
Dielectric strength	≥10KV/mm

Normal Dimension:

Thickness	0.1~0.15mm
Width	30mm, 50mm
Length	20m, 30, 40m, 50m

TA4767 PTFE coated fiberglass tape

See the details in our product catalogue "Coated Fabric".

Other types of adhesive tapes such as PFA, FEP adhesive tapes etc are also available on request.

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PTFE Thread Seal Tape

TA4800 PTFE thread seal tape

TA4800 tape is a very thin tape made of 100% virgin PTFE. It is a quick, convenient thread sealant used to wrap the threaded ends of pipes to improve the water or gas tightness. It is a chemically inert, nonhardening, non-contaminating permanent seal able to withstand wide temperature range.

Specification:

Density	0.2~1.6g/cm^3
Temperature	-200°C~+280°C
Maximum pressure	15~20Mpa
Tensile strength	≥8Mpa
Elongation at break	≥25%
PH range	0~14

Dimension:

Thickness: 0.075~0.2mm.
Width: 12~300mm.
Length: 5~50m.

Color:

Tape: normally in white color. For high density tapes, yellow and pink colors are also available on request.
Plastic cover and spool: various colors according to customer's requirement.

Inner Packaging:

Shrink packaging or inner box.

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Expanded PTFE Tape

TA4100 Expanded PTFE tape

It is an inorganic sealant tape for static applications made of 100% virgin PTFE. A unique process converts PTFE to a microporous fibrous structure, resulting in a sealant tape with an unsurpassed combination of mechanical and chemical properties.

TA4107 Expanded PTFE tape with self-adhesive

For easy fixing onto the sealing surface, there is normally a self-adhesive strip which is covered with a protective tape on one side of the TA4100.

Application:

EPTFE tape is especially suitable for sealing flange connections, pipe systems, hydraulic and pneumatic systems, etc. In addition, it's also ideal for seals in glass, enamel and plastic flanges, vessels and special shaped sealing surface.
EPTFE tape saves money and time. Since there is no scrap or waste, it costs less than other gasket materials. By using only a few sizes, large inventories of sheet gasket and costly precut gaskets can be eliminated. Installation time is kept to a minimum since there are no templates, precutting or special fitting requirements.

Specification:

Density	0.7~0.75g/cm^3
Temperature	-240°C~+260°C
Maximum pressure	100bar
PH range	0~14
Media	Acids, alkalis, solvents, gases, etc

Normal Dimension:

Width	Thickness	Length / roll
3mm	1.5mm	30m
4mm	2.5mm	30m
5mm	2.0mm	25m
6mm	3.0mm	25m
7mm	2.5mm	25m
8mm	3.0mm	25m
10mm	3.0mm	25m
10mm	4.0mm	25m
12mm	4.0mm	10m
14mm	5.0mm	10m
16mm	5.0mm	10m

Width	Thickness	Length / roll
17mm	6.0mm	10m
20mm	7.0mm	5m
25mm	8.0mm	5m
30mm	3.0mm	5m
30mm	5.0mm	5m
40mm	3.0mm	5m
40mm	5.0mm	5m
50mm	3.0mm	5m
50mm	5.0mm	5m
60mm	3.0mm	5m
80mm	3.0mm	5m

Other dimensions are also available on request.

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Expanded PTFE Round Cord

CO4100 Expanded PTFE round cord

Valve-spindle cord made of pure expanded PTFE, used as valve-spindle and flange seals in the chemical, pharmaceutical and food processing industries. Flanges are sealed quickly and securely by simple insertion of a ring of PTFE round cord (ends twisted).

Specification:

Density	0.75~0.8g/cm^3
Temperature	-240°C~+260°C
Maximum pressure	100bar
PH range	0~14
Media	Acids, alkalis, solvents, gases, etc

Normal Dimension:

Diameter: 2~10mm.

Length: 5m, 10m, 15m per roll.

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PTFE Gasket

GA4000 PTFE gasket

The product is molded, skived or cut from virgin PTFE sheets, rods, tubes etc.
PTFE has the best chemical resistance among known plastics. It also has good aging stability, electrical insulation, wear resistance, and extremely low friction coefficient. The unloaded operating temperature range is -180~+260°C.

Application:

PTFE gasket is one of the most suitable types of gaskets for a variety of sealing applications. Different types of Uni-seals PTFE gaskets are available to meet various application demands.

Specification:

Density	Tensile strength	Elongation at break	Temperature	Maximum pressure
2.1~2.3g/cm^3	≥15Mpa	≥150%	-180°C~+260°C	10Mpa

GA4500 PTFE gasket with filler

It is PTFE gasket with filler materials such as glass fiber, carbon fiber and graphite etc. Improved mechanical and processing properties can be additionally reached by combination of virgin PTFE and different fillers.
See details in the product page "Filled PTFE Articles".

Dimension:

According to standards of ASME B16.5, DIN, etc. Special sizes and shapes are also available upon request.
Maximum external diameter is up to 2000mm.
For gaskets with outer diameter more than 1000mm, our style TA4107 expanded PTFE joint sealant tape might be considered as a substitute, which is very easy and economical

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PTFE Envelope Gasket

GA4050 PTFE envelope gasket

Our PTFE envelope gasket consists of asbestos, non-asbestos, rubber, corrugated stainless steel etc as cushion material encased in PTFE envelope, resulting in a gasket with the excellent corrosion resistance of PTFE and the strength and resilience of core material. It can be produced in several types to meet the most demanding applications.

GA4060 V style PTFE envelope gasket

The PTFE is slit in center from outside.
It is an economical solution for lower pressure applications.

GA4070 Square style PTFE envelope gasket

The PTFE is cut into square envelope form.
For use with medium and higher pressure.

GA4080 U style PTFE envelope gasket

The PTFE is heat welded at the joint.
Normally for DN≥200mm.

Application:

GA4050 PTFE envelope gasket is the ideal solution for applications demanding virtually 100% chemical resistance and where the mechanical properties of a compressed gasket material are also needed. It performs well in the food processing industries where contamination of the medium is not permitted. Suitable for mediums like strong alkalis, cryogenic fluids, oxygen, chlorine gas etc.

Properties:

Virtually 100% chemically resistant.
Temperature range from -180°C to +260°C, depending on the core.
Mechanical strength dependent on core selection.
Pressure: ≤4Mpa.

Dimension:

According to standards of ASME B16.5, DIN, etc. Special sizes and shapes are also available upon request.

Normal Thickness:
Thickness of core: 2.0mm.
Thickness of PTFE: 0.5mm + 0.5mm = 1.0mm.

From 20 mm to 500 mm: the gasket is made in one piece;
From 500 mm upwards: the gasket is welded. There are no size limitations for gaskets with welded envelopes.

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Filled PTFE Products

Filled PTFE products are manufactured from filled PTFE resin, which is a compound of PTFE granular resin and many different kinds of fillers, such as glass fiber, carbon fiber, bronze, and lubricating materials like graphite, molybdenum disulfide, etc.
The filled PTFE products have improved compression strength, better abrasion resistance, higher thermal conductivity and lower thermal expansion compared with pure PTFE products. The typical improved properties with different fillers are:

Filler	Improved properties
Glass fiber	Enhanced wear resistance Chemical resistance
Graphite	Extremely low coefficient of friction Fairly good compressive strength Good wear resistance
Carbon fiber	Good thermal resistance Resistance to deformation
Bronze	Enhanced compressive strength Good wear resistance High thermal conductivity

GS4500 PTFE sheet with filler
Molded or skived from filled PTFE resin.
Available to be etched on one side or both sides (style number: GS4500E).

GA4500 PTFE gasket with filler
Molded, skived or cut from filled PTFE sheets, rods, tubes etc.

Specification:

Sheet	Gasket	Filler content (by weight)	Tensile strength	Elongation at break	Maximum pressure
GS4501	**GA4501**	Glass fiber 20%	≥10Mpa	≥120%	16Mpa
GS4502	**GA4502**	Glass fiber 25%	≥10Mpa	≥100%	16Mpa
GS4503	**GA4503**	Glass fiber 20% Graphite 5%	≥10Mpa	≥120%	16Mpa
GS4504	**GA4504**	Bronze 60%	≥10Mpa	≥80%	20Mpa
GS4505	**GA4505**	Carbon fiber 15%	≥11Mpa	≥130%	16Mpa
GS4506	**GA4506**	Bronze 24% Glass fiber 12% Graphite 6%	≥9Mpa	≥100%	16Mpa
GS4507	**GA4507**	Glass fiber 15% Polyimide 10% Graphite 5%	≥10Mpa	≥120%	16.7Mpa

Other filled PTFE products such as rods, tubes, valve seats, bearings, piston rings etc are also available on request.

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Varied PTFE Articles

To meet various demands, Uni-seals has developed varied PTFE articles which are made from high quality PTFE resin, and manufactured by methods of molding, skiving and lathe. The varied PTFE articles we supply include:

Bearing pad
Soft expansion joint
Mechanical seals
Pump diaphragm
Air pump piston
Medical pump
Beaker and volumetric flask
Decompression ball
Electronic film
Electronic insulation articles
PTFE etched tape
And custom made articles, etc.

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Note:

1. All technical details quoted throughout this catalogue are based on our extensive tests and years of experience, however, they can only serve as guide values. Your specific application should not be undertaken without independent study and evaluation for suitability. Failure to select proper products and specifications could result in property damage and/or personal injury.
2. Technical details subject to change without notice. This edition cancels all previous issues.

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