PTFE BROCHURE

IPX INSAPLEX

About Insaplex

INSAPLEX is the leading manufacturer of Hoses and Hose Assemblies, Fabric Expansion Joints, Metal Inserted Rubber gaskets, and PTFE Gaskets in India for over three decades and has also been the leading international supplier of SS Hose fittings and Adaptors, catering to many assemblers.

INSAPLEX is a member of the diversified industrial group -IGP. The IGP group has been serving the core industry for over six decades, with revenue in excess of INR 6000 million.

INSAPLEX is introducing Engineering and High-Performance Polymer Products like Gaskets, seals, Bellows, and Energized Lip Seals with PTFE, PEEK, VESSEL, TEFLON, etc...

In Addition to that well established Product viz, Fabric Expansion Joints and Metal Inserted Rubber Gasket in India for over two decades and also the leading international supplier of SS Hose fittings and Adaptors, catering to many assemblers.

Quality Management system- ISO 9001:2015

QUALITY SYSTEM CERTIFICATION
DNV·GL
ISO 9001:2015

IGP GROUP

PTFE BROCHURE

PTFE, PEEK & OTHER FLUOROPOLYMER SPECIALISTS

We can offer you standard grades of PTFE, VICTREX PEEK, and other fluoropolymer materials thanks to our unmatched experience dealing with engineering plastics, or we can collaborate with you and your team to build custom materials to meet your requirements.

We are able to develop and produce intricate machined parts, including high-performance electrified seals, PTFE slide bearings, skidway systems, and rods and tubes with a diameter of 6 mm to 1800 mm.

We can also offer top-notch coating solutions for a range of applications, such as bakeware equipment, stud bolt coatings, release coatings, and glass coatings, thanks to our expertise in fluoropolymer materials.

We are able to offer a wide variety of precisely engineered parts and components made in India using different grades of PTFE. High-end molding presses and PTFE sintering ovens are housed in our specially constructed PTFE molding facility.

A wide variety of PTFE coatings are available from our Coatings and Surface Preparation business. These coatings provide a durable, heat-resistant finish with nearly perfect chemical inertness.

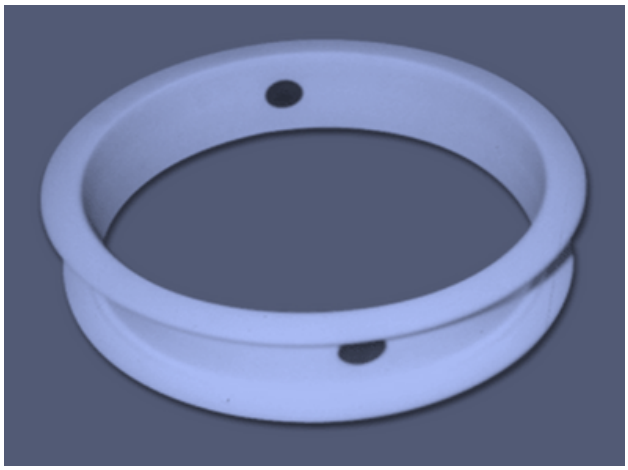
Our trained engineers work with you to understand your project and recommend the best grade of PTFE or PTFE compound based on the hundreds of available PTFE grades. For more than 1 year, we have designed and produced special PTFE gaskets for customers worldwide.

With a strong focus on innovation, our team has a solid reputation for solving problems. Our engineering and design services are essential to providing solutions for our clients throughout the globe.

We collaborate with you to design your product, component, or part from the ground up. We routinely collaborate closely with our clients to design a custom material that is perfectly suited to their application or project.

Our team of experts is available to assist you with the best material to use for your application.

We have designed and produced PTFE & PEEK components and coatings in the science & medical sector for many years by combining our strong technical competence with bespoke solutions to suit every need. from scientific glassware and sterile trays to coated dental equipment.



PTFE BROCHURE

INSAPLEX

PTFE GASKETS

We are able to offer a wide variety of precisely engineered parts and components made in the UK using different grades of PTFE. High-end molding presses and PTFE sintering ovens are housed in our specially constructed PTFE molding facility.

A wide variety of PTFE coatings are available from our Coatings and Surface Preparation business. These coatings provide a durable, heat-resistant finish with nearly perfect chemical inertness.

Our trained engineers work with you to understand your project and recommend the best grade of PTFE or PTFE compound based on the hundreds of available PTFE grades. PTFE CHARACTERISTICS

One of the fluoropolymers with the finest performance-to-price ratios is PTFE, which is also one of the most economical options available. Fillers enhance the mechanical strength, stability, and wear resistance of filled PTFE while preserving its chemical and high-temperature properties.
AFT Fluorotec can produce components using more than 500 different grades of PTFE, and we can advise you on the optimum option for your project.
IT IS AN EXCELLENT ELECTRICAL INSULATOR

- IT HAS LOW FRICTION
- IT IS RESISTANT TO WEAR
- IT IS TOLERANT OF HIGH TEMPERATURES
- IT IS FDA-APPROVED & FOOD SAFE
- IT IS CHEMICALLY RESISTANT & INERT

Technical data Sheet-PTFE & PTFE Compounds

IPX INSAPLEX

Sl#	Properties	Unit	Test Method	Virgin PTFE	Chemically Modified PTFE	15% Glass Filled PTFE	25% Glass Filled PTFE	5% Glass + 5% MoS2 Filled PTFE	15% Glass + 5% MoS2 Filled PTFE	23% Carbon + 2% Graphite Filled PTFE	33% Carbon + 2% Graphite Filled PTFE	15% Graphite Filled PTFE	40% Bronze/ TSQ Filled PTFE	40% Bronze + 5% MoS2 Filled PTFE	60% Bronze Filled PTFE	55% Bronze + 5% MoS2 Filled PTFE
1	Density	gm / cc	ASTM D-792	2.1 – 2.2	2.15 – 2.2	2.15– 2.22	2.22– 2.25	2.20 – 2.24	2.20– 2.24	2.0 – 2.2	2.0 – 2.14	2.10– 2.16	3.0 – 3.2	3 – 3.2	3.8 – 4.0	3.8 – 4
2	Tensile Strength	kgf/cm²	ASTM D-4894	210 – 375	300 – 325	180– 260	125– 200	175– 250	150– 220	125–200	100– 175	150– 200	125– 225	125-225	100– 200	100-200
3	Elongation of Break	%		250 – 400	400 – 450	225-325	200-300	200-300	220-320	80–150	100-150	150-250	200-350	200-350	150-300	150-300
4	Compressive Strength	kgf/cm²	ASTM D-695	40-50	45-55	65-75	75-85	60-70	65-75	75–85	80-90	65-75	85-100	80-95	115-125	115-125
	Deformation under load (Max.)															
5	2 Hrs. 23°C 113 kgf	%	ASTM D-621	12	3.5	10	9	11	10	5	4	6	5	5	4	4
	24 Hrs. 23°C 113 kgf			15	5	12	11	13	12	7	6	8	6	6	5	5
	Permanent			8	2.5	7.5	7	8.5	7.5	3.5	3	4.5	3	3	2.5	2.5
	2 Hrs. 150°C 113 kgf			55	40	52	50	52	50	35	30	43	42	42	40	40
6	Impact strength	J/cm	ASTM D-256	1.4 – 1.5	1.6 – 1.75	1.2 – 1.3	1.0 – 1.1	1.25 – 1.35	1.2 – 1.3	0.7 – 0.8	0.6 – 0.7	0.8 – 0.9	0.9 – 1.0	0.9 – 1.0	0.8 – 0.9	0.85 – 0.95
7	Hardness	Shore D	ASTM D-2240	58 – 62	56 – 62	58 – 62	58 – 63	60 – 65	60 – 65	60 – 65	60 – 65	60 – 65	62 – 66	62 – 66	64 – 68	64 – 68
	Coefficient of Friction -ASTM-D-1894															
8	DynamicP-7 kg/cm²V-0.5	kg/cm2	ASTM-D-1 894	0.04-0.06	0.02-0.03	0.31-0.37	0.5-0.54	0.15-0.20	0.15-0.20	0.12-0.17	0.13-0.18	0.11-0.16	0.11-0.15	0.1-0.14	0.12-0.16	0.11-0.14
	Static P-35 kg/cm²			0.05-0.08	0.04-0.06	0.01-0.12	0.11-0.13	0.08-0.01	0.08-0.01	0.09-0.11	0.01-0.12	0.08-0.10	0.08-0.10	0.075-0.09	0.08-0.10	0.07-0.09
9	Wear Rate (Max.)	gm/s	ASTM-G-1 37	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
10	Water Absorption (Max.)	%	ASTM D-570	0	0	0.015	0.013	0.015	0.015	0	0	0	0	0	0	0
11	Continuous Service Temperature	0 C	ASTM-D-6 48	260	260	260	260	260	260	260	260	260	260	260	260	260
12	Heat Resistance (Max.)	%	ASTM-D-6 48	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
13	Coefficient of Linear Thermal Expansion– 10^{-6} X	%	ASTM D-696	250 – 275	250 – 275	240 – 265	235 – 255	245 – 270	240 – 265	225 – 250	215 – 240	240 – 265	200 – 225	200 – 225	175 – 200	175 – 200
14	Linear Thermal Expansion (Max.)	%	ASTM D-696	A / R	A / R	A / R	A / R	A / R	A / R	A / R	A / R	A / R	A / R	A / R	A / R	A / R
	30 – 150° C			1.5 / 1.5	1.5 / 1.5	1.5 / 1	1.5 / 0.7	1.5 / 1	1.5 / 1	1.2 / 1	1.1 / 0.9	1.3 / 1	1.15 / 0.95	1.15 / 0.95	1.1 / 0.9	1.1 / 0.9
	30 – 200° C			2.4 / 2.3	2.4 / 2.3	2.3 / 1.8	2.2 / 1	2.3 / 1.8	2.3 / 1.8	1.9 / 1.5	1.8 / 1.4	2 / 1.7	1.85 / 1.55	1.85 / 1.55	1.8 / 1.5	1.8 / 1.5
	30 – 250° C			3.4 / 3.6	3.4 / 3.6	3.3 / 2.2	3.2 / 1.4	3.3 / 2.2	3.3 / 2.2	2.7 / 2.4	2.5 / 2.3	3 / 2.5	2.55 / 2.25	2.55 / 2.25	2.5 / 2.2	2.5 / 2.2
15	Dielectric Strength	Kv/mm	ASTM D-149	22 – 24	30 – 35	15 – 16	11 – 12	15 – 16	15 – 16	1 – 2	1 – 2	1 – 2	Conductive	Conductive	Conductive	Conductive
	Dimensional stability															
16	Length	%	ASTM-D-1 710	1.5 – 3	1.5 – 3	1.5 – 3	1.5 – 3	1.5 – 3	1.5 – 3	1.5 – 3	1.5 – 3	1.5 – 3	1.5 – 3	1.5 – 3	1.5 – 3	1.5 – 3
	Diameter			0.5 – 1	0.5 – 1	0.5 – 1	0.5 – 1	0.5 – 1	0.5 – 1	0.5 – 1	0.5 – 1	0.5 – 1	0.5 – 1	0.5 – 1	0.5 – 1	0.5 – 1

IGP GROUP

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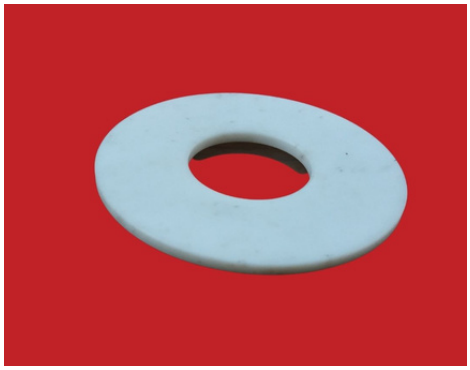
WHAT MAKES THE PTFE GOOD OPTION

PTFE is a very adaptable substance that is utilized in a wide range of sectors because of its affordability, stability, and durability. Medical devices, food packaging, industrial equipment, automobile parts, electrical insulation, and fluid seals are just a few of the many uses for which PTFE has been utilized. The strong carbon-fluorine bond in PTFE allows it to be very flexible and chemically resistant. It also possesses the lowest coefficient of friction of any solid, is weatherproof, water-resistant, and a great conductor of heat and electricity.

MANUFACTURED PTFE PLASTIC PARTS

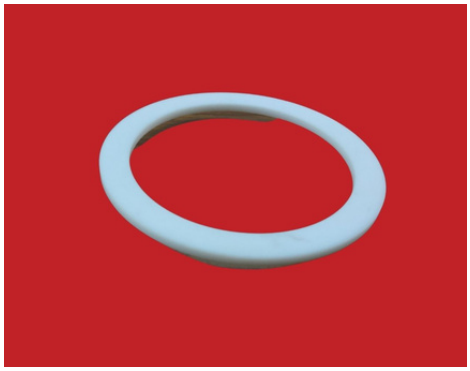
With state-of-the-art equipment combined with technicians with extensive experience in PTFE, we are able to produce almost any component that your project requires. However, we have developed a specialist reputation for a number of products over the years.



High-Performance Seals: We design and manufacture world-class plastic, rubber, and elastomer seals in PTFE, VICTREX PEEK, PU, NBR, and POM, or create a bespoke material to suit your requirements.

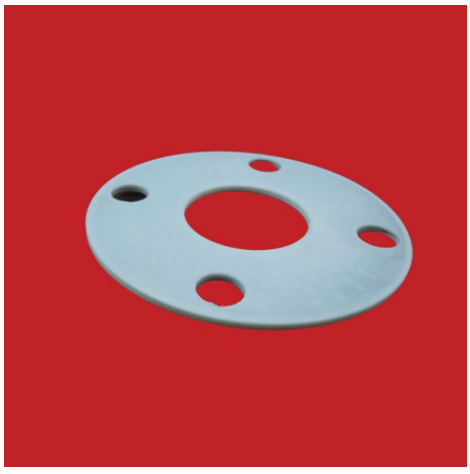
Backup Rings: We can design and manufacture an almost limitless range of PTFE backup rings (BURs).

Drag Bearings: The reinforced PTFE substance AF115 was created especially for use in slide bearing and skidway applications. For maximum compressive strength, this material combines a special mix of filler chemicals.



Vessel Seats: Our company creates valve seats using a variety of AF materials, such as PTFE and VICTREX PEEK.

Rods & Tubes: In addition to offering Virgin PTFE, our selection of tubes and rods also includes PTFE that has been filled with glass and carbon



Types of Polymers

- PTFE (POLY TETRA FLUORO ETHYLENE)
- PTFE COMPOUNDS
- VICTREX PEEK (POLY ETHER ETHER KEYSTONE)
- PEEK COMPOUNDS
- PCTFE (POLY CHOLORO TRI FLUORO ETHYLENE)
- VESPEL DEVLON
- DELRIN (POM)
- NYLON
- PFA
- FEP
- UHMWPE
- POLYURETHANE & RUBBER ELASTOMERS etc...

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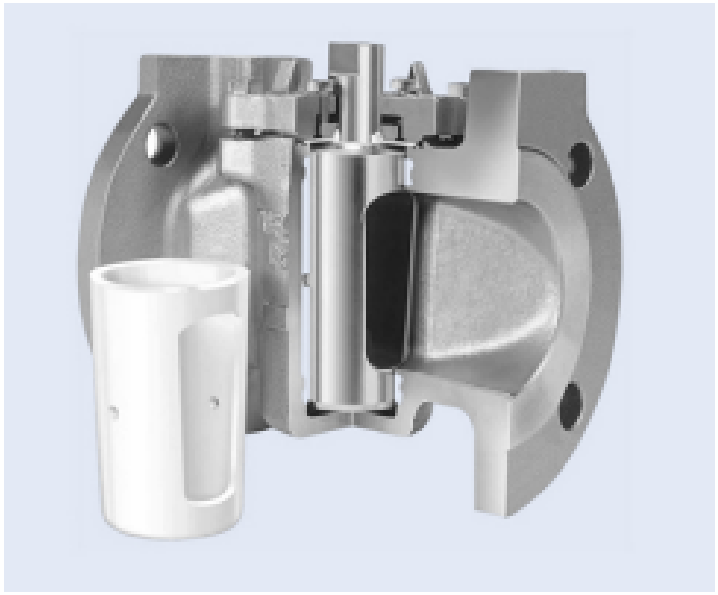
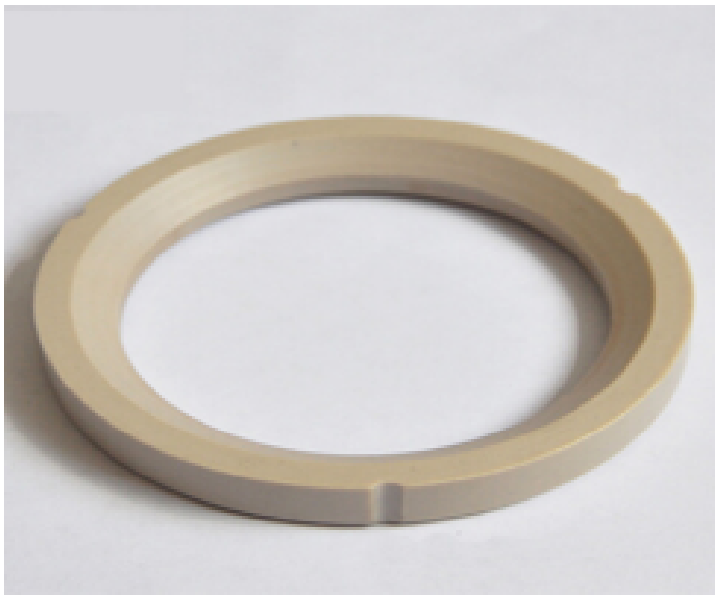
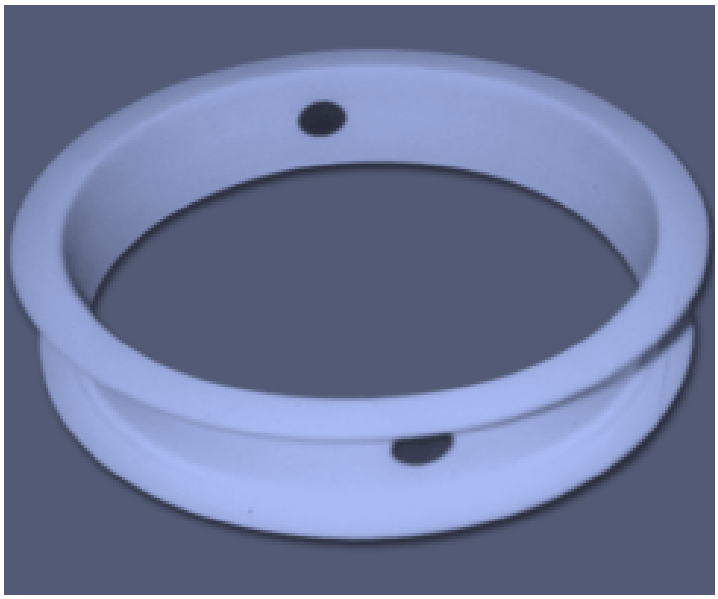
Valve Seats:







Hydraulic & Actuator Seals

VICTREX VIRGIN PEEK 450G

- Excellent strength and stiffness.
- High ductility.
- Excellent Chemical resistance.
- suitable for sterilization for medical and food contact applications.
- Low coefficient of friction and higher wear resistance without any kind of lubrication.

PTFE BROCHURE

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PEEK Tube & Rod Manufacturing Range:

- Dia – 10mm to 650 mm

PEEK Gardes:

- Victrex- 450G, 450PF, 450FC30, 450GL30, 450CA30 etc..

DuPont™ Vespel® Polyimide

- DuPont™ Vespel® Polyimide is an extremely high-temperature, creep-resistant plastic material that is often used in high-heat environments where thermoplastic materials are. Vespel®, a lightweight alternative to metal.
- DuPont™ Vespel® Polyimide Material
- SP-1 –. SP-21 –SP-211 –SP-22 & SP-3

PCTFE -NEOFLON

NEOFLON PCTFE is a high-performance thermoplastic. Chlorine and fluorine in the molecule contribute to the combination of outstanding properties and good melt-flow processability. Features of NEOFLON PCTFE have high compressive strength and low deformation under load. In particular, its cold-flow characteristic is lower than other fluoropolymers and it does not deform under load at room temperature. In addition, PCTFE retains its excellent properties over a wide thermal range.

NEOFLON GRADES

- M-300 Series (M-300, M-300H, M-300P)
- M-400H

PCTFE -Application

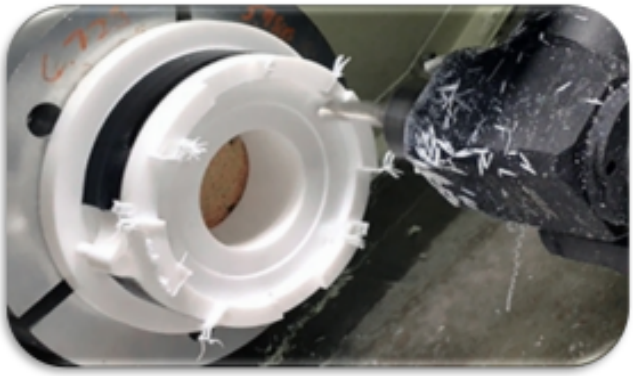
Valve and pump parts — diaphragms, impellers, seats, and plugs Translucent tubing, sight glasses, and flowmeter tubes Heavy-wall solid pipe and fittings Gears, cams, and bearings Laboratory ware Coatings for pipes, fittings, valves, heat exchangers, pumps, tanks, reaction vessels, autoclaves, drums, and containers Anti-sticking surfaces, bellow, diaphragms, films, etc...

Temperature Range:

-240°C to +204°C

IGP GROUP

MANUFACTURING FACILITIES



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