



MANUFACTURER AND SUPPLIER OF  
PTFE PRODUCTS. HYDRAULIC SEALS. COMPRESSOR PARTS.  
ALL ENGINEERING POLYMERS

AN ISO 9001:2008 certified company

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# Company profile

- What started as a small venture in 1994 with a 50 square yard piece of land and an investment of few thousands has today come a long way with a list of achievements and milestones.
- It gives us immense pleasure to introduce ourselves as Fluoroplast Engineers Pvt. Ltd. We are one of the leading Manufacturers of PTFE and its Specialty Products.
- Prime Quality of the supplied goods is not an event of chance; it is a conscious outcome of hard work. We believe in working effectively and efficiently to deliver products that fully satisfy our customers' needs.
- Our Company has been providing all these products since year 1996. These products are manufactured in Ahemdabad (Gujarat – India) and are well established in the market.
- Our quality PTFE and its Specialty Products are used by many OEM.
- We offer reverse engineering, application based designing, unique tailor made approach in PTFE and various equivalent high end material.
- We manufacture and distribute world PTFE products and compressor spares for the major industrial sectors. We strive to continue and develop our export markets globally.
- We offer our customers a full range of high quality products supported by a comprehensive stock holding. We provide the most responsive delivery, together with the best technical support and after sales service.



# QUALITY POLICY AND MISSION

- **Quality Policy**

- We, at FEPL, strive to delight our customers by
- Manufacture of quality PTFE Products through Effective Implementation of Quality Management Systems, and their timely delivery.
- Implementing Product and Process Control along with Cost Effectiveness.
- Continual Improvement through In-House technology updation, attention to Customers' Feedback, appointment of Technical Veterans and usage of the latest Technologies.
- Compliance of Statutory and Regulatory Requirements under National and International Standards.

- **Our Mission**

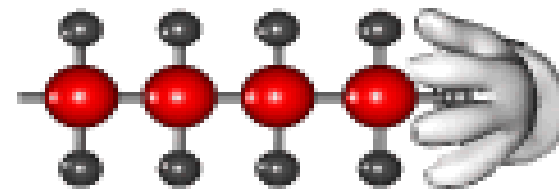
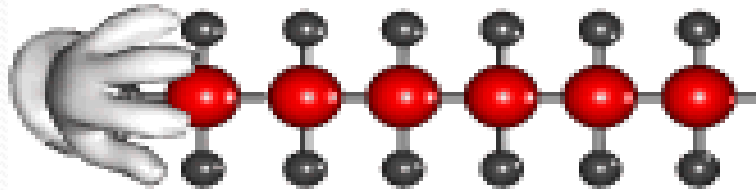
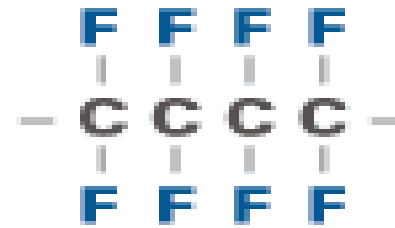
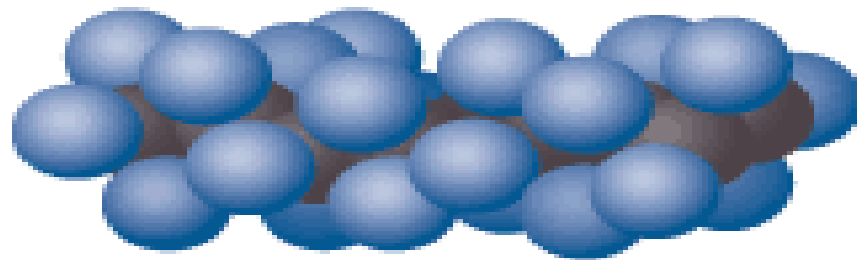
- Sourcing good raw material, processing better products and ensuring timely delivery in the best possible way for the fulfillment of customers' expectations is our motto.
- Today, at FEPL, we are devoting our time to creating
  - 1) A knowledge building process (R & D).
  - 2) One stop solution. (Large Range of products under one roof)
  - 3) Service Oriented Unit (timely delivery and customer satisfaction)



# PROMOTERS

- Mr. Ashwin R Shah, an active and knowledgeable entrepreneur is now the promoter of our company.
- He is a visionary who has devoted his life to an extraordinary career. He has now become a legendary name in the field of PTFE.
- His in-detail knowledge and farsighted business policies have helped FEPL become one of the foremost manufacturers of all types of PTFE products.
- Second generation is actively involved in process of Growth and Development.
- Mr Keyur Shah An Engineering Graduate by discipline is another pillar for the momentum. He takes care of operations and New Product development in the company.
- FEPL has a charismatic team that is always eager to innovate and create a new line of products as per the changing demands of the market.

# WHAT IS PTFE and ITS STRUTURE



**Polytetrafluoroethylene (PTFE)** is a synthetic of fluoropolymer and of tetrafluoroethylene that finds numerous applications.

# Property

1. Stands up to temperatures as high as 500° F (260° C).
2. Resists virtually any chemical, even the most toxic and corrosive.
3. Maintains elasticity at temperatures as low as -112° F (-80° C).
4. Can be combined with other substances to meet a wide range of performance demands.

MOLECULAR FORMULA	$(C_2F_4)_n$
DENSITY	2100 -2200 kg/m <sup>3</sup>
MELTING POINT	327 °C
THERMAL CONDUCTIVITY	0.25 W/(m·K)



## WHY PTFE ??

- Extreme heat and cold resistance:  $-190^{\circ}\text{C}$  to  $+ 260^{\circ}\text{C}$
- High release from sticky materials ("non-stick")
- Chemical, corrosion, and moisture resistance
- Easy cleaning (nothing bonds permanently)
- fungus resistance
- Food contact approval



## OUR MAIN ASPECTS

- PTFE AND FILLED PTFE PRODUCTS
- HYDRAULIC AND EARTHMOVERS SEALS AND SEALKITS
- COMPRESSOR PARTS
- OTHER ENINGEERING POLYMER





# PTFE PRODUCTS

- PTFE TUBE
- CARBON
- PTFE ROD
- GRAPHITE
- BELLOWS
- SLEEVE
- BRONZE
- SIGHT GLASS
- TURCITE

- All the parts are as parts the customer design , drawing & sample with 100% PTFE as well as filled grade PTFE
- i.e.
  - carbon filled,
  - bronze filled,
  - glass filled,
  - graphite filled,
  - ceramic filled & Turcite with available pigment

**A BRIEF OVER VIEW  
OF  
PTFE PRODUCTS**



# GLASS FIBER

- Milled glass fibers have the least effect on chemical and electrical properties and add greatly to the mechanical properties of unfilled PTFE. Addition of glass improves compressive properties by as much as 40% and improves wear resistance greatly. These compounds resist acids and oxidation but can be attacked by alkali.



# GRAPHITE

- Graphite has good chemical resistance to corrosive environments and exhibits good initial wear and rubbing/sliding characteristics in dry and water applications. Commonly blended with carbon and PTFE.
- **Application**
- Water Turbine (Hydro Turbine)
- Steam Turbine
- Gas Turbine
- Rotary Compressor & Blowers



# BRONZE

- This filler has better wear, creep resistance, and higher thermal conductivity than glass fiber with PTFE. The compound is easily machined, but has poor chemical resistance in the presence of acids and alkali. Useful in applications which undergo high mechanical loads or high-speed rubbing contacts where the bronze filler supplies the strength and conductivity to carry away excess, unwanted heat.





# Molybdenum Disulfide

- This filler is used frequently in combination with others to increase surface hardness, stiffness, and to reduce the starting coefficient of friction and steady-state wear. Its effect on electrical and chemical properties is negligible.

# CARBON

- Carbon has good chemical resistance to corrosive environments. It exhibits good initial wear and rubbing or sliding contact characteristics, both dry and water applications. It is frequently used in piston rings to reduce cylinder wall wear by entrapping abrasive foreign particles in their relatively soft surfaces.

- **Application**
- Pump housings
- Valve seats
- Gaskets
- Roller coverings
- Shaft bearings
- Filter housings
- Etching plates
- Shaft Seals
- Slide runners





## PTFE ROD

- PTFE Rod is often chosen to produce bearings because of its very low friction and also for its free running ability. Because of its ability to conform to shape otherwise known as flow, PTFE Rod is used for seals in valves, this is because it can conform to shape and create a high specification valve seal.
- PTFE Rod can easily be machined but due to the surface softness, care must be taken in lathe jaws or high compressive loads, which may cause distortion
- Another important element to remember regarding PTFE Rod is the coefficient of expansion due to heat changes; this can be uneven with PTFE and may cause distortion in components.



- PTFE Rod is manufactured in two distinct ways, extruded PTFE Rod is the most popular and is relevant to smaller sizes, Molded PTFE Rod is relevant to the diameters over 100mm in size, smaller sizes are also available in extruded form.

➤ **Size :**

PTFE Rod is often made in diameters ranging from 3mm diameter up to a maximum diameter of 300mm diameter and is made in lengths which range from 100mm to 1000mm





## PTFE SHEET

- PTFE Sheet is often chosen for very low friction sideways and wears blocks.
- PTFE Sheets can provide very low resistance with mating components to offer a free running sideways surface requiring minimal momentum to move products or components.
- PTFE Sheet is also used in lining of cryogenic chambers due to its excellent and rare ability with very low temperatures.
- applications include shims or gaskets for external use; this is because PTFE Sheet is highly resistant to weathering and any environmental long term effects.
- PTFE Sheets are available in two form Molded & Skived. Molded Sheets are commonly known as Rigid Sheets and Skived sheets are known as flexible or thin sheets.

## SKIVED PTFE SHEET

- Molded PTFE Sheet is generally available in sheet sizes of 300<sup>2</sup>mm, 400<sup>2</sup>mm, 450<sup>2</sup>mm, 600<sup>2</sup>mm, 1000<sup>2</sup>mm, 1200<sup>2</sup>mm, and 1500<sup>2</sup>mm and in thickness ranging from 0.25mm up to a usual maximum of 100mm with many interspaced range of sizes to suit customers requirements
- Skived or Flexible PTFE Sheet is generally available in Roll form from 300mm, 450mm, 500mm, 600mm, 1000mm, 1200mm, & 1500,,in width and in thickness ranging from 0.1mm to up 3.5mm.





## PTFE BELLOWS

- Bellows are specially designed from virgin PTFE and is contour molded. This manufacturing method guarantees an excellent structure of the material; symptoms of ageing are practically excluded.
- Very long term durability and low maintenance cost are assured. The bellows can be used up to 200°C. Bellows serve for compensation of vibration, thermal strain expansion and Axial & Redial motion.
- The sealing surfaces are covered end plates and individually boxed for protection against mechanical damage. Limit bolts are preset to prevent over extension during operation.

- These Bellows are meant for resisting highly corrosive plants and piping for aggressive Medias. These Bellows are installed in PTFE Lined Carbon Steel Piping and equipment without additional gaskets. For use with piping and equipment made of glass, enamels and ceramics we recommend PTFE Gaskets, offered as accessory.
- Size :  
Bellows are manufacturing in different sizes from NB 25mm to NB 300mm. The standard length is 67.5mm long.



# PTFE SLEEVES ADVANTAGES

- High Performance from -200°C to 260°C (Peak 300°C)
- Unaffected at soldering temperatures; Autoclavable
- Suitable for High-Density wiring
- Smooth Internals allow closer fit
- Superior Tape-Wrapping-Sintering (TWS) Method provides good mechanical stability, high burst pressure and long flex-life
- High Dielectric Strength
- Resistant to UV Radiation
- Fire non-propagating
- Inert to almost all chemicals (few exceptions), solvents, fluxes, oils; Zero extractable
- Freedom from Ageing, Fungus and Water Absorption
- Biocompatible





# APPLICATIONS

**Defence and Military, Electronics,**

- **Radars; Aircraft and Satellites**

- **Communications/Electronics**

- Control Systems
- Computers and Professional Electronics
- RF Signal transmission, antennas

- **Electrical**

- Insulating cover for Transformer winding leads and other electrical joints, including heater interconnections
- Insulating cover over immersion heaters for aggressive chemicals or corrosive liquids
- As stress relief boots at connector ends for harnesses/cable assemblies
- Protective cover over electrical leads in Air-conditioning/Refrigeration sealed units

- **Medical**

- Highly Flexible PTFE/PFA Dual-wall tubings for semi-medical (low-pressure, low-diffusion, gas flow devices) applications
- For manufacturing Resection Loops for Prostate surgery
- Endoscopic, Eurodormia applications
- Cover for Sclerotherapy needles
- In catheters and canulas

# Continue...

- **Chemical/Petroleum**
  - As carriers for corrosive, high viscosity chemicals or fluids, also under high pressure and temperature
  - As flexible Carriers for steam
  - As Ink capillaries for pen recorders
  - Gas Discharge tubes
  - Bushes cut to size, distillation column packing
  - Insulating cover over stirrers for acids and corrosive liquids
- **Hydraulic/Pneumatic**
  - As protective cover over hoses for injection molding machines
  - Hoses (with or without stainless steel wire braid) for hydraulic/pneumatic applications
- **Automotive**
  - Gear box control interconnections
  - For branching leads in harness/cable assembly
  - Used as cover over push-pull cable to reduce friction



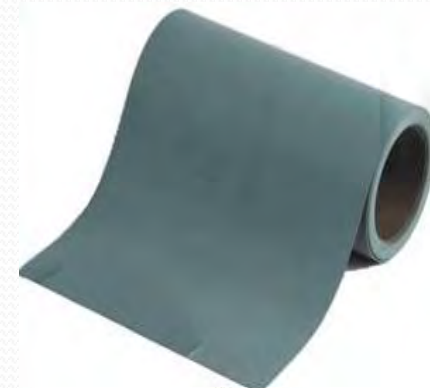


## TURCITE EQUIVALENT

- Quite simply – Turcite<sup>®</sup> is PTFE impregnated with fillers and additives that serve to enhance the wear properties of the material.
- It is used, most often in a sheet form, in thicknesses ranging from 0.5mm (0.02”) to 4mm (0.16”), although in some applications, it is also used as a bush and in more rare applications it is used as a thick plate.
- Being based on PTFE, the material cannot be extruded like a normal plastic sheet and instead needs to be “skived” – the process most commonly used to make thin PTFE sheets.
- Also, the material will not easily adhere to other surfaces – another feature resulting from its PTFE base.
- Therefore a chemical etching is required on one surface of the material, so the sheet can be bonded to other articles.

# Applications

- Planers,
- milling machines
- SPMs
- Sharper's, horizontal & vertical boring machines,
- hydraulic & pneumatic power presses,
- press brakes,
- all types of grinders,
- radial drills,
- automatic screw machines,
- gear hobbers,
- gear shapers,
- multi-spinderle automats,
- broaching machines,
- CNC machines and machining centre.





# KEY POINTS

- DEVELOPMENT
- QUALITY
- PERFORMANCE
- TECHNICAL SUPPORT
- AFTER SALES SERVICES
- ON TIME DELIEVERY PRODUCT
- CUSTOMER SATISFACTION



HOW CAN  
WE SERVE  
YOU.

**Drop an email on [europa@fluoroplastind.com](mailto:europa@fluoroplastind.com)**