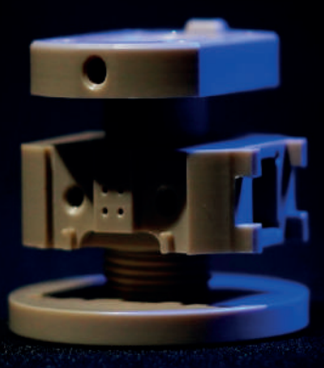
Precision Machined Polymer Components

POLY FLUORO LTD.
PERFORMANCE PLASTICS

Poly Fluoro offers high-precision machined components in various polymers. With a state-of-the-art CNC machining facility that boasts turning, turn-milling, and milling in up to 5-axes, we have unmatched capabilities in manufacturing close-tolerance, high-complexity parts.

Polymers exhibit various properties; each material requires a unique understanding of its behavior during machining. Our experience across a vast range of different polymers has equipped us to quickly understand client requirements and turn out high-quality machined parts with minimal lead times.

- High-temperature plastics
- Excellent chemical and weather resistance
- 4 and 5-axis milling allows fewer settings for higher accuracy
  - Close tolerances within 20 microns
- Range of over 30 polymers
  - High strength materials
- Heat stable materials
- Exceptional dimensional stability



Material Name	Main Properties	Notes/Applications	Temperature Range
PTFE	- Very low coefficient of friction and excellent chemical resistance. - Soft and easily machinable. - Will deform under high loads. - Available in fillers of glass, bronze, carbon, MoS2, stainless steel, ekonol, graphite, PEEK, and ceramic.	- Being chemically inert, PTFE resists chemicals and high temperatures while offering self-lubrication. - Material of choice for automotive, aerospace, railways, machine tool, oil & gas, heavy electricals, chemical industries, and more.	-40°C to 260°C
TFM, PFA, FEP	- Much denser polymer structure than Virgin PTFE. - Displays better stress recovery.	- Modified TFE polymers can be welded for fabrication. - Excellent for bellows and diaphragms. PFA and FEP are melt processable variants.	-40°C to 260°C
UHMWPE	- Highly resistant to corrosive chemicals, except for oxidizing acids and organic solvents. - Extremely high wear resistance.	- Also known as High Modulus Polyethylene (HMPE) or High-Performance Polyethylene (HPPE).	-40°C to +80°C
PCTFE	- Excellent for cryogenic and Oxygen use.	- A homo-polymer of Chlorotrifluoroethylene	-40°C to 260°C
PEEK	- Excellent chemical resistance and mechanical properties at elevated temperatures. - High tensile strength and dimensional stability. - Available in fillers of carbon, glass, graphite, and PTFE.	- FDA approved. - Most effective as a seal, backup ring, V-packing, or Chevron seal. - Used as rotary seals in nuclear applications.	-40°C to 260°C
Acetal or POM or Delrin	- Displays good resistance to wear and deformation under load. - Easy to machine. - Dimensionally very stable	- Excellent for valve seat applications, ferrules, probes, and sensors.	up to 80°C
PPS or Ryton	- Excellent chemical resistance and mechanical properties at elevated temperatures. - High tensile strength and dimensional stability.	- Used extensively in pulp and paper manufacturing as it resists specific chemicals. - Cost effective alternative to PEEK.	-40°C to 220°C
PVDF or Kynar	- Excellent chemical resistance. High tensile strength and dimensional stability. - Resistant to creep.	- Used in chemical industries for linings, fittings, and sleeves. - Excellent in semi-conductor components.	-40°C to 220°C
PA or Nylon	- Displays good resistance to wear. - Offers thermal and electrical insulation in moderate conditions. - Easy to machine. - Dimensionally very stable	- Excellent as bobbins, sliding elements, and insulating sheaths. - PA6, PA66, and PA12 variants - enhanced properties can be achieved by filling with glass or PTFE.	up to 80°C
PEI or Ultem	- High chemical resistance. - Excellent dielectric strength. - Can be both compression and injection moulded.	- Finds application in wastewater management, chemical processing, heavy electricals, and medical equipment.	up to 180°C
PI or Kapton	- Among the most robust polymers with superior resistance to both impact and temperature. - As a film, it exhibits excellent dielectric strength.	- Used as an insulation material in film form. - Can be compression moulded to make high-strength seals, and valves.	-250°C to 400°C

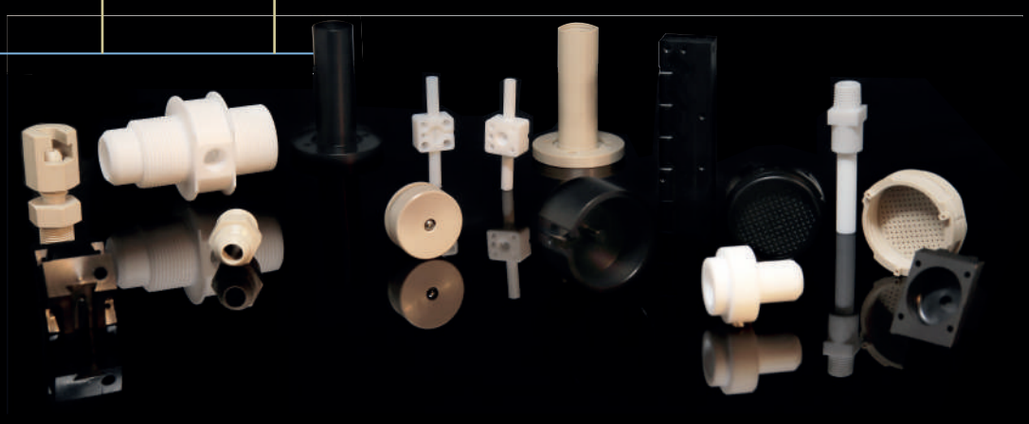
Why Poly Fluoro?

- We have **one-of-a-kind** facilities for processing, machining, and inspecting our polymer components.

- Since our factory is dedicated to polymers, there is **no risk** of metal ingress or contamination during the production process.

- We have over **35 years of experience** with a global network of consultants, so no polymer is out of our scope or capability to master.

Automotive | **Precision instrumentation** | **Oil & Gas** | **Railways** | **Utilities** | **Aerospace**



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