HIGH PERFORMANCE ENGINEERING
PLASTICS AND STOCK SHAPES
Specialising in high quality PTFE compression moulded and extruded rod and tube, we offer a wide range of diameters and lengths suitable for today’s modern machining.

PTFE Extrusion
- Rod: 1/4” - 5” diameter up to 118” length
- Tube: 5/8” - 6” diameter up to 118” length
- PTFE thin wall tubing in a variety of sizes and colours

Compression Moulding
To produce rod lengths to 72” we use a unique process for low stress material for high precision machining within a narrow tolerance band.
- Rod: 1/8” – 2” diameter up to 72” length
- Rod: up to 60” diameter at various lengths
- Tube: 3/4” – 60” OD at various lengths

Precision Grinding
We offer a precision grinding service to ensure close tolerance rods for modern machining. We ensure a high level of surface finish with a constant tolerance from batch to batch.
Exploiting our specialised processing equipment and wide tooling range, we are able to convert high performance and melt fluoropolymer materials into semi-finished shapes for post machining or low to high volumes of moulded components.

Materials include:

PEEK, PCTFE, PFA, FEP and PPS.

Our range of products includes extruded and hot compression moulded rod, heavy tubing, sheet and custom shapes and can be supplied plain or chemically etched ready for bonding.

**Melt Extrusion**

- Rod: 1/8” – 4” diameter up to 118” length
- Tube - Heavy wall: 3/4” ID to 4” OD in a variety of lengths
- Sheet: up to 7” width x 39” length x 2” thickness

**Hot Compression Moulding**

- Rod: 1 1/8” – 8” diameter up to 8” length
- Tube:
  - 1” – 4” ID x 2” – 6” OD up to 8” length
  - 3/8” – 10” ID x 5” – 12” OD up to 6” length
  - 11” – 20” ID x 14”– 22” OD up to 4” length
  - 20” – 33” ID x 24”– 37” OD up to 2 1/2” length
- Sheet: 19.5” length x 19.5” width up to 1.5” thickness

**Special Products**

- Amorphous clear PCTFE sheet for chemically resistant sightglass covers
- Custom shaped moulded billets and sheet using low cost tooling
- Lining of customer steelwork
- Precision grinding service for close tolerance
- Injection moulded PEEK billets

With over 50 years of experience in the manufacture of PTFE, melt fluoropolymers and high performance polymers, our range of engineering plastics and stock shapes is one of the most extensive in the world.
As one of the largest UK manufacturers of semi-finished virgin and filled PTFE sheet and tape we ensure each product is tailored to meet customer requirements.

Our extensive range of PTFE sheets and tapes includes dimpled, moulded, skived and self-adhesive; available in a variety of thicknesses. A fast turnaround service is available on non stock items and same day dispatch on all standard stock items.

Using our in-house services all items can be supplied chemically etched on one or both sides using the Fluoroetch® HD etching process.

Self-Adhesive Backed Tape
(Fluoroetch® SA)
- Four standard thicknesses; 0.005", 0.010", 0.016" and 0.020"
- Available as continuous rolls and slit to specific widths
- Food approval (FDA & ISO) used for lining, hoppers and chutes

Dimpled Sheets
- 1/8", 0.177" and 0.196" thick up to 48"
- Bridge and pot bearings: 0.177" or 0.197" thick; supplied as sheet or machined to size
- Available in filled grades of PTFE
- Dimpled sheets either to BS 5400 or EN1337-2

Fluoropack® PTFE/Cork Laminate
- Sheets available 48" x 24" by 0.095" thick - for blister pack tools

PTFE Coated Glass Cloth
- Available as 39" wide rolls or slit to customer requirements
- Ideal for heat wrapped packaging
PTFE is well-known for being a non-stick material; therefore, to enable bonding to other substrates, surface modification in the form of chemical etching is required.

Our Fluoroetch® HD sodium / ammonia process is the most effective etching medium available. We offer a full in-house service of comprehensively tested chemical etching and bonding of fluoropolymers, including PTFE, PFA, ECTFE, PCTFE, FEP and TFM.

**Etching**
- Up to 48” width on one or both sides
- Etchant is specifically prepared for each batch run to ensure ultimate bond strength
- Etched sheet can be factory bonded for the manufacture of expansion bearings, slide bearings and skidways
- Etching of free-issue materials in sheet form or finished components

**Bonding**
- Dedicated hot and cold cure bonding service
- Sheet sizes up to 0.118” x 60” can be bonded at any one time
- Lengths up to 2.5 foot have been bonded
- Bonding of materials include: PTFE, rubber, steel, cork and wood
- Adhesives available include: epoxy, contact and isocyanates
Our company Fluorinoid® register, based on PTFE and thermoplastic technologies, includes over 500 materials that offer exceptional characteristics enabling them to operate in demanding environmental conditions at temperatures to over 572°F.

Materials include:
PTFE, PEEK, PPS, PFA, PVDF, PPS, ETFE and PCTFE along with a variety of fillers, including glass, carbon, graphite, bronze, ekonol and aluminium.

Service
- Advice on material selection to meet specific applications
- Customer specific blends including colour pigments to provide exclusivity
- Formulation and in-house blending of special material compounds in a clean and controlled environment
- Testing of materials and finished products to a wide range of European, US and International standards
- Prototyping available
- Materials conditioned and stress-relieved to ensure optimum quality when machining to tight tolerances
- Advanced Surface Coatings from our F-LON™ range includes Sol-Gel Ceramic Technology

Exceptional Characteristics
- High chemical resistance
- Low co-efficient of friction
- Exceptional dielectric properties
- Thermal insulation
- Good wear resistance

We ensure the highest standards of finished product by retaining complete control of the manufacturing process, whilst converting compounds into semi-finished products.

Compounds can be moulded or extruded to produce stock shapes or machined into components to suit individual specifications offering high quality, end-to-end service that is second to none.
The graph indicates generic minimum and maximum temperatures for different polymers in Yellow and Blue respectively; the printed figured on each is the maximum continuous temperature possible. The extended range in Orange and Grey demonstrates that the polymers temperature envelope can be increased for specific applications and/or for short term use.

<table>
<thead>
<tr>
<th>ServiceTemperature</th>
<th>PTFE</th>
<th>TFM</th>
<th>PFA</th>
<th>FEP</th>
<th>ETFE</th>
<th>PCTFE</th>
<th>ECTFE</th>
<th>PVDF</th>
<th>PEEK</th>
<th>PEKK</th>
<th>PI</th>
<th>PPS</th>
<th>Nylon 6</th>
<th>Special Polyamide</th>
<th>UHMWPE</th>
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<td>Short Term</td>
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</table>

The above physical properties are typical values for comparative purposes only and do not represent a product specification. Properties will vary depending on the source of raw material, method of processing, physical form of the product or direction of measurement etc. The above properties must not be used for design purposes. For the correct properties in a specific application please refer to our Technical Department.

www.fluorocarbon.co.uk
### Typical Properties Table

#### Fluoropolymers and Engineering Plastics

<table>
<thead>
<tr>
<th>Fluoronoid® grade</th>
<th>Material</th>
<th>Density (g/cm³)</th>
<th>Flammability</th>
<th>Water absorption</th>
<th>Tensile strength (psi) at 73.4°F</th>
<th>Elongation at break (%) at 73.4°F</th>
<th>Rockwell hardness</th>
<th>Shore hardness D</th>
<th>Coefficient of friction</th>
<th>Volume resistivity (Ω·cm)</th>
<th>Dielectric strength (V/mil)</th>
<th>Coefficient of linear expansion (10⁻⁵ F⁻¹)</th>
<th>Maximum continuous operating temperature (°F)</th>
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<td>FL100</td>
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<td>2.14-2.19</td>
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<td>2900-5600</td>
<td>200-450</td>
<td>55-65</td>
<td>0.05-0.2</td>
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<td>60-70</td>
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<td>10⁻⁵</td>
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<td>10⁻³</td>
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<td>10⁻⁶</td>
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<td>6</td>
<td>185-293*</td>
<td></td>
</tr>
</tbody>
</table>

NC - Non-combustible  
SE - Self-extinguishing  
C - Combustible

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Halar® registered trademark of Solvay, Vespel® registered trademark of DuPont. *Upper temperature dependent on application, please call for assistance.
Fluorocarbon are pleased to announce we have been awarded NORSOK M-710 approval for 10 of our Fluorinoid® materials.

The NORSOK M-710 specification underlines the need for oilfield equipment OEMs to achieve higher levels of quality and compatibility for non-metallic seals used in oilfield equipment.

Although this started with mainly Norwegian or European requests for NORSOK M-710 approved materials it has now extended across the globe, making NORSOK into an internationally recognized standard.

<table>
<thead>
<tr>
<th>Material Code</th>
<th>Polymer Type</th>
<th>Meet NORSOK M-710 Acceptance Criterion</th>
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<tbody>
<tr>
<td>FL010</td>
<td>Virgin PTFE</td>
<td>YES YES YES YES</td>
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<td>FL011</td>
<td>Filled PTFE</td>
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<td>FL015</td>
<td>Filled PTFE</td>
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<td>FL020</td>
<td>Modified PTFE</td>
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<td>FL021</td>
<td>Modified Filled PTFE</td>
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<td>FL030</td>
<td>Virgin PEEK Black</td>
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</tr>
<tr>
<td>FL031</td>
<td>Filled PEEK</td>
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</table>

Using our modern, qualified laboratory, we offer full traceability on all products and materials and ensure the highest quality finish.

With day-to-day testing and analysis to ASTM, DIN and BSI standards. Testing includes, but is not limited to: tensile, elongation, density, hardness zero, strength time and peel testing.

our modern, qualified laboratory, we offer full traceability on all products and materials and ensure the highest quality finish.

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FCL-SB-USA Issue 2