

717 4445

# Polypenco: Product data sheet



## PTFE

Issue: May 1995

### Polytetrafluoroethylene

This material provides the ultimate in chemical resistance, extremes of operating temperature, very low friction and superb electrical properties.

- Tough/flexible
- Wide operating range (-260°C to +250°C)
- Poor creep resistance
- Excellent chemical resistance (pH 0-14)
- Very low coefficient of friction
- Non-stick surface
- Natural white colour
- Superb electrical/dielectric performance

Application: Gaskets, chute linings, insulators, valve seats, 'O' rings.

### Delivery Programme

|                         |             |             |
|-------------------------|-------------|-------------|
| Extruded Rod 2m long    |             |             |
| Diameter (mm):          | 5 (Min)     | 40 (Max)    |
| Extruded Rod 1m long    |             |             |
| Diameter (mm):          | 45 (Min)    | 100 (Max)   |
| Moulded Rod 300mm long  |             |             |
| Diameter (mm):          | 38.1 (Min)  | 152.4 (Max) |
| Moulded Rod 150mm long  |             |             |
| Diameter (mm):          | 165.1 (Min) | 304.8 (Max) |
| Extruded Tube 2m long   |             |             |
| O.D. (mm):              | 16 (Min)    | 75 (Max)    |
| I.D. (mm):              | 10 (Min)    | 60 (Max)    |
| Moulded Tube 300mm long |             |             |
| O.D. (mm):              | 60 (Min)    | 220 (Max)   |
| I.D. (mm):              | 30 (Min)    | 200 (Max)   |
| Thin wall tubing        |             |             |
| I.D. (mm):              | 0.33 (Min)  | 25.4 (Max)  |
| Wall thickness (mm)     | 0.15 (Min)  | 1.27 (Max)  |
| Sheet 1.2m Square       |             |             |
| Thickness (mm):         | 1 (Min)     | 50 (Max)    |
| Plate 610mm Square      |             |             |
| Thickness (mm):         | 6 (Min)     | 75 (Max)    |

### Technical specification

| Property                             | ASTM Test Method | Units                              | PTFE              |
|--------------------------------------|------------------|------------------------------------|-------------------|
| Colour                               | -                | -                                  | White             |
| Specific Gravity                     | D792             | -                                  | 2.2 - 2.3         |
| Water Absorption                     |                  |                                    |                   |
| Saturation in water                  | D570             | %                                  | 0.02              |
| Tensile Strength                     | D638             | N/mm <sup>2</sup>                  | 12 - 24           |
| Tensile Modulus                      | D638             | N/mm <sup>2</sup>                  | 340 - 638         |
| Elongation                           | D638             | %                                  | 100 - 500         |
| Flexural Strength                    | D790             | N/mm <sup>2</sup>                  | 97 - 99           |
| Flexural Modulus                     | D790             | N/mm <sup>2</sup>                  | -                 |
| Hardness                             | Rockwell         |                                    |                   |
| Shore D                              | -                | -                                  | 80 - 85           |
| Melt Point                           | D2117            | °C                                 | 327               |
| Max allowable service temp in air    |                  |                                    |                   |
| for short periods (1)                | -                | °C                                 | 300               |
| continuously for 20000hrs (2)        | -                | °C                                 | 250               |
| Minimum Service Temperature          | -                | °C                                 | -260              |
| Linear thermal expansion coefficient | D696             | K <sup>-1</sup> x 10 <sup>-4</sup> | 10 - 12           |
| Thermal Conductivity                 | C117             | W/K.m                              | 0.28              |
| Flammability                         | D635             | -                                  | Non               |
| UL (thickness in mm)                 | UL-94            | -                                  | Flammable         |
| Volume Resistivity                   | D257             | Ohm.cm                             | >10 <sup>14</sup> |
| Dielectric Strength (3)              | D149             | kV/mm                              | >24               |
| Outside applications - UV resistance | -                | -                                  | A                 |
| Acids - Strong (pH < 3)              | -                | -                                  | A                 |
| Alkalis - Strong (pH > 11)           | -                | -                                  | A                 |
| Chlorinated Hydrocarbons             | -                | -                                  | A                 |
| Hot Water                            | -                | -                                  | A                 |

### Authorized Distributor

**Barkston Plc**  
**PONTFRAC T LANE**  
**CROSS GREEN**  
**LEEDS LS9 0DX**

- (1) Only a few hours, with little or no load applied
- (2) After these periods mechanical properties reduce by approx 50%.  
Note, however, that service temperatures are load and time dependent
- (3) Test specimen 1.6mm thick unless otherwise stated.

- 'A' No attack
- 'B' Mild attack by absorption
- 'C' Dimensional change due to absorption
- 'D' Decomposition in short time
- 'E' In steam - at 160°C, decomposition after short time

The data are typical values and are not intended to represent specifications. Their aim is to guide the user toward a material choice.