# KYNAR® 740 PVDF natural - Stock Shapes (rods, plates, tubes)

**Chemical Designation**
PVDF (Polyvinylidene fluoride)

**Colour**
white translucent

**Density**
1.78 g/cm$^3$

**Main features**
- excellent chemical resistance
- inherent flame resistance
- high gamma radiation resistance
- good UV and weather resistance
- good mechanical properties
- low moisture absorption
- good machinability

**Target Industries**
- chemical plant engineering
- process engineering
- medical technology
- cleanroom technology

| Mechanical properties | condition | value | unit | test method | | comment |
|---|---|---|---|---|---|---|
| Modulus of elasticity (tensile test) | @ 73 °F | 300,000 | psi | ASTM D 638 | | (1) Data obtained from public source |
| Tensile strength at yield | @ 73 °F | 8,000 | psi | ASTM D 638 | 1) | |
| Tensile strength at break | @ 73 °F | 8,000 | psi | ASTM D 638 | | |
| Elongation at break (tensile test) | @ 73 °F | 35 | % | ASTM D 638 | | |
| Flexural strength | @ 73 °F | 13,000 | psi | ASTM D 790 | | |
| Modulus of elasticity (flexural test) | @ 73 °F | 400,000 | psi | ASTM D 790 | | |
| Compression strength | @ 73 °F, 10% strain | 10,500 | psi | ASTM D 695 | | |
| Compression strength | @ 73 °F, 1% strain | 1,200 | psi | ASTM D 695 | | |
| Compression modulus | @ 73 °F | 160,000 | psi | ASTM D 695 | | |
| Impact strength (Izod) | @ 73 °F | 1.9 | ft-lbs/in | ASTM D 256 | | |
| Rockwell hardness | M Scale | 79 | | ASTM D 785 | | |

| Thermal properties | condition | value | unit | test method | | comment |
|---|---|---|---|---|---|---|
| Melting temperature | | 342 | °F | - | 1) | (1) per ASTM D3418<br>(2) Injection molded samples<br>(3) Injection molded samples<br>(4) Data obtained from public source<br>(5) injection molded samples<br>(6) Injection molded data<br>(7) injection molded data |
| Deflection temperature | @264 psi | 221-239 | °F | ASTM D 648 | 2) | |
| Deflection temperature | @ 66 psi | 257-284 | °F | ASTM D 648 | 3) | |
| Service temperature | Long Term | 300 | °F | - | 4) | |
| Thermal expansion (CLTE) | | 7.3*10$^{-5}$ | in/in/°F | ASTM D 696 | 5) | |
| Specific heat | | 0.28-0.36 | BTU/lb-F° | *** new *** | 6) | |
| Thermal conductivity | | 1.18-1.32 | BTU-in/hr-ft$^2$-°F | ASTM C 177 | 7) | |

| Electrical properties | condition | value | unit | test method | | comment |
|---|---|---|---|---|---|---|
| volume resistance | @ 73 °F, 65% RH | 2*10$^{14}$ | Ω*cm | ASTM D 257 | 1) | (1) Injection molded data<br>(2) Injection molded samples<br>(3) injection molded data<br>(4) injection molded data |
| Dielectric strength | | 1700 | V/mil | ASTM D 149 | 2) | |
| Dissipation factor | @ 100 Hz, 73 °F | 0.01--0.21 | | ASTM D 150 | 3) | |
| Dielectric constant | @ 100 MHz, 73 °F | 4.5 | | ASTM D 150 | 4) | |

| Other properties | condition | value | unit | test method | | comment |
|---|---|---|---|---|---|---|
| Moisture absorption | @ 24 hrs, 73 °F | 0.02 | % | ASTM D 570 | | (1) Thickness greater tan 0.1mm Injection molded samples |
| Flammability (UL94) | | V0 | | - | 1) | |

- Resin specification:
  ASTM D3222-05 (Reapproved 2015), I2
  Shapes specification:
  ASTM D 6713-01(Reapproved 2009) S-PVDF0110 X0000000



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