

PEEK

Polyether Ether Ketone (PEEK)

High-temperature engineering PEEK for demanding service.

Polyether ether ketone is a semi-crystalline high-performance thermoplastic with exceptional mechanical strength, broad chemical resistance, and continuous service capability above 480°F (250°C). PEEK retains structural properties at elevated temperatures where most engineering polymers soften or degrade, machines cleanly into tight-tolerance components, and is the standard choice for aerospace, semiconductor, oil and gas, and medical instrument applications.

ASTM D6262 / ISO 10932 – PEEK MOLDING AND EXTRUSION MATERIALS

UL 94 V-0

FDA 21 CFR 177.2415 (NATURAL GRADE)

ROHS / REACH COMPLIANT

APPLICATIONS

- Aerospace structural and bearing components
- Semiconductor handling, wafer carriers, and test sockets
- Oil-and-gas downhole tooling and seals
- Medical and surgical instruments (sterilizable)
- High-temperature pump and valve internals

STANDARD COLORS

Natural / Ivory, Black

GENERAL

Density **0.047 lb/in³**
ASTM D792 1.3 g/cm³

Water absorption **5/10 / 0.06/0.12 mg / %**
24 / 96 h immersion @ 73°F · ASTM D570

Water absorption **0.20 %**
Saturation in air @ 73°F, 50% RH · ASTM D570

Water absorption **0.45 %**
Saturation in water @ 73°F · ASTM D570

Flammability rating **V-0/V-0**
UL 94, 3 / 6 mm thickness · UL 94

MECHANICAL

Tensile strength **14,500 psi**
At yield / break · ASTM D638 99 MPa

Tensile strain at break **15 %**
ASTM D638

Tensile modulus **566,000 psi**
ASTM D638 3,900 MPa

Compressive stress **20,000 psi**
At 10% nominal strain · ASTM D695 135 MPa

Izod impact (notched) **0.8 ft·lb/in**
ASTM D256 42 J/m

OPERATING ENVIRONMENT

Melting temperature **640 °F**
ASTM D2133 335 °C

Thermal conductivity **1.7 Btu·in/ft²·h·°F**
@ 73°F · ASTM C177 0.24 W/m·K

Coefficient of thermal expansion **28 µin/in/°F**
Avg. 73 – 140°F · ASTM D696 50 µm/m/°C

Coefficient of thermal expansion **28 µin/in/°F**
Avg. 73 – 212°F · ASTM D696 50 µm/m/°C

Heat deflection temperature **320 °F**
264 psi (Method A) · ASTM D648 160 °C

Max service temperature **590 °F**
Short-term 310 °C

Max service temperature **480 °F**
Continuous (5,000 / 20,000 h) 245 °C

ELECTRICAL

Dielectric strength **610 V/mil**
ASTM D149 24 kV/mm

Volume resistivity **>10¹⁴ Ω·cm**
ASTM D257

Surface resistivity **>10¹³ Ω**
ASTM D257

PEEK – CONTINUED

Polyether Ether Ketone (PEEK)

MECHANICAL

Rockwell hardness
ASTM D785

R120