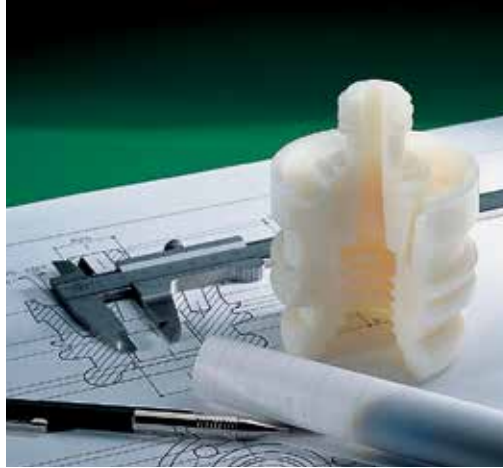


POLYETHERETHERKETONE - AFRIPEEK



PEEK is considered the most popular advanced engineering plastic with a unique combination of high mechanical properties, temperature resistance and excellent chemical resistance. AFRIPEEK is based on VICTREX® Polyetheretherketone polymers and forms part of Sustaplast's extensive range of high quality AEPP's.

PROPERTIES:

- Excellent dimensional stability.
- Hardly inflammable and self-extinguishing.
- Extremely low smoke density.
- Very high resistance to high-energy radiation.
- Outstanding sliding properties.
- Excellent abrasion resistance.
- High wear resistance.
- Optimised balance of stiffness, tensile strength and impact strength.
- Low creep tendency.
- Good machinability, thermoformability, weldability and adhesive properties.
- High dimensional stability under heat.
- Extremely high continuous service temperature.
- Low coefficient of linear thermal expansion.
- Good electrical insulating properties over a broad temperature range.

APPLICATIONS:

Parts exposed to high temperatures, mechanical loads and, for example, x-rays or gamma rays. Teletronics, transportation, medical technology, aerospace industry, chemical engineering e.g. electric insulators and housings, wire and cable insulation, rotor arms, friction discs and seals, shock absorbers, components for analytical equipment, components for dialysis equipment, valve linings, impeller wheels for pumps. Medical, pharmaceutical and food processing industries, electrical industries, coil bobbins, insulating bushings, housings, process equipment, milking machines, pumps, valves, filtration plates, heat exchangers, components subjected to repeated cleaning and sterilization.



DELIVERY PROGRAMME

Sheets | Rods
Available on request



NATIONAL DISTRIBUTION - STOCK SHAPES 086 1100 420

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| AFRIPEEK | | | |
|---|----------------------|----------------------------------|----------------------|
| PROPERTIES | TEST METHOD | UNIT OF MEASURE | AFRIPEEK |
| GENERAL | | | |
| DENISTY | DIN EN ISO 1183-1 | g/cm ³ | 1,31 |
| WATER ABSORPTION | DIN EN ISO 62 | % | 0,20 |
| FLAMABILITY 3mm | UL 94 | 3mm | V0 |
| FLAMABILITY 6mm | UL 94 | 6mm | V0 |
| MECHANICAL | | | |
| TENSILE STRENGTH | DIN EN ISO 527 | MPA | 110 |
| ELONGATION AT BREAK | DIN EN ISO 527 | % | 20 |
| E MODULUS | DIN EN ISO 527 | MPA | 4 000 |
| NOTCHED IMPACT STRENGTH | DIN EN ISO 179 | kJ/m ² | N/A |
| BALL INDENTATION HARDNESS | DIN EN ISO 2039-1 | n/mm | 230 |
| SHORE HARDNESS | DIN EN ISO 868 | SCALE D | 88 |
| THERMAL | | | |
| MELTING TEMPERATURE | ISO 11357-3 | °C | 343 |
| THERMAL CONDUCTIVITY | DIN 52612-2 | W/(m.K) | 0,25 |
| SPECIFIC THERMAL CAPACITY | DIN 52612 | kJ/(kg.K) | 1,34 |
| COEFFICIENT OF LINEAR THERMAL EXPANSION | DIN 53752 | 10 ⁻⁶ K ⁻¹ | 50 |
| LONG TERM SERVICE TEMPERATURE | GUIDELINE ONLY | °C | - 60 TO 250 |
| SHORT TERM SERVICE TEMPERATURE | GUIDELINE ONLY | °C | 310 |
| HEAT DEFLECTION TEMPERATURE | DIN EN ISO 75.VERF.A | °C | 152 |
| ELECTRICAL | | | |
| DIELECTRIC CONSTANT | IEC 60250 | N/A | 3,20 |
| DIELECTRIC DISSIPATION FACTOR | IEC 60250 | N/A | 0,001 |
| SPECIFIC VOLUME RESISTIVITY | IEC 60093 | Ω.cm | 4.9.10 ¹⁶ |
| SURFACE RESISTIVITY | IEC 60093 | Ω | 10 ¹⁸ |
| DIELECTRIC STRENGTH | IEC 60243 | kV/mm | 20 |

When machining thermoplastic stock shapes, remember...

- Thermal expansion is up to 10 times greater with plastics than metals.
- Plastics lose heat more slowly than metals, so avoid localized overheating.
- Softening (and melting) temperatures of plastics are much lower than metals and plastics are much more elastic than metals.

Getting started

- Positive tool geometries with ground peripheries are recommended.
- HSS/Tip tooling with polished top surfaces is suggested for optimum tool life and surface finish.
- Use adequate chip clearance to prevent clogging.
- Adequately support the material to restrict deflection away from the cutting tool.

Coolants

Coolants are generally not required for most machining operations, but are strongly suggested during drilling operations, especially with notch sensitive materials such as Nylon, PET-P, PAI, PBI and glass or carbon reinforced products.

In addition to minimizing localized part heat-up, coolants prolong tool life. For optimum surface finishes and close tolerances, non-aromatic, water soluble coolants are suggested. General purpose petroleum based cutting fluids, although suitable for many metals and plastics, may contribute to stress cracking of amorphous plastics such as Polycarbonate.

Because of these differences, you may wish to experiment with fixtures, tool materials, angles, speeds and feed rates to obtain optimum results.

GENERAL NOTE:

The data shown fall within the normal parameters of product properties. They should only be used as a guide to initial material selection for the relevant application and for material specification limits. Further technical information is available for specific application requirements. When no value is listed, insufficient details were available to present a usable value.