



ADVANCED THERMOPLASTICS

OVERVIEW

Rubberatkins have a range of high performance thermoplastics to complement our high-performance sealing products. Our thermoplastic materials enhance the anti-extrusion properties of our elastomeric seals in extreme high pressure and high temperature applications.

Rubberatkins currently offer four primary thermoplastic house grades PEEK™, PEKK, PEKEKK and Hytrel® in unreinforced and reinforced grades. These grades are designed for performance and longevity in high temperature and demanding environments. The range of high-performance thermoplastics can be custom moulded or precision machined to provide our clients with robust solutions.

KEY CAPABILITIES

- Engineered sealing solutions
- Prototyping, custom products
- Injection and machining manufacturing methods
- High volume production
- Optimised plastic to metal bonded products
- CAD software utilised to optimise design and process for minimal stress and optimal performance
- Multiple material testing capabilities to ensure appropriate compound selection
- All capabilities in-house grades

PEEK™

- Most ductile performance of PAEK - (PolyArylEtherKetone) range
- Broad chemical resistance
- High temperature capabilities >572 °F (>300 °C)

PEKK

- High performance thermoplastic that out performs other more common grades
- High compression strength and heat deflection
- Broad chemical resistance
- High temp capabilities >572 °F (>300 °C)

PEKEKK

- Best performing plastic out of PEEK range
- Broad chemical resistance
- Superior modulus and compression properties PEEK™ and PEKK High temperature capabilities >662 °F (>350 °C)

HYTREL®

- Where mechanical strength and durability are required in a flexible component
- Flex-resistance especially in low temperatures
- Increased heat-aging resistance



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THERMOPLASTICS

PROPERTY	PEEK			PEKK			Hytre [®]
	Unfilled	30% Glass Filled	30% Carbon Filled	Unfilled	30% Glass Filled	30% Carbon Filled	Unfilled
Tensile strength (MPa)	98	185	265	110	185	260	50
Elongation at break (%)	45	2.8	1.7	12.5	2.5	2.5	>300
Melting point (°C)	343	343	343	331	372	396	245
Heat deflection temp (°C)	152	328	336	175	358	369	50
Specific gravity (g/cm ³)	1.3	1.51	1.4	1.3	1.5	1.41	1.26

