

TECHNICAL DATA SHEET

KEPSTAN® 6002

POLYETHERKETONEKETONE PELLET OR FLAKE

KEPSTAN® is a high-performance thermoplastic material, based on PolyEtherKetoneKetone (PEKK) highly stable chemical backbone. KEPSTAN® is a unique member of the PAEK family, with distinctive structural features allowing for unrivalled possibilities in the control of crystallinity. These features include a high Ketone content and a co-polymer structure, incorporating Terephthalic and Isophthalic moieties.

The 6000 Series corresponds to the pseudo-amorphous products of the KEPSTAN® family, offering the lowest melting point and the slowest crystallization behavior, while keeping Tg close to 160°C. These properties allow for lower processing temperatures (as low as 320-330°C), and lead to amorphous or semi crystalline structures, depending on processing technologies and cooling conditions. The properties reported in the data sheet correspond to the amorphous state of the PEKK polymer.

KEPSTAN® 6003 is a high flow grade of pure unfilled PEKK resin designed to be suitable for processing technologies requiring fluidity, including among others cast film extrusion, injection molding, fiber impregnation, powder coating, bonding, welding and additive manufacturing.

TYPE

PEKK

POTENTIAL APPLICATIONS

• Chemical & plastic industry • Polymer manufacturing

DELIVERY FORM

- Flakes
- Pellets

TRANSFORMATION PROCESSES

- Blow molding
- Calendering
- Injection Molding
- Thermoforming
- Transfer Molding

RHEOLOGICAL PROPERTIES

PROPERTIES	TYPICAL VALUE	UNIT	TEST STANDARD
Melt volume flow rate (MVR), 380°C / 1 kg (716°F / 2.2 lb)	6	cm³/10min	ISO 1133

MECHANICAL PROPERTIES

PROPERTIES	TYPICAL VALUE	UNIT	TEST STANDARD
Tensile modulus, 23°C (73°F) (1BA)	2900	MPa	ISO 527-1/-2
Yield stress, 23°C (73°F) (1BA)	88	MPa	ISO 527-1/-2
Yield strain, 23°C (73°F) (1BA)	5.4	%	ISO 527-1/-2
Nominal strain at break, 23°C (73°F) (1BA)	>80	%	ISO 527-1/-2
Yield stress, 125°C (255°F), 25 mm/min (1BA)	53	MPa	ISO 527-1/-2
Nominal strain at break, 125°C (255°F), 25 mm/min (1BA)	>100	%	ISO 527-1/-2
Compression modulus, 23°C (73°F), 1 mm/min	3000	MPa	ISO 604
Compression strength, 23°C (73°F) (5mm/min)	108	MPa	ISO 604
Flexural modulus, 23°C (73°F)	3000	MPa	ISO 178
Flexural strength, 23°C (73°F)	128	MPa	ISO 178
Charpy unnotched impact strength, 23°C (73°F)	No Break		ISO 179 1eU

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PROPERTIES	TYPICAL VALUE	UNIT	TEST STANDARD
Charpy unnotched impact strength, -30°C (-22°F)	No Break		ISO 179 1eU
Charpy notched impact strength, 23°C (73°F)	5.5	kJ/m2	ISO 179 1eA
Charpy notched impact strength, -30°C (-22°F)	5	kJ/m2	ISO 179 1eA
Yield stress, 23°C (73°F) (A12)	88	MPa	ISO 527-1/-2

THERMAL PROPERTIES

PROPERTIES	TYPICAL VALUE	UNIT	TEST STANDARD
Glass transition temperature, 20°C/min (DSC)	158	°C	
Specific heat temperature, 23°C (73°F) (DSC)	1	J/g/K	
Heat deflection temperature, 1.8 MPa	139	°C	ISO 75-1/-2
Coefficient of linear thermal expansion, from -100°C (-148°F) to Tg (DMA Tension)	26.5	10E-6 / °K	
Limiting oxygen index (LOI), nominal thickness 3.2 mm	43	%	ISO 4589-1/-2
Burning behavior, nominal thickness 0.8 mm	V-0		IEC 60695-11-10

ELECTRICAL PROPERTIES

PROPERTIES	TYPICAL VALUE*	UNIT	TEST STANDARD
Dielectric strength (100µm thickness)	84	kV/mm	IEC 60243-1
Relative permittivity, 23°C (73,4°F) (1MHz)	3		IEC 62631-2-1
Surface resistivity, 23°C (73,4°F)	1E+17	ohm/sq	ASTM D257
Volumic (transversal) resistivity, 23°C (73,4°F)	1E+15	ohm*m	ASTM D257

OTHER PROPERTIES

PROPERTIES	TYPICAL VALUE	UNIT	TEST STANDARD
Density, 23°C (73°F)	1.27	g/cm ³	ISO 1183-1
Water absorption, at equilibrium at 23°C (73°F) / 50%RH	0.44	%	ISO 62
Water absorption, at equilibrium at 23°C (73°F) / Immersion	1.07	%	ISO 62
Water absorption, after 24h at 23°C (73°F) / 50%RH (2mm)	0.07	%	ISO 62
Water absorption, after 24h at 23°C (73°F) / Water	0.2	%	ISO 62

SHELF LIFE

Indefinite when stored properly (sealed bags, appropriate UV protection and temperature)

PROCESSING RECOMMANDATIONS

- Typical melt temperature (Min / Recommended / Max) - Injection Molding: Rear 300°C / Center 315°C / Front 320°C / Nozzle 330°C (570°F / 600°F / 610°F / 625°F)
- Typical mold temperature - Injection molding: 80-120°C (175-250°F), below Tg in any case
- Drying Conditions: 120°C (250°F) / 6-8 hours

SPECIAL CHARACTERISTICS

- Halogen Free Flame Retardant (HFFR)

KEPSTAN® 6002

REGIONAL AVAILABILITY

World

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