



Technical Data – 6000 Series

Product description

KEPSTAN™ is a high performance thermoplastic material, based on *PolyEtherKetoneKetone* (PEKK) highly stable chemical backbone. KEPSTAN™ is a unique member of the PAEK family that incorporates distinctive structural features that allow for exceptional possibilities in the control of crystallinity. These features include a low Ether/Ketone ratio and a copolymer structure incorporating *Terephthalic* and *Isophthalic* moieties.

The 6000 Series represents 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 glassy or semi crystalline structures, depending on processing technologies and cooling conditions.

KEPSTAN™ 6000 Series includes a medium flow grade, KEPSTAN™ 6002, and a high flow grade, KEPSTAN™ 6003, both unfilled PEKK resins designed to meet the requirements of a broad range of processing technologies, including among others extrusion, calendaring, thermoforming, injection molding, fiber impregnation, rotomolding, powder coating, bonding and welding.

KEPSTAN™ is available in pellet form as well as in powder form with different particle sizes. Standard packaging includes 20 kg boxes for pellets and 10 kg boxes for powders.

Material properties

	Condition	Test method	Unit	Typical Value	
Grades				6002	6003
Flow level				Medium	High

General

Density	23°C	ISO 1183	g/cm ³	1.27	
Color	-	-	-	Amber	
Water absorption	23°C, RH50%, equilibrium	ISO 62	%	0.16	
	23°C, RH50%, 24 h, 2 mm		%	0.03	
	23°C, immersion, equilibrium		%	0.6	
	23°C, immersion, 24 h, 2 mm		%	0.2	
Melt volume flow rate	380°C / 5 kg	ISO 1133	cm ³ /10min	35	(70)
	380°C / 1 kg		cm ³ /10min	(6)	12

Thermal

Melting point	20°C/min, 2 nd heating	DSC	°C	n/a	
Melting point	After cooling below 0.5°C/min		°C	300 to 305	
Glass transition	20°C/min		°C	160	
Specific heat capacity	23°C		J/g/K	1.0	
Heat deflection temperature	1.8 MPa	ISO 75f	°C	139	
	0.45 MPa		°C	n/a	
Coefficient of thermal expansion	Average, -100°C to Tg	DMA, tension	µm/m/K	26.5	

Mechanical

Tensile modulus	23°C, 1 mm/min	ISO 527-1BA	GPa	2.9	
Tensile strength (yield point)			MPa	88	
Elongation at yield	23°C, 25 mm/min	ISO 527-1BA	%	5.4	
Elongation at break			%	> 80	
Tensile strength (yield point) at HT	125°C, 25 mm/min	ISO 527-1BA	MPa	53	
Elongation at break at HT			%	> 100	
Compression modulus	23°C, 1 mm/min	ISO 604	GPa	3.0	
Compression strength	23°C, 5 mm/min	ISO 604	MPa	108	
Flexural modulus	23°C	ISO 178-93	GPa	3.0	
Flexural strength (max)	23°C		MPa	128	
Charpy impact strength - Unnotched	23°C	ISO 179/1eU	kJ/m ²	NB	NB
	- 30°C		kJ/m ²	NB	NB
Charpy impact strength - Notched	23°C	ISO 179/1eA	kJ/m ²	5.5	5.0
	- 30°C		kJ/m ²	5.0	4.5



NB = No Break

All data measured on injection molded specimens, polymer in glassy state.

Fire

Flammability rating	-	UL 94	-	V-0 @ 0.8 mm
Limiting Oxygen Index	1.6 mm	ISO 4589-2	%O ₂	38

Electrical

Dielectric strength	100 μm thickness	IEC 60243-1	kV/mm	84
Relative permittivity	23°C – 1 MHz	IEC 60250	-	2.5
Loss tangent	23°C – 1 kHz	IEC 60250	-	0.007
Volume resistivity	23°C	ASTM D257	Ohm.cm	10 ¹⁶
Surface resistivity	23°C	ASTM D257	Ohm	10 ¹⁶

Recommended processing conditions

Drying temperature and time	120°C during 6 to 8 hours
Processing temperature	320 – 360°C
Temperature settings - Injection	Rear 300°C / Centre 315°C / Front 320°C / Nozzle 330°C
Mold temperature	80 to 120°C, below Tg in any case
Temperature settings - Extrusion	Zones 1/2/3/4 : 290°C/ 320°C/ 330°C / 320°C/ Die : 320°C

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