

TECHNICAL DATA SHEET

KEPSTAN® 8003

POLYETHERKETONEKETONE PELLET OR FLAKE

KEPSTAN® is a high performance thermoplastic material, based on PolyEtherKetoneKetone (PEKK) highly stable chemical backbone. Its semi crystalline structure in solid state offers an outstanding combination of mechanical and thermal strength together with chemical and fire resistance.

The 8000 Series offers the highest glass transition temperature and the highest degree of crystallinity, leading to the best tensile and compression strengths among both KEPSTAN® copolymers family and PAEK resins.

KEPSTAN® 8000 Series includes a very low flow grade, KEPSTAN® 8001, a medium flow grade, KEPSTAN® 8002, and a high flow grade KEPSTAN® 8003, all unfilled pure PEKK resins designed to meet the requirements of a broad range of melt processing technologies, including among others extrusion of stock shapes, tubes, films, extrusion compression, compression molding, compounding, injection molding of thick or complex and thin-walled parts.

KEPSTAN® is available in pellet form and as well as in flake. Standard packaging includes 20 kg boxes for pellets and 40 kg drums for flakes.

TYPE

PEKK

MAIN APPLICATIONS

- Oil And Gas - Others
- Industry - Composites
- Compounding

DELIVERY FORM

- Flakes
- Pellets

TRANSFORMATION PROCESSES

- Film Extrusion
- Injection Molding

RHEOLOGICAL PROPERTIES

PROPERTIES	VALUE	UNIT	TEST STANDARD
Melt volume flow rate (MVR), 380°C / 1 kg (716°F / 2.2 lb)	12	cm³/10min	ISO 1133

MECHANICAL PROPERTIES

PROPERTIES	VALUE	UNIT	TEST STANDARD
Tensile modulus, 23°C (73°F), 1 mm/min(A12)	4100	MPa	ISO 527-1/-2
Yield stress, 23°C (73°F), 25 mm/min(A12)	100 - 120	MPa	ISO 527-1/-2
Yield strain, 23°C (73°F), 25 mm/min(A12)	n/a	%	ISO 527-1/-2
Nominal strain at break, 23°C (73°F), 25 mm/min(A12)	3 - 10	%	ISO 527-1/-2
Flexural modulus, 23°C (73°F)	4100	MPa	ISO 178
Flexural strength, 23°C (73°F)	187	MPa	ISO 178
Charpy unnotched impact strength, 23°C (73°F)	51	kJ/m2	ISO 179 1eU
Charpy unnotched impact strength, -30°C (-22°F)	51	kJ/m2	ISO 179 1eU
Charpy notched impact strength, 23°C (73°F)	5	kJ/m2	ISO 179 1eA
Charpy notched impact strength, -30°C (-22°F)	5	kJ/m2	ISO 179 1eA

THERMAL PROPERTIES

PROPERTIES	VALUE	UNIT	TEST STANDARD
Melting temperature, 20°C/min(DSC, 2nd Heating)	360	°C	
Glass transition temperature, 20°C/min(DSC)	165	°C	
Specific heat temperature, 23°C (73°F)(DSC)	1.02	J/g/K	
Heat deflection temperature, 1.8 MPa	164	°C	ISO 75-1/-2
Heat deflection temperature, 0.45 MPa	282	°C	ISO 75-1/-2
Coefficient of linear thermal expansion, from -100°C (-148°F) to Tg(DMA, tension)	23	10E-6 / °K	
Coefficient of linear thermal expansion, Tg to 300°C (572°F)(DMA, tension)	225	10E-6 / °K	
Oxygen index(3.2mm)	38	%	ISO 4589-1/-2

ELECTRICAL PROPERTIES

PROPERTIES	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
Volumic (transversal) resistivity, 23°C (73,4°F)	100000000000000000	ohm.cm	ASTM D257
Surface resistivity, 23°C (73,4°F)	100000000000000000	ohm/sq	ASTM D257

OTHER PROPERTIES

PROPERTIES	VALUE	UNIT	TEST STANDARD
Moisture absorption, At equilibrium at 23°C (73°F) / 50%HR	0.4	%	ISO 62
Moisture absorption, After 24h at 23°C (73°F)/50%RH	0.05	%	ISO 62
Water absorption, 23°C (73°F), immersion, equilibrium	0.7	%	ISO 62
Water absorption, 23°C (73°F)(After 24h, immersion, 2mm)	0.11	%	ISO 62
Apparent density, 23°C (73°F)	1.29	g/cm³	

PACKAGING

Available packaging:

- 20 kg / 44 lb boxes

SHELF LIFE

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

PROCESSING CONDITIONS:

- Typical melt temperature (Min / Recommended / Max) - Injection Molding:Rear 350°C / Center 375°C / Front 375°C / Nozzle 385°C (660°F / 710°F / 710°F / 725°F)
- Typical mold temperature - Injection molding:220-240°C (430-465°F), to facilitate skin & core cristallization
- Drying time and temperature:150°C (300°F) / 3-4 hours

SPECIAL CHARACTERISTICS

- Halogen Free Flame Retardant (HFFR)

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