

## VESTAKEEP® Polymers for Filaments

### PEEK—Polyether Ether Ketone Compounds

Evonik has further expanded its technological lead in the high-performance polymers sector with VESTAKEEP® polyether ether ketone (PEEK) compounds. VESTAKEEP® compounds are suitable for applications with extremely high mechanical, thermal, and chemical requirements.

**VESTAKEEP® compounds are particularly characterized by the following material properties:**

- very high heat resistance
- high rigidity
- low water absorption and therefore
- high dimensional stability
- high hardness
- good strength
- excellent sliding friction behavior
- minimal abrasion
- good electrical characteristics
- excellent chemical resistance
- excellent hydrolytic stability
- good processability
- low tendency to form stress cracks

**Monofilaments and fibers made of VESTAKEEP® meet**

- very high toughness
- excellent abrasion resistance and
- high temperature resistance.

### Temperature Resistance

Monofilaments made of VESTAKEEP®, as are interwoven in fabric, can be used in special conveyor belts for drying or heat-treating products conveyed continuously on their surfaces. Other popular applications of PEEK include nonwovens manufacture, textile drying, food processing, and powder conveying.



### High pressure dewatering

PEEK monofilaments interwoven into multiple layers hold up admirably in pressure-dewatering processes for chemical slurries or heat-compacting processes for fiberboard. Other uses include air (hot gas) filtration, or as a covering or high-temperature overlay on a conventional felt surface where burning through friction is to be avoided.

### Protect electrical wiring

VESTAKEEP® braiding protects electric cables against abrasive damage, particularly at extreme temperatures and in specific areas such as automotive and nuclear installations. VESTAKEEP® monofilaments protect cables and cable bundles against mechanical stresses, even at high temperatures.

### Good recovery

VESTAKEEP® bristles are resilient and functional in hot or chemically aggressive environments, maintaining their rigidity better than other materials, particularly in the 100–150°C range.

## Important properties of VESTAKEEP® for filaments

Property	Test method	Unit	2000G, 2000G black*	L4000G
Melt volume-flow rate (MVR) 380 °C/5kg	ISO 1133	cm <sup>3</sup> /10 min	70	11
Melting range DSC 2 <sup>nd</sup> heating	ISO 11357	°C	approx. 340	approx. 340
Water absorption saturation 23°C	ISO 62	%	0.5	0.5
VICAT softening temperature Method A 10 N Method B 50 N	ISO 306	°C	335 310	335 305
Tensile test Stress at yield Strain at yield Strain at break	ISO 527	MPa % %	100 5 30	96 5 30
Tensile modulus	ISO 527	MPa	3700	3500
CHARPY 23 °C impact strength -30 °C	ISO 179/1eU	kJ/m <sup>2</sup> kJ/m <sup>2</sup>	N N	N N
CHARPY notched 23 °C impact strength -30 °C	ISO 179/1eA	kJ/m <sup>2</sup> kJ/m <sup>2</sup>	6 C 7 C	7 C 6 C

N = no break

C = complete break

\* Pigmentation can affect values.

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