

Product Information

# VESTAKEEP® 4500 G High Purity

## HIGH VISCOSITY, UNREINFORCED POLYETHER ETHER KETONE



**VESTAKEEP® 4500 G High Purity** is a high-viscosity, unreinforced polyether ether ketone for injection molding and extrusion. The product is refined by Evonik's special filtration technology.

The semi-crystalline polymer features superior thermal and chemical resistance. Parts made from VESTAKEEP® 4500 G High Purity are of low flammability.

VESTAKEEP® 4500 G High Purity can be processed by common machines for thermoplastics.

We recommend a melt temperature between 360°C and 380°C during the injection molding process. The mold temperature should be within a range of 160°C to 200°C, preferably 180°C.

The use of colorants may affect property values.

The material is supplied as granules in boxes with moisture barrier polyethylene liners.

Inside the original and undamaged packaging, the product has a shelf life of at least 2 years when stored in dry rooms at temperatures not exceeding 30 °C.

### Key Features

#### Industrial Sector

Industry and Engineering

#### Processing

Injection molding, Extrusion

#### Delivery form

Pellets, Granules

#### Optics

Opaque

#### Resistance to

Heat (thermal stability), Fire / burn

#### Electrical

Insulating

#### Additives

Unfilled

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	3630 / -	MPa	ISO 527
Tensile strength	96 / -	MPa	ISO 527
Yield stress	96 / -	MPa	ISO 527
Yield strain	5 / -	%	ISO 527
Stress at break	79 / -	MPa	ISO 527
Nominal strain at break, tB	28 / -	%	ISO 527
Charpy impact strength, +23°C	N / -	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30°C	N / -	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, +23°C	7 / -	kJ/m <sup>2</sup>	ISO 179/1eA
Type of failure	C / -	-	-
Charpy notched impact strength, -30°C	6 / -	kJ/m <sup>2</sup>	ISO 179/1eA
Type of failure	C / -	-	-

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	339 / *	°C	ISO 11357-1/-3
Glass transition temperature, DSC	151 / *	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	150 / *	°C	ISO 75-1/-2

Physical properties	dry / cond	Unit	Test Standard
Density	1300 / -	kg/m <sup>3</sup>	ISO 1183

Rheological properties	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	9.5 / *	cm <sup>3</sup> /10min	ISO 1133
Temperature	380 / *	°C	-
Load	5 / *	kg	-

**Characteristics**

**Applications**

General purpose, Multifilament, Tube and hose

**Color**

Natural color

**Processing**

Film extrusion, Wire/Cable extrusion

**Delivery form**

Cylindrical pellets

**Special Characteristics**

PTFE-free, Semi-crystalline, High viscosity

**Chemical Resistance**

Solvent resistance, General chemical resistance

<b>Processing Recommendation Injection Molding</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Pre-drying - Temperature	<b>150 - 160</b>	°C	-
Pre-drying - Time	<b>4 - 6</b>	h	-
Melt temperature	<b>380 - 420</b>	°C	-
Mold temperature	<b>160 - 200</b>	°C	-
Feed temperature	<b>70 - 100</b>	°C	-