









## Kormax PEEK

## Kormax Material Document

Kormax PEEK [technical name Polyether ether ketone] is a high performance thermoplastic. Kormax PEEK has excellent chemical resistance and at high temperatures retains most of its physical properties. Kormax PEEK natural has FDA approval for direct contact with food and has low flammability [V0] rating. Kormax PEEK natural is a light brown colour, and compared to other plastics materials is quite hard. Care needs to be taken over the material running in contact with Kormax PEEK, and ideally should be a hardened steel material to avoid wear on the mating surface. Kormax PEEK is available by request in other grades, such as 30% Glass filler, 30% Carbon fiber, and bearing grade.

	<b>Max Continuous Operating Temperature</b>	<b>250°C</b>		<b>Density</b>	<b>1.31</b>
	<b>Tensile Strength</b>	<b>28 MPa</b>		<b>Outside in Sunlight</b>	<b>No</b>
	<b>Suitability for Food Contact</b>	<b>Yes</b>		<b>Moisture Absorption</b>	<b>0.2%</b>
	<b>Coefficient of Friction to Steel</b>	<b>Excellent</b>		<b>Machinability</b>	<b>Moderate</b>

### Physical Properties

	Test Method	Unit	Value
Specific gravity ( $\rho$ )	ISO 1183	g/cm <sup>3</sup>	1.32
Water absorption <sup>9</sup>	ISO 62	%	0.4
Humidity absorption <sup>9</sup>	ISO 62	%	0.07
Maximum permissible service temp. <sup>9</sup>	UL746B	°C	260
Lower permissible service temp. <sup>9</sup>	UL746B	°C	-40

### Mechanical Properties

	Test Method	Unit	Value
Tensile strength at yield ( $\sigma_s$ )	ISO 527	MPa	115
Elongation at yield ( $\xi_s$ )	ISO 527	%	7
Tensile strength at break ( $\sigma_R$ )	ISO 527	MPa	67
Elongation at break ( $\xi_s$ )	ISO 527	%	16
Impact strength ( $a_n$ ) <sup>9</sup>	ISO 179	kJ/m <sup>2</sup>	n.b.
Notch impact strength ( $a_k$ ) <sup>9</sup>	ISO 179	kJ/m <sup>2</sup>	4
Ball indentation ( $H_k$ )/Rockwell hardness <sup>9</sup>	ISO 2039	MPa	250/M 99
Shore-D	ISO 868	-	90
Flexural strength ( $\sigma_{B3,5\%}$ ) <sup>9</sup>	ISO 178	MPa	170
Modulus of elasticity ( $E_t$ )	ISO 527	MPa	4210

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Thermal Properties <sup>9</sup>		Test Method	Unit	Value
Vicat-softening point	VST/B/50	ISO 306	°C	250
	VST/A/50	ISO 306	°C	-
Heat deflection temperature	HDT/B	ISO 75	°C	240
	HDT/A	ISO 75	°C	158
Coef. of linear thermal expansion ( $\alpha$ )		ISO 11359	K <sup>-1</sup> * 10 <sup>-4</sup>	0.47
Thermal conductivity at 20°C ( $\lambda$ )		ISO 22007-4	W/(m * K)	0.25
Glass transition temperature (T <sub>g</sub> )		ISO 3146	°C	143
Melting temperature (T <sub>m</sub> )		ISO 3146	°C	340

Electrical Properties		Test Method	Unit	Value
Volume resistivity ( $\rho_D$ ) <sup>8</sup>		IEC 60093	$\Omega$ *cm	$\geq 10^{13}$
Surface resistivity (R <sub>o</sub> ) <sup>8</sup>		IEC 60093	$\Omega$	$\geq 10^{13}$
Dielectric constant at 1MHz ( $\epsilon_r$ ) <sup>9</sup>		IEC 60250	-	3.2
Dielectric loss factor at 1 MHz (tan $\delta$ ) <sup>9</sup>		IEC 60250	-	0.003
Dielectric strength <sup>9</sup>		IEC 60243-1	kV/mm	16
Tracking resistance <sup>9</sup>		IEC 60112	V	CTI 125

Additional Data		Test Method	Unit	Value
Bondability		-	-	+
Physiological indifference <sup>5</sup> according		EEC	-	+
		FDA	-	+
Flammability <sup>8 9</sup>		UL 94	-	V-0
Limiting Oxygen Index (LOI) <sup>8 9</sup>		ASTM D2863	%	35
UV stabilisation <sup>6 8 9</sup>		-	-	o

<sup>1</sup> The physical data contained in this table are typical values and reflect the current state of our knowledge. The data are arithmetic average values which are tested by test specimens made out of rods ( $\varnothing$  40-60 mm). These have to be understood as guidelines, and shall not be used for specification purposes for finished parts. Missing data are completed by data of the raw materials.

<sup>5</sup> Physiological indifferences are valid for nature coloured materials on the raw material side. There are also approvals for our semi-finished products available or in preparation. Please check this separately with us. <sup>6</sup> Valid for nature coloured materials. An additional UV protection can be taken over by special pigments e.g. carbon black. <sup>7</sup> Test results without UL registration <sup>8</sup> Data are only valid for natural colours <sup>9</sup> Data taken from raw material \*Self-assessment without test certificate \* Own classification without official test report n.b. = No break + = yes o = Limited - = no / no data available

Notes for the user:

The technical data given in this sheet correspond to our current state of knowledge and should not be construed as an agreement or guarantee regarding certain properties of our products. The decision on the suitability of a particular material for a specific application is up to the user. We reserve the right to modify the given data. Errors of the given data are reserved. The document was produced by machine and is valid without signature.