

## Application purpose and characteristics

Chemical engineering, mechanical engineering, electrical engineering, aerospace engineering, automotive industry, food technology, semiconductor technology, vacuum technology, textile industry

High heat deflection temperature, good machinability, inherently flame resistant, high-energy radiation resistant, good "stick-slip" properties, very high chemical resistance, high creep strength, resistant against hydrolyse and superheated steam

Material name, short description	PEEK
Material name, based on technical standards	Polyetheretherketone
Density	1.31 g/cm <sup>3</sup>
Color	natural (brownish grey)
Compound code	PEEK 00.002-00

## Mechanical properties

Modulus of elasticity & tension 1	4200 N/mm <sup>2</sup> DIN EN ISO 527-2 1 mm/min
Tensile strength	116 N/mm <sup>2</sup> DIN EN ISO 527-2 50 mm/min
Yield stress	116 N/mm <sup>2</sup> DIN EN ISO 527-2 50 mm/min
Elongation at break	15 % DIN EN ISO 527-2 50 mm/min
Elongation at yield	5 % DIN EN ISO 527-2 50 mm/min
Flexural modulus of elasticity	4200 N/mm <sup>2</sup> DIN EN ISO 178 2 mm/min, 10 N
Modulus of pressure	3400 N/mm <sup>2</sup> 5 mm/min, 10 N
Bending strength 1	175 N/mm <sup>2</sup> DIN EN ISO 178 2 mm/min, 10 N
Compressive strength 1	23 N/mm <sup>2</sup> EN ISO 604 at 1% deformation (5 mm/min, 10 N)
Compressive strength 2	43 N/mm <sup>2</sup> EN ISO 604 bei 2% zul. Verformung (5 mm/min, 10 N)
Ball indentation hardness	253 N/mm <sup>2</sup> ISO 2039-1
Impact strength	no break DIN EN ISO 179-1eU max. 7.5 J
Notch impact strength	4.00 kJ/m <sup>2</sup> DIN EN ISO 179-1eA Charpy, max. 7.5J

## Thermal attributes

Max. operating temperature long term	260 °C
Max. operating temperature short term	300 °C
Coefficient of linear thermal expansion 1	5 * 10 <sup>-5</sup> K <sup>-1</sup> DIN EN ISO 11359-1,-2 23-60°C, lengthwise
Coefficient of linear thermal expansion 2	5 * 10 <sup>-5</sup> K <sup>-1</sup> DIN EN ISO 11359-1,-2 23-100°C, lengthwise
Coefficient of linear thermal expansion 3	7 * 10 <sup>-5</sup> K <sup>-1</sup> DIN EN ISO 11359-1,-2 100-150°C, lengthwise
Crystalline melting point	341 °C DIN 53765
Glass transition temperature	150 °C DIN 53765
Heat deflection temperature 1	162 °C ISO-R 75 Method A HDT methode A
Specific heat capacity	1.1 J/(g·K) ISO 22007-4 2008
Thermal conductivity	0.27 W/(m·K) ISO 22007-4 2008

## Electrical attributes

Comparative tracking index	125 V DIN EN 60112 Platinum electrode, 23 °C, 50 % rel. LF, solution A
Dielectric strength 1	73 kV/mm ISO 60243-1 23 °C, 50 % rel. LF
Surface resistivity	10 <sup>15</sup> Ω DIN IEC 60093 Silver electrode, 23 °C, 12 % rel. LF
Volume resistivity	10 <sup>15</sup> Ω*cm DIN IEC 60093 Silver electrode, 23 °C, 12 % rel. LF

In compliance with **RoHS** and **REACH** directives.

This information is based on our available data. These values are measured on standard test specimens and are within the normal tolerance range of material properties and do not represent guaranteed property values. Therefore they shall not be used for specification purposes. The customer is solely responsible for quality and suitability of material for his application. He has to test usage and processing prior to use. Angst+Pfister makes no guarantees for the suitability of the material for any given application and assumes no obligation or liability in connection with the information provided above.

## Other attributes

Water absorption	0.02 % DIN EN ISO 62 24h (23°C)
Water absorption 2	0.03 % DIN EN ISO 62 96h (23°C)

## Approvals / Compliance

Food & Beverage	3-A Sanitary Standard No. 20-27
	FDA CFR 21 - 177.2415 "Poly(aryletherketone) resins"
	EC No. 1935/2004 incl. last amendments ....
	Regulation EU 10/2011
Specific substance statements	ADI free (free of Animal Derived Ingredients) resp. TSE/BSE related substances



EC No.1935:2004



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