

## Material Grade

### **ARKPEEK-1000:** 100%PEEK

Produced from unfilled virgin polyetheretherketone resin and It offers excellent thermal, chemical, and hydrolysis resistance as well as excellent resistance to abrasion and dynamic fatigue.

### **ARKPEEK-CF30:** 30% Carbon Fiber + 70% PEEK

Carbon fiber reinforcement lends the material a high level of rigidity and creep strength, high mechanical strength and heat conductivity values.

### **ARKPEEK-GF30:** 30% Glass fiber + 70% PEEK

Glass filled PEEK exhibits increased mechanical strength and high rigidity. improved creep strength and dimensional stability are achieved by this glass filled PEEK. These properties make this material suitable for use in parts which are exposed to high static loads over long periods in high temperature conditions.

### **ARKPEEK-MOD:** 10% Carbon Fiber + 10% PTFE +10% Graphite

high performance engineering plastic with product characteristics including excellent sliding and abrasion & wear resistance, high mechanical strength and high dimensional stability. The long term service temperature range of PEEK Rod is from -30°C to 250°C and has a short term maximum service temperature of 310°C.

## PEEKChina Material Properties

Mechanical Behavior						
Item	Test Standard or Instrument	Unit	ARKPEEK-1000	ARKPEEK-GF30	ARKPEEK-CF30	ARKPEEK-MOD
			100%PEEK	PEEK+30%Glass Fiber	PEEK+30%Carbon Fiber	PEEK+10%Carbon Fiber+10%Graphite+10%PTFE)
Tensile strength(23℃)	ISO527	MPa	90	155	210	134
Bending strength(23℃)	ISO 178	MPa	150	212	298	186
Compressive strength(23℃)	ISO 604	MPa	118	215	240	150
Izod impact strength ( no gap)	ISO 180/IU	kJ/m <sup>2</sup>	No Break	51	40	32

## Thermal performance

Item	Test Standard or Instrument	Unit	ARKPEEK-1000	ARKPEEK-GF30	ARKPEEK-CF30	ARKPEEK-MOD
			100%PEEK	PEEK+30%Glass Fiber	PEEK+30%Carbon Fiber	PEEK+10%Carbon Fiber+10%Graphite+10%PTFE)
Melting point	ISO 11357	°C	343	343	343	343
Distortion temperature	ISO 75-f	°C	163	315	315	293
Continuous using temperature	UL 74685	°C	260	260	260	260
Coefficient of thermal expansion	ASTM D696	10 -5°C	4.7	2.2	1.5	2.2
Flammable level	UL 94	V-0@mm	1.5	1.5	1.5	0.75

## Electrical performance

Item	Test Standard or Instrument	Unit	ARKPEEK-1000	ARKPEEK-GF30	ARKPEEK-CF30	ARKPEEK-MOD
			100%PEEK	PEEK+30%Glass Fiber	PEEK+30%Carbon Fiber	PEEK+10%Carbon Fiber+10%Graphite+10%PTFE))
Dielectric strength	IEC 60243-1	kV/mm	18	19		
Dielectric constant	IEC60250	—	3.2	3.3		
Surface resistivity	IEC 90093	Ω	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>5</sup>	10 <sup>6</sup>

## Other performance

Item	Test Standard or Instrument	Unit	ARKPEEK-1000	ARKPEEK-GF30	ARKPEEK-CF30	ARKPEEK-MOD
			100%PEEK	PEEK+30%Glass Fiber	PEEK+30%Carbon Fiber	PEEK+30%(Carbon Fiber+Graphite+PTFE)
Density	ISO 1183	g/cm <sup>3</sup>	1.3±0.02	1.5±0.02	1.4±0.02	1.43±0.02
Rockwell hardness	ISO 2039	HRR	118	119	121	108
Friction coefficient	ASTM D3702	—	0.30-0.38	0.38-0.46	0.28	0.18
Water Abs. (25°C.24Hrs)	ISO 62	%	0.15	0.11	0.06	0.06
Mould shrinking percentage	3mm,170°C, Flow direction	%	1.2	0.4	0.1	0.3