



## Kimya PEKK-A 3D Filament (KEPSTAN®)

The Kimya **PEKK-A** 3D filament belongs to the polyaryletherketone family. Polyetherketoneketone (**PEKK**) is a thermoplastic polymer. PEKK-A is the amorphous form of PEKK, providing ease of printing. This is a material that boasts good mechanical properties and is resistant to high temperatures (< 150°C). Produced using KEPSTAN® Arkema, the Kimya PEKK-A 3D filament has been designed for technical applications. It can come into contact with hydrocarbons and fluids, enabling it to be used in multiple business sectors: aerospace, automotive, railways, etc. It has the following properties:

- Temperature resistance
- Flame retardant – eligible to **UL94 V0**
- Complies with the **RoHS** and **REACH standard**

2-year KIMYA warranty.

### FILAMENT PROPERTIES

PROPERTIES	TEST METHODS	VALUES
Diameter	INS-6712	1.75 ± 0.1 mm
Density	ISO 1183-1	1.261 g/cm <sup>3</sup>
Melt flow index (MFI)	ISO 1133-1 (@380°C – 5 kg)	37 - 47 g/10min
Glass transition temperature (T <sub>g</sub> )	ISO 11357-1	159 °C
Melting Temperature (T <sub>m</sub> )	ISO 11357-1	308 °C

### PRINT PARAMETERS AND SPECIMENS DIMENSIONS

PRINTING DIRECTION	XY	ZX
Printing Speed	25 mm/s	20 mm/s
Infill	100% - rectilinear	100% - rectilinear
Infill Angle	0°/0°	45°/-45°
Nozzle Temperature	400°C	385°C
Bed T°	155°C	155°C
Chamber T°	155°C	155°C

## PRINTED SPECIMENS PROPERTIES

	PROPERTIES	TEST METHODS	XY	ZX
<b>THERMAL PROPERTIES</b>	Maximum use T°	-	150 °C	150 °C
	Thermal conductivity	ASTM E1530-11	0.21 W/mK	
	Heat distortion temperature (HDT) (0,45Mpa)	ISO 75	154 °C	
	Heat distortion temperature (HDT) (1,8Mpa)	ISO 75	150 °C	
	Coefficient of thermal expansion	ISO 11359-2/ASTM E228 (-30°C to 100°C)	53 µm/m/K	50 µm/m/K
<b>ELECTRICAL PROPERTIES</b>	Dielectric strength	IEC 60243-1 (100µm)	84 KV/mm	
	Relative permittivity	IEC 60250 (1 MHz)	2.5	
	Loss tangent	IEC 60250 (1 kHz)	0.007	
	Surface resistivity	ASTM D257	10 <sup>16</sup> Ohms/m <sup>2</sup>	
	Volume resistivity	ASTM D257	10 <sup>16</sup> Ohms/cm	
	CTI (Comparative Tracking Index)	IEC 60112:2009	150 V	200 V
<b>OUTGASSING</b>	Total Mass Loss (TML)	ASTM E595	0.27 %	0.27 %
	Collected Volatile Condensable Material (CVCM)	ASTM E 595	< 0.01 %	< 0.01 %
	Water Vapor Recovered (WVR)	ASTM E 595	0.29 %	0.29 %
<b>MECHANICAL PROPERTIES</b>	Tensile modulus	ISO 527-2/5A/50	2,972 MPa	2,700 MPa
	Tensile Strength	ISO 527-2/5A/50	92.1 MPa	76.9 MPa
	Tensile strain at strength	ISO 527-2/5A/50	5.8 %	4 %
	Tensile Stress at Break	ISO 527-2/5A/50	70.7 MPa	76.9 MPa
	Tensile strain at break (type A)	ISO 527-2/5A/50	5.6 %	4 %
	Tensile strain at break (type B et C)	ISO 527-2/5A/50	6.6 %	
	Flexural modulus	ISO 178	2,638.3 MPa	2,228 MPa
	Flexural stress at conventional deflection (3,5% strain)*	ISO 178	88.2 MPa	79.5 MPa
	Compressive Modulus	ISO 604	3,000 MPa	
	Compressive Yield strength	ISO 604	150 MPa	
	Strain at yield	ISO 604	7 %	
	Charpy impact resistance	ISO 179-1/1eA	15.529 kJ/m <sup>2</sup>	3.972 kJ/m <sup>2</sup>
	Shore Hardness	ISO 868	79.9	
<b>Note 1</b>	*According to ISO 178, end of the test at 5% deformation even if there is no specimen break.			
<b>Note 2</b>	The data should be considered as indicative values - Properties can be influenced by production conditions.			

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