

PEEK Data Sheet 물성표

HIGH PERFORMANCE MATERIAL



PROPERTIES	Test methods	Units	PEEK Natural	PEEK HPV	PEEK GF30	PEEK CA30
Color - 색상	-	-	Grey / Black	Black	Grey	Black
Density - 비중	ISO 1183-1	g/cm ³	1.31	1.45	1.51	1.40
Water absorption: - 물흡수율						
- after 24/96 h immersion in water of 23 °C	ISO 62	mg	5 / 10	4 / 9	5 / 10	4 / 9
	ISO 62	%	0.06 / 0.12	0.05 / 0.11	0.05 / 0.10	0.05 / 0.11
- at saturation in air of 23 °C / 50 % RH	-	%	0.20	0.16	0.16	0.16
- at saturation in water of 23°C	-	%	0.45	0.35	0.35	0.35
Thermal Properties						
Melting temperature (DSC, 10 °C/min) - 녹는점	ISO 11357-1/-3	°C	340	340	340	340
Glass transition temperature (DSC, 20 °C/min) - 유리전이온도	ISO 11357-1/-2	°C	-	-	-	-
Thermal conductivity at 23 °C - 열전도도	-	W/(K.m)	0.25	0.78	0.43	0.92
Coefficient of linear thermal expansion - 열팽창계수						
- average value between 23 and 100 °C	-	m/(m.K)	50 x 10 ⁻⁶	35 x 10 ⁻⁶	30 x 10 ⁻⁶	25 x 10 ⁻⁶
- average value between 23 and 150 °C	-	m/(m.K)	55 x 10 ⁻⁶	40 x 10 ⁻⁶	30 x 10 ⁻⁶	25 x 10 ⁻⁶
- average value above 150 °C	-	m/(m.K)	130 x 10 ⁻⁶	85 x 10 ⁻⁶	65 x 10 ⁻⁶	55 x 10 ⁻⁶
Temperature of deflection under load - 하중변형온도						
- method A: 1.8 MPa	ISO 75-1/-2	°C	160	195	230	260
Max. allowable service temperature in air - 최대사용온도						
- for short periods (4)	-	°C	310	310	310	310
- continuously : for min. 20,000 h	-	°C	250	250	250	250
Min. service temperature - 최저사용온도	-	°C	-50	-20	-20	-20
Flammability - 타는 정도						
- "Oxygen Index"	ISO 4589-1/-2	%	35	43	40	40
- according to UL 94 (1.5 / 3 mm thickness)	-	-	V-0 / V-0	V-0 / V-0	V-0 / V-0	V-0 / V-0
Mechanical Properties at 23 °C						
Tension test - 인장 테스트						
- tensile stress at yield / tensile stress at break	ISO 527-1/-2	MPa	115 / -	NYP / 78	80 / -	NYP / 144
- tensile strength	ISO 527-1/-2	MPa	115	78	80	144
- tensile strain at yield	ISO 527-1/-2	%	5	NYP	3.5	NYP
- tensile strain at break	ISO 527-1/-2	%	17	3	4.5	4
- tensile modulus of elasticity	ISO 527-1/-2	MPa	4300	5900	7000	9200
Compression test - 압축 테스트						
- compressive stress at 1 / 2 / 5 % nominal strain	ISO 604	MPa	38 / 75 / 140	46 / 80 / 120	54 / 103 / 155	69 / 125 / 170
Charpy impact strength - unnotched - 충격강도	ISO 179-1/1eU	kJ/m ²	no break	25	25	50
Charpy impact strength - notched - 충격강도	ISO 179-1/1eA	kJ/m ²	3.5	3	3	5
Ball indentation hardness - 경도	ISO 2039-1	N/mm ²	210	215	250	310
Rockwell hardness - 경도	ISO 2039-2	-	M 105	M 85	M 100	M 102
Electrical Properties at 23 °C						
Electric strength - 절연파괴 강도	IEC 60243-1	kV/mm	24	-	24	-
Volume resistivity - 체적저항	IEC 60093	Ohm.cm	> 10 ¹⁴	-	> 10 ¹⁴	< 10 ⁵
Surface resistivity - 표면저항	ANSI/ESD STM 11.11	Ohm/sq.	> 10 ¹³	-	> 10 ¹³	< 10 ⁵
Relative permittivity ε _r : - at 100 Hz - 비투전율	IEC 60250	-	3.2	-	3.2	-
Relative permittivity ε _r : - at 1 MHz	IEC 60250	-	3.2	-	3.6	-
Dielectric dissipation factor tan δ: - at 100 Hz - 유전손실율	IEC 60250	-	0.001	-	0.001	-
Dielectric dissipation factor tan δ: - at 1 MHz	IEC 60250	-	0.002	-	0.002	-
Comparative tracking index (CTI) - 비교추적계수	IEC 60112	-	150	-	175	-