

# PAI Data Sheet 물성표

PROPERTIES	Test methods	Units	PAI Natural	PAI GF30	PAI ESD
Color - 색상	-	-	Yellow	Black	Khaki grey
Density - 비중	ISO 1183-1	g/cm <sup>3</sup>	1.41	1.61	1.58
Water absorption: - 물흡수율					
- after 24/96 h immersion in water of 23 °C	ISO 62	mg	29 / 55	25 / 50	56 / 110
	ISO 62	%	0.35 / 0.67	0.26 / 0.52	0.60 / 1.18
- at saturation in air of 23 °C / 50 % RH	-	%	2.5	1.7	2.6
- at saturation in water of 23°C	-	%	4.4	3.2	4.6
<b>Thermal Properties</b>					
Melting temperature (DSC, 10 °C/min) - 녹는점	ISO 11357-1/-3	°C	NA	NA	NA
Glass transition temperature (DSC, 20 °C/min) - 유리전이온도	ISO 11357-1/-2	°C	280	280	280
Thermal conductivity at 23 °C - 열전도도	-	W/(K.m)	0.26	0.36	0.34
Coefficient of linear thermal expansion - 열팽창계수					
- average value between 23 and 100 °C	-	m/(m.K)	40 x 10 <sup>-6</sup>	35 x 10 <sup>-6</sup>	35 x 10 <sup>-6</sup>
- average value between 23 and 150 °C	-	m/(m.K)	40 x 10 <sup>-6</sup>	35 x 10 <sup>-6</sup>	35 x 10 <sup>-6</sup>
- average value above 150 °C	-	m/(m.K)	50 x 10 <sup>-6</sup>	40 x 10 <sup>-6</sup>	40 x 10 <sup>-6</sup>
Temperature of deflection under load - 하중변형온도					
- method A: 1.8 MPa	ISO 75-1/-2	°C	280	280	280
Max. allowable service temperature in air - 최대사용온도					
- for short periods (4)	-	°C	270	270	270
- continuously : for min. 20,000 h	-	°C	250	250	250
Min. service temperature - 최저사용온도	-	°C	-50	-20	-20
Flammability - 타는 정도					
- "Oxygen Index"	ISO 4589-1/-2	%	45	50	48
- according to UL 94 (1.5 / 3 mm thickness)	-	-	V-0 / V-0	V-0 / V-0	V-0 / V-0
<b>Mechanical Properties at 23 °C</b>					
Tension test - 인장 테스트					
- tensile stress at yield / tensile stress at break	ISO 527-1/-2	MPa	150 / -	NYP / 125	NYP / 83
- tensile strength	ISO 527-1/-2	MPa	150	125	83
- tensile strain at yield	ISO 527-1/-2	%	9	NYP	NYP
- tensile strain at break	ISO 527-1/-2	%	20	3	3
- tensile modulus of elasticity	ISO 527-1/-2	MPa	4200	6400	5500
Compression test - 압축 테스트					
- compressive stress at 1 / 2 / 5 % nominal strain	ISO 604	MPa	34 / 67 / 135	55 / 104 / 190	42 / 80 / 145
Charpy impact strength - unnotched - 충격강도	ISO 179-1/1eU	kJ/m <sup>2</sup>	no break	30	20
Charpy impact strength - notched - 충격강도	ISO 179-1/1eA	kJ/m <sup>2</sup>	15	3.5	4
Ball indentation hardness - 경도	ISO 2039-1	N/mm <sup>2</sup>	200	275	250
Rockwell hardness - 경도	ISO 2039-2	-	E 80 (M 120)	E 85 (M125)	M 110 (E73)
<b>Electrical Properties at 23 °C</b>					
Electric strength - 절연파괴 강도	IEC 60243-1	kV/mm	24	28	-
Volume resistivity - 체적저항	IEC 60093	Ohm.cm	> 10 <sup>14</sup>	> 10 <sup>14</sup>	10 <sup>10</sup> - 10 <sup>12</sup>
Surface resistivity - 표면저항	ANSI/ESD STM 11.11	Ohm/sq.	> 10 <sup>13</sup>	> 10 <sup>13</sup>	10 <sup>10</sup> - 10 <sup>12</sup>
Relative permittivity ε <sub>r</sub> : - at 100 Hz - 비투전율	IEC 60250	-	4.2	4.4	-
Relative permittivity ε <sub>r</sub> : - at 1 MHz	IEC 60250	-	3.9	4.2	5.8
Dielectric dissipation factor tan δ: - at 100 Hz - 유전손실율	IEC 60250	-	0.026	0.022	-
Dielectric dissipation factor tan δ: - at 1 MHz	IEC 60250	-	0.031	0.050	0.18
Comparative tracking index (CTI) - 비교추적계수	IEC 60112	-	175	175	-