PVDF Data Sheet 물성표

HIGH PERFORMANCE MATERIAL

PROPERTIES	Test methods	Units	PVDF Natural
Color - 색상	-	-	White
Density - 비중	ISO 1183-1	g/cm³	1.78
Water absorption: - 물흡수율			
- after 24/96 h immersion in water of 23 °C	ISO 62	mg	1 / 3
	ISO 62	%	0.01 / 0.03
- at saturation in air of 23 °C / 50 % RH	-	%	0.05
- at saturation in water of 23°C	-	%	< 0.10
Thermal Properties			
Melting temperature (DSC, 10 °C/min) - 녹는점	ISO 11357-1/-3	°C	175
Glass transition temperature (DSC, 20 °C/min) - 유리전이온도	ISO 11357-1/-2	°C	-
Thermal conductivity at 23 °C - 열전도도	-	W/(K.m)	0.19
Coefficient of linear thermal expansion - 열팽창계수			
- average value between 23 and 100 °C	-	m/(m.K)	190 x 10^{-6}
- average value between 23 and 150 °C	-	m/(m.K)	220 x 10^{-6}
- average value above 150 °C	-	m/(m.K)	-
Temperature of deflection under load - 하중변형온도			
- method A: 1.8 MPa	ISO 75-1/-2	°C	105
Max. allowable service temperature in air - 최대사용온도			
- for short periods (4)	-	°C	160
- continuously : for min. 20,000 h	-	°C	150
Min. service temperature - 최저사용온도	-	°C	-50
Flammability - 타는 정도			
- "Oxygen Index"	ISO 4589-1/-2	%	44
- according to UL 94 (1.5 / 3 mm thickness)	-	-	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	60 / -
- tensile strength	ISO 527-1/-2	MPa	60
- tensile strain at yield	ISO 527-1/-2	%	9
- tensile strain at break	ISO 527-1/-2	%	30
- tensile modulus of elasticity	ISO 527-1/-2	MPa	2200
Compression test - 압축 테스트			
- compressive stress at 1 / 2 / 5 % nominal strain	ISO 604	MPa	20 / 36 / 62
Charpy impact strength - unnotched - 충격강도	ISO 179-1/1eU	kJ/m²	no break
Charpy impact strength - notched - 충격강도	ISO 179-1/1eA	kJ/m²	10
Ball indentation hardness - 경도	ISO 2039-1	N/mm²	110
Rockwell hardness - 경도	ISO 2039-2	-	M 78
Electrical Properties at 23 °C			
Electric strength - 절연파괴 강도	IEC 60243-1	kV/mm	18
Volume resistivity - 체적저항	IEC 60093	Ohm.cm	> 10^{14}
Surface resistivity - 표면저항	ANSI/ESD STM 11.11	Ohm/sq.	> 10^{13}
Relative permittivity ε_r: - at 100 Hz - 비투전율	IEC 60250	-	7.4
Relative permittivity er: - at 1 MHz	IEC 60250	-	6.0
Dielectric dissipation factor tan d: - at 100 Hz - 유전손실율	IEC 60250	-	0.025
Dielectric dissipation factor tan d: - at 1 MHz	IEC 60250	-	0.165
Comparative tracking index (CTI) - 비교추적계수	IEC 60112	-	600