Physical properties   PE-UHMW antistatic

Properties	Test methods	Units	Values
Colour	-	-	black
Average molar mass (average molecular weight)	-	10^6 g/mol	5
Density	ISO 1183-1	g/cm3	0.935
Water absorption: - at saturation in water of 23°C	-	%	< 0.1
Thermal Properties			
Melting temperature (DSC, 10° C/min.)	ISO 11357-1/-3	°C	135
Thermal conductivity at 23°C	-	W/(K.m)	0.40
Coefficient of linear thermal expansion: - average value between 23 and 100°C	-	m/(m.K)	200×10^{-6}
Temperature of deflection under load: - method A: 1.8 MPa	ISO 75-1/-2	°C	42
vicat - softening temperature – VST/B50	ISO 306	°C	80

Max. allowable service temperature in air:
  - for short periods
  - continuously: for. min. 20'000 h
	-
	-
		°C
		°C
			120
			80

Min. service temperature	-	°C	-150

Flammability:
  - „Oxygen Index"
  - according to UL 94 (6 mm thickness)
	ISO 4589-1/-2
	-
		%
		-
			< 20
			HB

Mechanical Properties at 23°C			

Tension test:
  - tensile stress at yield
  - Ttensile strength
  - tensile strain at break
  - tensile modulus of elasticity
	ISO 527-1/-2
	ISO 527-1/-2
	ISO 527-1/-2
	ISO 527-1/-2
		MPa
		%
		%
		MPa
			20
			15
			> 50
			790

Compression test: - compressive stress at 1 / 2 / 5% nominal strain	ISO 604	MPa	7 / 11 / 17.5
Charpy impact strength - unnotched	ISO 179-1/1eU	kJ/m^2	no break
Charpy impact strength – notched	ISO 179-1/1eA	kJ/m^2	110P
Charpy impact strength – notched (14° V-notch, both sides)	ISO 11542-2	kJ/m^2	140
Ball indentation hardness	ISO 2039-1	N/mm^2	34
Shore hardness D (15 s)	ISO 2039-2	-	61
Relative weight loss in an abrasion test according to the "sand-water-slurry-method"; TIVAR 1000 = 100	ISO 15527	-	105
Electrical Properties at 23°C			
Electrical strength	IEC 60243-1	kV/mm	-
Volume resistivity	IEC 60093	Ohm.cm	-
Surface resistivity	IEC 60093	Ohm	$< 10^8$
Relative permittivity ε_r : - bei 100 Hz - bei 1 MHz	IEC 60250 IEC 60250	- -	- -
Dielectric dissipation factor δ tan: - bei 100 Hz - bei 1 MHz	IEC 60250 IEC 60250	- -	- -
Comparative tracking index (CTI)	IEC 60112	--	-

Note: 1 g/cm^3 = 1000 kg/m^3; 1 Mpa = 1 N/mm^2; 1 kV/mm = 1 MV/m.

This table is a valuable help in the choice of a material. The data listed here fall within the normal range of products properties, but they should not be used to establish material specification limits nor used alone as the basis of design.