

Title: UHMW-PE-ECO

Code: RC16102

Properties	Test Methods	Units	Values
Colour	-	-	Black
Average molar mass (average molecular weight)	-	10 ⁶ g/mol	> 4.5
Density	ISO 1183-1	g/cm ³	0.94
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
Average coefficient of linear thermal expansion between 23 and 100 °	-	m/(m.K)	200 X 10 ⁻⁶
Temperature of deflection under load: -method A: 1.9 MPa	ISO 75-1/-2	°C	42
Vicat softening temperature – VST/B50	ISO 306	°C	80
Max. allowable service temperature in air: -for shor periods	-	°C	120
-continuously: for 20,000 h	-	°C	80
Min. service temperature	-	°C	-150
Flammability: -“Oxygen Index”	ISO 4589-1/-2	%	< 20
-according to UL 94 (6mm thickness)	-	-	HB
Mechanical Properties at 23°C			
Tension test: -tensile stress at yield	ISO 527-1/-2	MPa	20
-tensile strain at yield	ISO 527-1/-2	%	15
-tensile strain at break	ISO 527-1/-2	%	> 50
-tensile modulus of elasticity	ISO 527-1/-2	MPa	775
Compression test: -compressive stress at 1 / 2 / 5 % normal 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	90P
Charpy impact strength – notched (double 14° notch)	ISO 11542-2	KJ/m ²	> 100
Ball indentation hardness	ISO 2039-1	N/mm ²	34
Shore hardness (D)	ISO 868	-	60
Relative volume loss during a wear test in “sand/water-slurry”	ISO 15527	-	< 160
Electrical properties at 23°C			
Electric strength	IEC 60243-1	kV/mm	-
Volume resistivity	IEC 60093	Ohm.cm	-
Surface resistivity	IEC 60093	Ohm	< 10 ⁸
Relative permittivity: - at 100 Hz	IEC 60250	-	-
- at 1 MHz	IEC 60250	-	-
Dielectric dissipation factor tan: - at 100 Hz	IEC 60250	-	-
- at 1 MHz	IEC 60250	-	-
Comparative tracking index (CTI)	IEC 60112	-	-