

Technical data sheet



CENTROLEN / PE-UHMW

Physical Properties			
	Value	Unit	Verification
Density	0.94	g/cm ³	ISO 1183
Moisture pick-up till saturation (in normal climate 23 °C / 50% r.h.)	-	%	ISO 62
Water absorption till saturation (in water at 23 °C)	0.01	%	ISO 62
Mechanical Properties			
	Value	Unit	Verification
Tensile stress at yield [$v = 50$ mm/min]	20	MPa	ISO 527-2
Tensile stress at break [$v = 5$ mm/min]	-	MPa	ISO 527-2
Nominal percentage elongation at break	>50	%	ISO 527-2
Tensile modulus of elasticity	800	MPa	ISO 527-2
Flexural modulus of elasticity	-	MPa	ISO 178
Ball indentation hardness (value at 30 sec.)	40	MPa	ISO 2039-1
Rockwell hardness (measured with test pieces 10 mm thick)	-		ISO 2039-2
Charpy impact strength (+23 °C)	n.br.	kJ/m ²	ISO 179/1eU
Charpy impact strength - notched (+23 °C)	-	kJ/m ²	ISO 179/1eA
Electric Properties			
	Value	Unit	Verification
Specific insulation resistance [\geq]	10^{12}	Ohm · m	IEC 60093
Specific surface resistance [\geq]	10^{13}	Ohm	IEC 60093
Dielectric constant (at 1 MHz)	3.0	10^6 Hz	IEC 60250
Dielectric constant (at 100 Hz)	2.3	10^2 Hz	IEC 60250
Dissipation factor (at 1 MHz)	0.0010	10^6 Hz	IEC 60250
Dissipation factor (at 100 Hz)	0.0004	10^2 Hz	IEC 60250
Dielectric strength K20/K20 (in transformer oil)	45	kV/mm	IEC 60243-1
Comparative tracking index (CTI)	600		IEC 60112
Thermal Properties			
	Value	Unit	Verification
Temperature for usage in air (max. short term)	120	°C	
Temperature for usage in air (max. lasting)	80	°C	
Minimum service temperature in air	-200	°C	
Heat distortion temperature (HDT A process)	42	°C	ISO 75-2
Coefficient of linear expansion (at length, 23 – 60 °C)	2.0	$10^{-4}/K$	ISO 11359
Thermal conductivity (+23 °C)	0.41	W/(K · m)	DIN 52612
Flammability according UL Standard (thickness 3 and 6 mm)	HB	Class	UL 94
Vicat softening temperature (VST/B/50)	80	°C	ISO 306
Melting point (DSC, 10 K/min)	135	°C	ISO 3146

n.br. = no break

The noted data correspond to our latest state of knowledge. The suitability of the products for special applications cannot be guaranteed legally binding, due to the a.m. properties.

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