

Generic UHMWPE

Ultra High Molecular Weight Polyethylene

Generic

Message:

This data represents typical values that have been calculated from all products classified as: Generic UHMWPE

This information is provided for comparative purposes only.

General Information			
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	0.922 to 0.949	g/cm ³	ASTM D792
23°C	0.930 to 0.950	g/cm ³	ISO 1183
--	0.924 to 0.954	g/cm ³	ASTM D1505
Apparent Density	0.45	g/cm ³	ASTM D1895
Melt Mass-Flow Rate (MFR) (190°C/21.6 kg)	0.0 to 0.25	g/10 min	ASTM D1238
Molding Shrinkage - Flow (23°C)	2.2 to 8.1	%	ASTM D955
Water Absorption			
23°C, 24 hr	0.010 to 0.070	%	ASTM D570
Saturation, 23°C	0.010 to 0.020	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			
23°C	59 to 66		ASTM D2240
23°C	57 to 64		ISO 868
Ball Indentation Hardness	35.0 to 38.3	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
23°C	669 to 803	MPa	ASTM D638
23°C	676 to 795	MPa	ISO 527-2
Tensile Strength			
Yield, 23°C	16.7 to 23.5	MPa	ASTM D638
Yield, 23°C	17.0 to 17.6	MPa	ISO 527-2
Break, 23°C	29.6 to 53.5	MPa	ASTM D638
Break, 23°C	30.0 to 30.2	MPa	ISO 527-2
Ultimate, 23°C	32.8 to 40.0	MPa	ASTM D638
Tensile Strain			
Yield, 23°C	15 to 20	%	ISO 527-2
Break, 23°C	59 to 470	%	ASTM D638
Break, 23°C	350 to 400	%	ISO 527-2
Nominal Tensile Strain at Break (23°C)	50 to 56	%	ISO 527-2
Flexural Modulus (23°C)	441 to 915	MPa	ASTM D790

Flexural Strength (Yield, 23°C)	20.6 to 26.3	MPa	ASTM D790
Compressive Modulus	551 to 689	MPa	ASTM D695
Compressive Strength			
23°C	20.0 to 22.9	MPa	ASTM D695
23°C	4.00 to 32.0	MPa	ISO 604
Coefficient of Friction	0.060 to 0.16		ASTM D1894
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	78 to 180	kJ/m ²	ISO 179
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed	78.9 to 93.5	°C	ASTM D648
1.8 MPa, Unannealed	45.9 to 79.0	°C	ASTM D648
1.8 MPa, Unannealed	42.0 to 42.1	°C	ISO 75-2/A
Continuous Use Temperature	80.0 to 120	°C	ASTM D794
Vicat Softening Temperature	80.0 to 128	°C	ASTM D1525, ISO 306
Peak Melting Temperature	133 to 136	°C	ASTM D3418
Peak Crystallization Temperature (DSC)	127 to 135	°C	ASTM D3418
CLTE - Flow			
--	9.0E-5 to 9.2E-4	cm/cm/°C	ASTM D696
--	2.0E-4	cm/cm/°C	ISO 11359-2
Specific Heat (23°C)	1840 to 2010	J/kg/°C	ASTM C351
Thermal Conductivity (23°C)	0.39 to 0.41	W/m/K	ASTM C177
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity			
--	1.0E+3 to 2.5E+13	ohms	ASTM D257
--	1.0E+6 to 2.5E+12	ohms	IEC 60093
Volume Resistivity			
23°C	1.0E+6 to 1.0E+15	ohms·cm	ASTM D257
23°C	9.8E+13 to 1.0E+14	ohms·cm	IEC 60093
Dielectric Strength			
23°C	14 to 91	kV/mm	ASTM D149
23°C	45 to 46	kV/mm	IEC 60243-1
Dielectric Constant			
23°C	2.28 to 3.00		ASTM D150
23°C	2.55		IEC 60250
Dissipation Factor			
23°C	-2.0E-3 to 3.9E-3		ASTM D150
23°C	3.7E-4 to 1.0E-3		IEC 60250

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Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

