ARTEK

DURAVAR® "HT" UHMW-PE

High-Temperature Application Formulation

PROPERTIES TABLE

Processed Utilizing Advanced Ram Extrusion Technology

Information Provided Below is a Collection of Multiple Sourcing and Believed to be Accurate

Typical Properties		Unit	Test Method	Test Specimen
Average Particle Size (d50)	120	UM	Laser Scattering	Powder
Elongation Stress	0.51	MPa	ISO 11 542-2	Dumbbell Specimen
Average Molecular Weight	$9.0*10^6$	g/mol	Margolies' Equation	
Density	0.92	g/cm^3	ISO 1183 Method A	Compression Molded Sheet
Mass Melt-Flow Rate MFR 190/21.6	-	g/10 min	ISO 1133	
Viscosity Number	3800	Ml/g	ISO 1628, part 3	Decahydronaphthalene: Powder, Concentration 0,0002 g/ml
Intrinsic Viscosity	3100	Ml/g		
Bulk Density	0.45	g/cm^3	ISO 60	Powder

Mechanical Properties	(Measured Under Standard Conditions, ISO291-23/50)			
Yield Stress @ 50% elongation		MPa	ISO 527, part 1/2; Test Speed 50mm/min	ISO 3167 Multi-Purpose Test Specimen
Ultimate Tensile Strength		MPa	ISO 527, part 1/2; Test Speed 50mm/min	ISO 3167 Multi-Purpose Test Specimen
Nominal Elongation at Break		%	ISO 527, part 1/2; Test Speed 50mm/min	ISO 3167 Multi-Purpose Test Specimen
Tensile Modulus		MPa	ISO 527, part 1/2; Test Speed 1 mm/min	ISO 3167 Multi-Purpose Test Specimen
Tensile Creep Modulus, 1 hr Value		MPa	ISO 899, part 1; Elongation < 0.5%	ISO 3167 Multi-Purpose Test Specimen
Tensile Creep Modulus, 1000 hr Value		MPa	ISO 899, part 1; Elongation < 0.5%	ISO 3167 Multi-Purpose Test Specimen
Ball Indentation Hardness, 30 sec Value		N/mm^2	ISO 2039, part 1	20 mm x 20 mm x 4 mm Multi-Purpose Test Specimen
Shore hardness D, 15 Sec Value			ISO 868	Compression Molded Sht, 6mm
Impact Strength (Charpy – w/14° V-Notch, Both Sides)	160	kj/m^2	ISO DIS 11542, part 2	120 mm x 15 mm x 10 mm Compression Molded Sheet
Impact Strength (Charpy - Single Notched @ 23°C)		kj/m^2	ISO 179/eA	80 mm x 10 mm x 4 mm Multi-Purpose Test Specimen
Impact Strength (Charpy - Single Notched @ -30°C)		kj/m^2	ISO 179/eA	80 mm x 10 mm x 4 mm Multi-Purpose Test Specimen
Wear By Sand-Slurry Method based on GUR 4120 = 100	90		Internal Test Method	76.2 mm x 25.4 mm x 6.35 mm Compression Molded Sheet

Thermal Properties	(Measured Under Standard Conditions, ISO291-23/50)			
Heat Deflection Temperature HDT/A (1.8 MPa)		ºC	ISO 75, Part 1/2	80 mm x 10 mm x 4 mm Compression Molded Sheet
Vicat Softening Temperature VST/B/50		ºC	ISO 306	10 mm x 10 mm x 4 mm Compression Molded Sheet

Thermal Properties - Continued on Page 2

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Thermal ***Properties - Continued from Page 1***

Thermal Properties	(Measured Under Standard Conditions, ISO291-23/50)			
Melting Point DSC, 10 K/min		ºC	ISO 3146, Method C	Powder
Coefficient of Linear Thermal Expansion Between 23 and 80 C Longitudinal		1/ºC	ISO 11359, Part 1/2	30 mm x 10 mm x 4 mm Compression Molded Sheet
Thermal Conductivity at 23° C		W/(m · K	Resistance Wire Process	Compression Molded Sht, 10 mm
Specific Heat at 23° C		Kj/(kg · K	Adiabat. Calorimeter	Powder

Electrical Properties	(Measured Under Standard Conditions, ISO291-23/50)			
Relative Permittivity at 100 Hz			IEC 60250	Compression Molded Sheet
Relative Permittivity at 1 MHz			IEC 60250	Compression Molded Sheet
Dissipation Factor at 100 Hz			IEC 60250	Compression Molded Sheet
Dissipation Factor at 1 MHz			IEC 60250	Compression Molded Sheet

Electrical Properties	(Measured Under Standard Conditions, ISO291-23/50)			
Volume Resistivity		Ohm M	IEC 60093	Compression Molded Sht, 1 mm
Surface Resistivity		Ohm	IEC 60093	Compression Molded Sht, 1 mm
Comparative Tracking Index CTI			IEC 60112	15 mm x 15 mm x 4 mm Compression Molded Sheet
Comparative Tracking Index CTI M			IEC 60112	15 mm x 15 mm x 4 mm Compression Molded Sheet

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