

Arkema Group KYNAR® 1000 HD Polyvinylidene Fluoride Homopolymer - Injection Molding and Extrusion

Category : Polymer , Thermoplastic , Fluoropolymer , PVDF , Polyvinylidene fluoride (PVDF), Molded/Extruded

Material Notes:

Characteristics: Natural resin - translucent, off-white hemispheres. High stability in harsh thermal, chemical and ultraviolet environments. High toughness and mechanical strength, low permeability, abrasion resistance; high purity Applications: Chemical processing – production, storage and transfer of corrosive fluids Electronics – protective sheathing, plenum and wiring insulation Semi-conductor industry Food stuff and Healthcare industries Transportation – fuel line and pipe, thermoformed body components Information provided by Arkema Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Arkema-Group-KYNAR-1000-HD-Polyvinylidene-Fluoride-Homopolymer-Injection-Molding-and-Extrusion.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.76 - 1.78 g/cc	1.76 - 1.78 g/cc	ASTM D792
Bulk Density	0.961 g/cc	0.0347 lb/in ³	
Water Absorption	0.010 - 0.030 % @Time 86400 sec	0.010 - 0.030 % @Time 24.0 hour	Immersion; ASTM D570
Viscosity	1.50e+6 - 2.00e+6 cP @Shear Rate 100 1/s, Temperature 232 °C	1.50e+6 - 2.00e+6 cP @Shear Rate 100 1/s, Temperature 450 °F	Melt Viscosity; ASTM D3835
Melt Flow	1.5 - 2.5 g/10 min @Load 5.00 kg, Temperature 232 °C	1.5 - 2.5 g/10 min @Load 11.0 lb, Temperature 450 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	77 - 82	77 - 82	ASTM D2240
Tensile Strength at Break	34.0 - 48.0 MPa	4930 - 6960 psi	ASTM D638
Tensile Strength, Yield	45.0 - 55.0 MPa	6530 - 7980 psi	ASTM D638
Elongation at Break	20 - 100 %	20 - 100 %	ASTM D638
Elongation at Yield	5.0 - 10 %	5.0 - 10 %	ASTM D638
Creep Strength	3.70 MPa @Temperature 90.0 °C, Time 360000 sec	537 psi @Temperature 194 °F, Time 100 hour	Deflection = 3.3%; Flexural Creep
	3.70 MPa	537 psi	

Mechanical Properties	Metric @ Temperature 90.0 °C, Time 3.60e+6 sec	English @ Temperature 194 °F, Time 1000 hour	Deflection = 3.4%; Flexural Creep Comments
	3.70 MPa	537 psi	
	@Temperature 60.0 °C, Time 360000 sec	@Temperature 140 °F, Time 100 hour	Deflection = 1.5%; Flexural Creep
	3.70 MPa	537 psi	
	@Temperature 60.0 °C, Time 3.60e+6 sec	@Temperature 140 °F, Time 1000 hour	Deflection = 1.7%; Flexural Creep
Tensile Modulus	1.379 - 2.31 GPa	200.0 - 335 ksi	ASTM D638
Flexural Strength	58.0 - 76.0 MPa @Strain 5.00 %	8410 - 11000 psi @Strain 5.00 %	ASTM D790
Flexural Modulus	1.655 - 2.31 GPa	240.0 - 335 ksi	ASTM D790
Compressive Strength	69.0 - 103 MPa	10000 - 14900 psi	ASTM D695
Izod Impact, Notched	1.07 - 2.14 J/cm	2.00 - 4.00 ft-lb/in	ASTM D256
Izod Impact, Unnotched	10.7 - 42.7 J/cm	20.0 - 80.0 ft-lb/in	ASTM D256
Coefficient of Friction, Dynamic	0.15	0.15	vs. steel; ASTM D1894
Coefficient of Friction, Static	0.22	0.22	vs. steel; ASTM D1894
Taber Abrasion, mg/1000 Cycles	5.0 - 9.0	5.0 - 9.0	1000 g pad; CS-17

Thermal Properties	Metric	English	Comments
CTE, linear	119 - 144 µm/m-°C	66.0 - 80.0 µin/in-°F	ASTM D696
Specific Heat Capacity	1.17 - 1.51 J/g-°C	0.280 - 0.360 BTU/lb-°F	DSC
Thermal Conductivity	0.170 - 0.190 W/m-K	1.18 - 1.32 BTU-in/hr- ft²-°F	ASTM D433
Melting Point	165 - 172 °C	329 - 342 °F	
Deflection Temperature at 1.8 MPa (264 psi)	104 - 110 °C	219 - 230 °F	ASTM D648
Glass Transition Temp, Tg	-40.0 - -38.0 °C @Frequency 1.00 Hz	-40.0 - -36.4 °F @Frequency 1.00 Hz	DMA
Decomposition Temperature	375 °C	707 °F	1% wt loss / in air; TGA
	410 °C	770 °F	1% wt loss / in nitrogen; TGA
Flammability, UL94	V-0	V-0	

Thermal Properties	Metric	English	Comments
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Electrical Properties	Metric	English	Comments
Volume Resistivity	2.00e+14 ohm-cm	2.00e+14 ohm-cm	65% RH; ASTM D257
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Dielectric Constant	4.5	4.5	ASTM D150
	@Frequency 1.00e+8 Hz	@Frequency 1.00e+8 Hz	
	9.5	9.5	ASTM D150
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	63.0 kV/mm	1600 kV/in	ASTM D149
Dissipation Factor	0.010 - 0.25	0.010 - 0.25	ASTM D150
	@Frequency 100 Hz	@Frequency 100 Hz	

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	190 - 220 °C	374 - 428 °F	Pipe Extrusion
	195 - 220 °C	383 - 428 °F	Tube Extrusion
	200 - 220 °C	392 - 428 °F	Injection Molding
Middle Barrel Temperature	200 - 230 °C	392 - 446 °F	Pipe Extrusion
	210 - 230 °C	410 - 446 °F	Injection Molding
	210 - 240 °C	410 - 464 °F	Tube Extrusion
Front Barrel Temperature	210 - 240 °C	410 - 464 °F	Tube Extrusion
	220 - 250 °C	428 - 482 °F	Injection Molding
	230 - 250 °C	446 - 482 °F	Pipe Extrusion
Nozzle Temperature	210 - 245 °C	410 - 473 °F	Injection Molding
Die Temperature	210 - 250 °C	410 - 482 °F	Pipe Extrusion
	210 - 250 °C	410 - 482 °F	Tube Extrusion
Head Temperature	210 - 240 °C	410 - 464 °F	Pipe Extrusion
	210 - 240 °C	410 - 464 °F	Tube Extrusion
Mold Temperature	50.0 - 90.0 °C	122 - 194 °F	Injection Molding

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