Arkema Group KYNAR® 460 Polyvinylidene Fluoride Homopolymer - Extrusion

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

Material Notes:

Characteristics: Natural resin - translucent, off-white hemispheres. Broad molecular weight distribution. High stability in harsh thermal, chemical and ultraviolet environments. High toughness and mechanical strength, low permeability, fire resistance, abrasion resistance; low-smoke emission; high purityApplications:Chemical processing – production, storage and transfer of corrosive fluidsElectronics – protective sheathing, plenum and wiring insulationSemi-conductor industryFood stuff and Healthcare industriesTransportation – fuel line and pipe, thermoformed body componentsInformation provided by Arkema Inc.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Arkema-Group-KYNAR-460-Polyvinylidene-Fluoride-Homopolymer-Extrusion.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.75 - 1.77 g/cc	1.75 - 1.77 g/cc	ASTM D792
Bulk Density	0.961 g/cc	0.0347 lb/in³	
Water Absorption	0.020 - 0.040 % @Time 86400 sec	0.020 - 0.040 % @Time 24.0 hour	Immersion; ASTM D570
Viscosity	2.35e+6 - 2.95e+6 cP @Shear Rate 100 1/s, Temperature 232 °C	2.35e+6 - 2.95e+6 cP @Shear Rate 100 1/s, Temperature 450 °F	Melt Viscosity; ASTM D3835
Melt Flow	6.0 - 14 g/10 min @Load 21.6 kg, Temperature 232 °C	6.0 - 14 g/10 min @Load 47.6 lb, Temperature 450 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	75 - 80	75 - 80	ASTM D2240
Tensile Strength at Break	31.0 - 48.0 MPa	4500 - 6960 psi	ASTM D638
Tensile Strength, Yield	34.0 - 52.0 MPa	4930 - 7540 psi	ASTM D638
Elongation at Break	50 - 250 %	50 - 250 %	ASTM D638
Elongation at Yield	10 - 15 %	10 - 15 %	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 @Temperature 90.0 °C, Time 3.60e+6 sec	537 psi @Temperature 194 °F, Time 1000 hour	Deflection = 3.4%; Flexural Creep

Mechanical Properties	Metric	English	Comments
	@Temperature 60.0 °C, Time 360000 sec	@Temperature 140 °F, Time 100 hour	Deflection = 1.5%; Flexural Creep
	3.70 MPa @Temperature 60.0 °C, Time 3.60e+6 sec	537 psi @Temperature 140 °F, Time 1000 hour	Deflection = 1.7%; Flexural Creep
Tensile Modulus	1.034 - 1.379 GPa	150.0 - 200.0 ksi	ASTM D638
Flexural Strength	48.0 - 62.0 MPa @Strain 5.00 %	6960 - 8990 psi @Strain 5.00 %	ASTM D790
Flexural Modulus	1.379 - 1.792 GPa	200.0 - 259.9 ksi	ASTM D790
Compressive Strength	34.0 - 69.0 MPa	4930 - 10000 psi	ASTM D695
Izod Impact, Notched	1.07 - 2.14 J/cm	2.00 - 4.00 ft-lb/in	ASTM D256
Izod Impact, Unnotched	8.01 - 21.4 J/cm	15.0 - 40.0 ft-lb/in	ASTM D256
Coefficient of Friction, Dynamic	0.17	0.17	vs. steel; ASTM D1894
Coefficient of Friction, Static	0.23	0.23	vs. steel; ASTM D1894
Taber Abrasion, mg/1000 Cycles	7.0 - 9.0	7.0 - 9.0	1000 g pad; CS-17

Thermal Properties	Metric	English	Comments
CTE, linear	90.0 - 126 µm/m-°C	50.0 - 70.0 µin/in-°F	ASTM D696
Specific Heat Capacity	1.17 - 1.46 J/g-°C	0.280 - 0.350 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	155 - 165 °C	311 - 329 °F	
Deflection Temperature at 0.46 MPa (66 psi)	112 - 140 °C	234 - 284 °F	ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	80.0 - 90.0 °C	176 - 194 °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

Electrical Properties	Metric	English	Comments
Volume Resistivity	2.00e+14 ohm-cm @Temperature 20.0 °C	2.00e+14 ohm-cm @Temperature 68.0 °F	65% RH; ASTM D257
Dielectric Constant	4.5 @Frequency 1.00e+8 Hz	4.5 @Frequency 1.00e+8 Hz	ASTM D150
	9.5 @Frequency 100 Hz	9.5 @Frequency 100 Hz	ASTM D150
Dielectric Strength	63.0 kV/mm	1600 kV/in	ASTM D149
Dissipation Factor	0.010 - 0.21 @Frequency 100 Hz	0.010 - 0.21 @Frequency 100 Hz	ASTM D150

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	195 - 220 °C	383 - 428 °F	Tube Extrusion
	200 - 230 °C	392 - 446 °F	Pipe Extrusion
	200 - 230 °C	392 - 446 °F	Injection Molding
Middle Barrel Temperature	210 - 240 °C	410 - 464 °F	Tube Extrusion
	210 - 240 °C	410 - 464 °F	Injection Molding
	220 - 240 °C	428 - 464 °F	Pipe 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	230 - 255 °C	446 - 491 °F	Injection Molding
Die Temperature	210 - 250 °C	410 - 482 °F	Tube Extrusion
	230 - 260 °C	446 - 500 °F	Pipe Extrusion
Head Temperature	210 - 240 °C	410 - 464 °F	Tube Extrusion
	230 - 250 °C	446 - 482 °F	Pipe Extrusion
Mold Temperature	50.0 - 90.0 °C	122 - 194 °F	Injection Molding

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