

KYNAR FLEX®

3121-50

Kynar Flex® resins are fluorinated thermoplastic copolymers.

Kynar Flex® 3121-50 is a pelletized flexible, semi-crystalline VF2 based copolymer. It can be molded or extruded and has a useful temperature range from -40°C - 150°C. Kynar Flex® 3120-50 has a UL RTI of 150°C. This product is **NSF/ANSI/CAN 61** certified.

Kynar Flex® 3120-50 can be used in compounding for cross-linkable wire and cable as well as both wire applications requiring low temperature flexibility and high temperature resistance.

Kynar Flex® 3120-50 also finds use as a polymer processing aid (PPA) for polyolefins. The use of Kynar Flex® 3120-50 or Kynar Flex 3121-50 at 200 -1000 ppm levels reduces extruder pressure, improves surface finish, reduces die build up, and improves gauge control.

PROPERTIES	VALUE	UNIT	TEST STANDARD
RHEOLOGICAL PROPERTIES			
Melt Volume-Flow Rate	0.5	cm³/10min	ISO 1133
Temperature	230	°C	-
	446	°F	-
Load	5	kg	-
	11	lb	-
Melt Flow Rate	2.5 - 7.5	g/10min	ASTM D1238
Temperature	230	°C	-
Load	12.5	kg	-
Melt Viscosity, 230°C, 100 s-1	20 - 26	kPoise	ASTM D3835
MECHANICAL PROPERTIES			
Tensile Modulus	700	MPa	ISO 527-1/-2
	102000	psi	
Tensile Modulus, 73 °F	689 - 1170	MPa	ASTM D638
	100000 - 170000	psi	
Yield stress	27	MPa	ISO 527-1/-2
	3920	psi	
Tensile Strength at Yield, 73 °F	24.1 - 34.5	MPa	ASTM D638
	3500 - 5000	psi	
Yield strain	15	%	ISO 527-1/-2
Elongation at Yield, 73 °F	10 - 20	%	ASTM D638
Nominal Strain at Break	>50	%	ISO 527-1/-2
Tensile Strength at Break, 73 °F	34.5 - 48.3	MPa	ASTM D638
	5000 - 7000	psi	

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Elongation at Break, 73 °F	300 - 500	%	ASTM D638
Taber Abrasion, CS 17 1000g:pad	16 - 19	mg/1000 cycles	ASTM-G195-13A
Hardness, Shore D, 73 °F	65 - 70	-	ASTM D2240
Flexural Modulus, 73 °F	621 - 827	MPa	ASTM D790
	90000 - 120000	psi	
Flexural Stength @ 5% Strain, 73 °F	20.7 - 34.5	MPa	ASTM D790
	3000 - 5000	psi	
Compressive Strength, 73 °F	34.5 - 48.3	MPa	ASTM D695
	5000 - 7000	psi	
Unnotched Impact Strength, 73 °F	No Break	kJ/m	ASTM D256
Notched Impact Strength, 73 °F	No Break	kJ/m	ASTM D256
Coefficient of Friction, Static vs. Steel, 73 °F	0.31	-	ASTM D1894
Coefficient of Friction, Dynamic vs. Steel, 73 °F	0.3	-	ASTM D1894
THERMAL PROPERTIES			
Melting Temperature, 10°C/min	165	°C	ISO 11357-1/-3
Melting Point, 73 °F	161 - 168	°C	ASTM D3418
Glass Transition Temperature, 10°C/min	-40	°C	ISO 11357-1/-2
Glass Transition Temperature (Tg)	-41.1 - -39.4	°C	ASTM D7028
	-42 - -39	°F	
Temperature Rating	150	°C	UL RTI
	302	°F	
Temp. of Deflection Under Load, 1.80 MPa	50	°C	ISO 75-1/-2
	122	°F	
Heat Deflection Temperature, 264 Psi, 248 °F/hr	43.3 - 54.4	°C	ASTM D648
	110 - 130	°F	
Heat Deflection Temperature, 66 Psi, 248 °F/hr	54.4 - 76.7	°C	ASTM D648
	130 - 170	°F	
Coefficient of Thermal Expansion, 73 °F	12.6 - 18.5	10E-5/°C	ASTM D696
	7 - 10.3	10E-5/°F	
Burning Behav. at 1.5 mm Nominal Thickness	V-0	class	IEC 60695-11-10
Thickness Tested	1.5	mm	-
	0.0591	in	
Yellow Card available	yes	-	-
Burning Behav. at Thickness h	V-0	class	IEC 60695-11-10

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Thickness Tested	1.0	mm	-
	0.0394	in	
Yellow Card available	yes	-	-
Burning Behav. 5V at Thickness h	5VA	class	IEC 60695-11-20
Thickness Tested	1.0	mm	-
	0.0394	in	
Oxygen Index	43	%	ISO 4589-1/-2
Limiting Oxygen Index, 73 °F	42	%	ASTM D2863
Thermal Conductivity	0.144 - 0.18	W/(m K)	ASTM D433
	1 - 1.25	BTU in /(hr ft2 F)	
Specific Heat	745 - 958	J/(kg K)	DSC
	0.28 - 0.36	BTU/(lb·°F)	
Thermal Decomposition TGA, in air	375	°C	1% wt. loss
	707	°F	
Thermal Decomposition TGA, in nitrogen	410	°C	1% wt. loss
	770	°F	
Relative Thermal Index, Mechanical	150	°C	UL 746B
	302	°F	
Relative Thermal Index, Electrical	150	°C	UL 746B
	302	°F	
ELECTRICAL PROPERTIES			
Dielectric Constant, 1 kHz	3.2 - 10.2	-	ASTM D150
Dissipation Factor, 100 kHz	0.02 - 0.19	-	ASTM D150
Surface Resistivity, 73 °F	5.3E11 - 5.5E11	Ohm per square	ASTM D257
Dielectric (Electric) Strength, 73°F	1.3 - 1.5	kV/mil	ASTM D149
OTHER PROPERTIES			
Water Absorption	0.03	%	Sim. to ISO 62
Water Absorption	0.03 - 0.05	%	ASTM D570
Density	1780	kg/m³	ISO 1183
	1.78	g/cm³	
Specific Gravity, 73 °F	1.75 - 1.77	-	ASTM D792
OPTICAL PROPERTIES			
Refractive Index @ sodium D line	1.41	-	ASTM D542