

KYNAR® 9000 HD

Kynar® resins are fluorinated thermoplastic homopolymers.

Outstanding characteristics: chemical resistance, imperviousness to UV, high barrier properties, high purity, good mechanical and thermo-mechanical properties.

Kynar® 9000 HD resin is a standard grade of granules for injection molding of thin walled parts and multifilament extrusion.

MAIN CHARACTERISTICS

PROPERTIES	VALUE	UNIT	TEST STANDARD
RHEOLOGICAL PROPERTIES			
Melt Volume-Flow Rate	10	cm ³ /10min	ISO 1133
Temperature	230	°C	-
Load	5	kg	-
Melt Flow Rate	16 - 30	g/10min	ASTM D1238
Temperature	230	°C	-
Load	5	kg	-
Molding Shrinkage, parallel	2.0	%	ISO 294-4, 2577
Molding Shrinkage, normal	2.0	%	ISO 294-4, 2577
Melt Viscosity, 230°C, 100 s-1	5 - 8	kPoise	ASTM D3835
MECHANICAL PROPERTIES			
Tensile Modulus	2500	MPa	ISO 527-1/-2
Tensile Modulus, 73 °F	1380 - 2310	MPa	ASTM D638
Yield stress	54	MPa	ISO 527-1/-2
Tensile Strength at Yield, 73 °F	44.8 - 55.2	MPa	ASTM D638
Yield strain	8	%	ISO 527-1/-2
Elongation at Yield, 73 °F	5 - 10	%	ASTM D638
Nominal Strain at Break	40	%	ISO 527-1/-2
Tensile Strength at Break, 73 °F	34.5 - 55.2	MPa	ASTM D638
Elongation at Break, 73 °F	20 - 100	%	ASTM D638
Taber Abrasion, CS 17 1000g:pad	5 - 9	mg/1000 cycles	ASTM-G195-13A
Hardness, Shore D, 73 °F	76 - 80	-	ASTM D2240
Flexural Modulus, 73 °F	1380 - 2310	MPa	ASTM D790
Flexural Stength @ 5% Strain, 73 °F	58.6 - 75.8	MPa	ASTM D790
Compressive Strength, 73 °F	68.9 - 103	MPa	ASTM D695
Charpy Impact Strength, +23°C	232	kJ/m ²	ISO 179/1eU
Charpy Impact Strength, -30°C	218	kJ/m ²	ISO 179/1eU
Charpy Notched Impact Strength, +23°C	11	kJ/m ²	ISO 179/1eA
Charpy Notched Impact Strength, -30°C	5	kJ/m ²	ISO 179/1eA
Unnotched Impact Strength, 73 °F	1.07 - 4.27	kJ/m	ASTM D256

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KYNAR® 9000 HD

Notched Impact Strength, 73 °F	0.0961 - 0.214	kJ/m	ASTM D256
Coefficient of Friction, Static vs. Steel, 73 °F	0.2	-	ASTM D1894
Coefficient of Friction, Dynamic vs. Steel, 73 °F	0.14	-	ASTM D1894
THERMAL PROPERTIES			
Melting Temperature, 10°C/min	171	°C	ISO 11357-1/-3
Melting Point, 73 °F	165 - 172	°C	ASTM D3418
Glass Transition Temperature, 10°C/min	-40	°C	ISO 11357-1/-2
Glass Transition Temperature (Tg)	-40.6 - -38.3	°C	ASTM D7028
Temp. of Deflection Under Load, 1.80 MPa	110	°C	ISO 75-1/-2
Heat Deflection Temperature, 264 Psi, 248 °F/hr	105 - 115	°C	ASTM D648
Heat Deflection Temperature, 66 Psi, 248 °F/hr	125 - 140	°C	ASTM D648
Vicat Softening Temperature, 50°C/h 50N	141	°C	ISO 306
Coeff. of Linear Thermal Expansion, parallel	136	E-6/K	ISO 11359-1/-2
Coefficient of Thermal Expansion, 73 °F	11.9 - 14.4	10E-5/°C	ASTM D696
Burning Behav. at 1.5 mm Nominal Thickness	V-0	class	IEC 60695-11-10
Thickness Tested	1.6	mm	-
Burning Behav. at Thickness h	V-0	class	IEC 60695-11-10
Thickness Tested	0.8	mm	-
Oxygen Index	67	%	ISO 4589-1/-2
Limiting Oxygen Index, 73 °F	60	%	ASTM D2863
Thermal Decomposition TGA, in air	375	°C	1% wt. loss
Thermal Decomposition TGA, in nitrogen	410	°C	1% wt. loss
ELECTRICAL PROPERTIES			
Relative Permittivity, 100Hz	10	-	IEC 60250
Relative Permittivity, 1MHz	7.5	-	IEC 60250
Dielectric Constant, 1 kHz	4.5 - 0.5	-	ASTM D150
Dissipation Factor, 100Hz	310	E-4	IEC 60250
Dissipation Factor, 1MHz	2160	E-4	IEC 60250
Dissipation Factor, 100 kHz	0.01 - 0.21	-	ASTM D150
Volume Resistivity, DC 68 °F, 65% R.H.	2E14	Ohm*cm	ASTM D257
Dielectric (Electric) Strength, 73°F	1.7	kV/mil	ASTM D149
OTHER PROPERTIES			
Water Absorption	0.03	%	Sim. to ISO 62
Water Absorption	0.01 - 0.03	%	ASTM D570
Humidity Absorption	0.015	%	Sim. to ISO 62
Density	1780	kg/m³	ISO 1183
Specific Gravity, 73 °F	1.76 - 1.78	-	ASTM D792

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KYNAR[®] 9000 HD

OPTICAL PROPERTIES

Refractive Index @ sodium D line

1.42

-

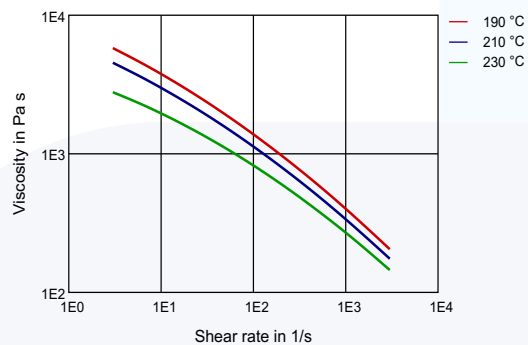
ASTM D542

MAIN APPLICATIONS:

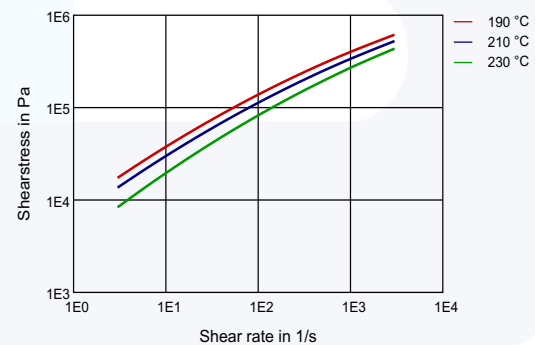
- corrosion protection in the chemical industry
- wire and cable
- coating (painting, co-extrusion)
- off-shore

DIAGRAMS

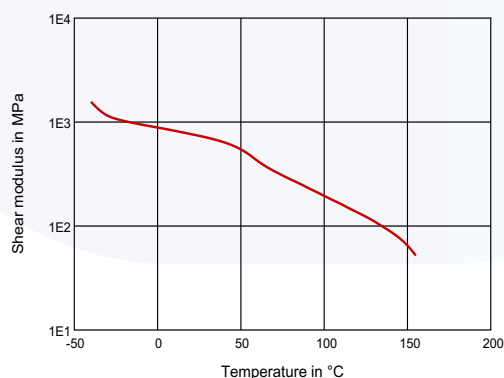
VISCOSITY-SHEAR RATE



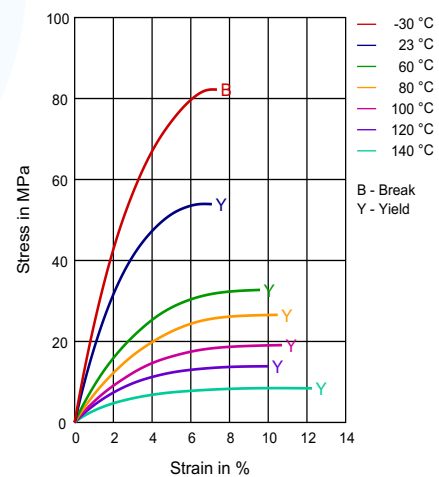
SHEARSTRESS-SHEAR RATE



DYNAMIC SHEAR MODULUS-TEMPERATURE



STRESS-STRAIN



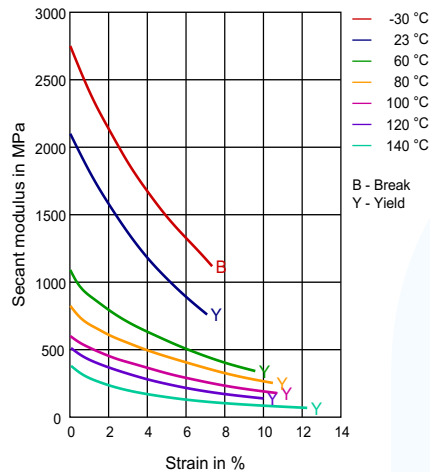
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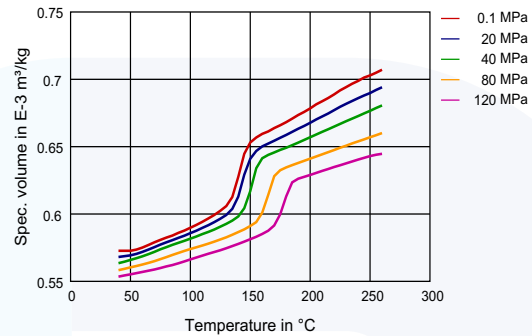
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SECANT MODULUS-STRAIN



SPECIFIC VOLUME-TEMPERATURE (PVT)



PROCESSING

Injection Molding, Casting, Thermoforming

DELIVERY FORM

Pellets, Granules

SPECIAL CHARACTERISTICS

Heat Stabilized, Light Stabilized

REGIONAL AVAILABILITY

North America, Europe, Asia Pacific, South and Central America, Near East/Africa

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kynar.com

Arkema Inc. – Technical Polymers
900 First Avenue
King of Prussia, PA 19406
Tel.: +1 610 205 7000
Fax: +1 610 205 7497
arkema-america.com

KYNAR®
BY ARKEMA

Headquarters: Arkema France
420, rue d'Estienne d'Orves
92705 Colombes Cedex – France
Tel.: +33 1 49 00 80 80
Fax: +33 1 49 00 83 96
arkema.com

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