

Kynar® 6000 HD

PVDF

Kynar® 6000 HD resin

Kynar® resins are fluorinated thermoplastic homopolymers.

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

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

Kynar® 6000 HD resin is a standard grade of granules for injection molding.

Rheological properties

	Value	Unit	Test Standard
Melt volume-flow rate, MVR	6.7	cm ³ /10min	ISO 1133
Temperature	230	°C	-
Load	5	kg	-
Molding shrinkage, parallel	2.0	%	ISO 294-4, 2577
Molding shrinkage, normal	2.0	%	ISO 294-4, 2577

Mechanical properties

	Value	Unit	Test Standard
Tensile Modulus	2300	MPa	ISO 527-1/-2
Yield stress	52	MPa	ISO 527-1/-2
Yield strain	9	%	ISO 527-1/-2
Nominal strain at break	40	%	ISO 527-1/-2
Charpy impact strength, +23°C	227	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	221	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, +23°C	12	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	5	kJ/m ²	ISO 179/1eA

Thermal properties

	Value	Unit	Test Standard
Melting temperature, 10°C/min	171	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	-40	°C	ISO 11357-1/-2
Temp. of deflection under load, 1.80 MPa	108	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	140	°C	ISO 306
Coeff. of linear therm. expansion, parallel	150	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm nom. thickn.	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	80	%	ISO 4589-1/-2

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Electrical properties

	Value	Unit	Test Standard
Relative permittivity, 100Hz	9.5	-	IEC 60250
Relative permittivity, 1MHz	7	-	IEC 60250
Dissipation factor, 100Hz	280	E-4	IEC 60250
Dissipation factor, 1MHz	2200	E-4	IEC 60250
Volume resistivity	1E10	Ohm*m	IEC 60093
Surface resistivity	1.5E14	Ohm	IEC 60093
Electric strength	24	kV/mm	IEC 60243-1
Comparative tracking index	600	-	IEC 60112

Other properties

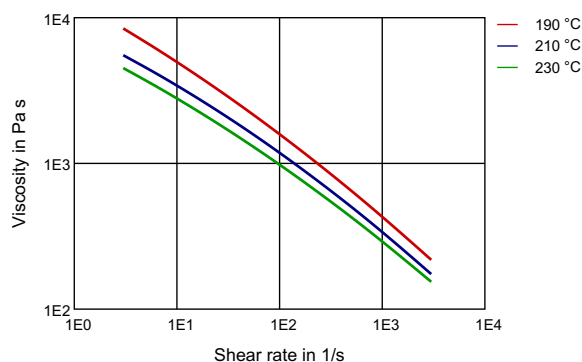
	Value	Unit	Test Standard
Water absorption	0.02	%	Sim. to ISO 62
Humidity absorption	0.015	%	Sim. to ISO 62
Density	1770	kg/m ³	ISO 1183

Test specimen production

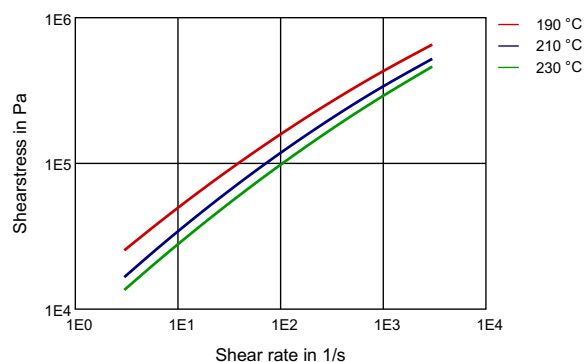
	Value	Unit	Test Standard
Injection Molding, melt temperature	220	°C	ISO 294
Injection Molding, mold temperature	90	°C	ISO 10724
Injection Molding, injection velocity	10	mm/s	ISO 294
Injection Molding, pressure at hold	13	MPa	ISO 294

Diagrams

Viscosity-shear rate



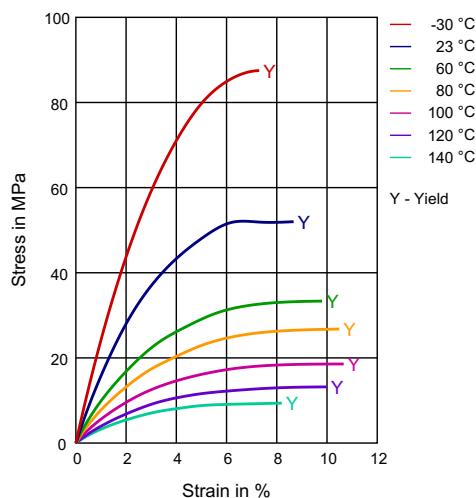
Shearstress-shear rate



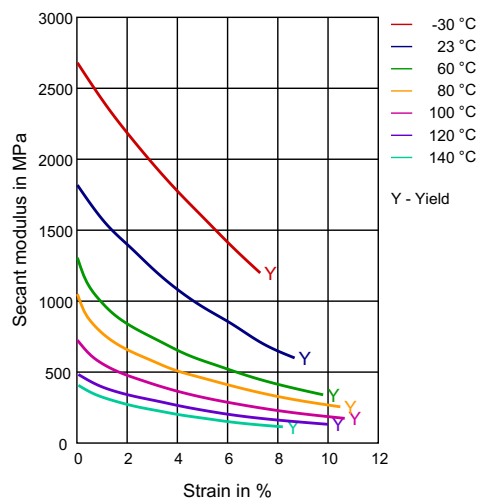
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PVDF

Stress-strain



Secant modulus-strain



Characteristics

Processing

Injection Molding, Film Extrusion, Profile Extrusion, Sheet Extrusion, Casting, Thermoforming

Delivery form

Pellets, Granules

Chemical Media Resistance

Acids

- ✓ Acetic Acid (5% by mass) (23°C)
- ✓ Citric Acid solution (10% by mass) (23°C)
- ✓ Lactic Acid (10% by mass) (23°C)
- ✓ Hydrochloric Acid (36% by mass) (23°C)
- ✓ Nitric Acid (40% by mass) (23°C)
- ✓ Sulfuric Acid (38% by mass) (23°C)
- ✓ Sulfuric Acid (5% by mass) (23°C)
- ✓ Chromic Acid solution (40% by mass) (23°C)

Bases

- ✓ Sodium Hydroxide solution (35% by mass) (23°C)
- ✓ Sodium Hydroxide solution (1% by mass) (23°C)
- ✓ Ammonium Hydroxide solution (10% by mass) (23°C)

Alcohols

- ✓ Isopropyl alcohol (23°C)
- ✓ Methanol (23°C)
- ✓ Ethanol (23°C)

Hydrocarbons

- ✓ n-Hexane (23°C)

Special Characteristics

Light stabilized or stable to light, U.V. stabilized or stable to weather, Heat stabilized or stable to heat

Regional Availability

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

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- ✓ Toluene (23°C)
- ✓ iso-Octane (23°C)

Ketones

- ✗ Acetone (23°C)

Ethers

- ✓ Diethyl ether (23°C)

Mineral oils

- ✓ SAE 10W40 multigrade motor oil (23°C)
- ✓ SAE 10W40 multigrade motor oil (130°C)
- ✓ SAE 80/90 hypoid-gear oil (130°C)
- ✓ Insulating Oil (23°C)

Standard Fuels

- ✓ ISO 1817 Liquid 1 (60°C)
- ✓ ISO 1817 Liquid 2 (60°C)
- ✓ ISO 1817 Liquid 3 (60°C)
- ✓ ISO 1817 Liquid 4 (60°C)
- ✓ Standard fuel without alcohol (pref. ISO 1817 Liquid C) (23°C)
- ✓ Standard fuel with alcohol (pref. ISO 1817 Liquid 4) (23°C)
- ✓ Diesel fuel (pref. ISO 1817 Liquid F) (23°C)
- ✓ Diesel fuel (pref. ISO 1817 Liquid F) (90°C)
- ✓ Diesel fuel (pref. ISO 1817 Liquid F) (>90°C)

Salt solutions

- ✓ Sodium Chloride solution (10% by mass) (23°C)
- ✓ Sodium Hypochlorite solution (10% by mass) (23°C)
- ✓ Sodium Carbonate solution (20% by mass) (23°C)
- ✓ Sodium Carbonate solution (2% by mass) (23°C)
- ✓ Zinc Chloride solution (50% by mass) (23°C)

Other

- ✗ Ethyl Acetate (23°C)
- ✓ Hydrogen peroxide (23°C)
- ✓ Ethylene Glycol (50% by mass) in water (108°C)
- ✓ Water (23°C)
- ✓ Deionized water (90°C)
- ✓ Phenol solution (5% by mass) (23°C)