

## Kynar® 740

PVDF

### Kynar® 740 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® 740 resin** is a standard grade of granules for extrusion of tubes and plaques, compression and transfer molding. This product is ANSI/NSF Standard 61 certified.

A powder form is available as **Kynar® 741 resin**.

#### Rheological properties

	Value	Unit	Test Standard
Melt volume-flow rate, MVR	<b>1.1</b>	cm <sup>3</sup> /10min	ISO 1133
Temperature	<b>230</b>	°C	-
Load	<b>5</b>	kg	-
Molding shrinkage, parallel	<b>2.0</b>	%	ISO 294-4, 2577
Molding shrinkage, normal	<b>2.0</b>	%	ISO 294-4, 2577

#### Mechanical properties

	Value	Unit	Test Standard
Tensile Modulus	<b>1700</b>	MPa	ISO 527-1/-2
Yield stress	<b>50</b>	MPa	ISO 527-1/-2
Yield strain	<b>7</b>	%	ISO 527-1/-2
Nominal strain at break	<b>&gt;50</b>	%	ISO 527-1/-2
Tensile creep modulus, 1h	<b>1050</b>	MPa	ISO 899-1
Tensile creep modulus, 1000h	<b>570</b>	MPa	ISO 899-1
Charpy impact strength, +23°C	<b>244</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30°C	<b>186</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, +23°C	<b>14</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -30°C	<b>5</b>	kJ/m <sup>2</sup>	ISO 179/1eA

#### Thermal properties

	Value	Unit	Test Standard
Melting temperature, 10°C/min	<b>168</b>	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	<b>-40</b>	°C	ISO 11357-1/-2
Temp. of deflection under load, 1.80 MPa	<b>105</b>	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	<b>135</b>	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	<b>135</b>	°C	ISO 306
Coeff. of linear therm. expansion, parallel	<b>150</b>	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm nom. thickn.	<b>V-0</b>	class	IEC 60695-11-10
Thickness tested	<b>1.6</b>	mm	-

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Yellow Card available	<b>yes</b>	-	-
Burning Behav. at thickness h	<b>V-0</b>	class	IEC 60695-11-10
Thickness tested	<b>0.8</b>	mm	-
Oxygen index	<b>43</b>	%	ISO 4589-1/-2

### Electrical properties

	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Relative permittivity, 100Hz	<b>11</b>	-	IEC 60250
Relative permittivity, 1MHz	<b>8</b>	-	IEC 60250
Dissipation factor, 100Hz	<b>260</b>	E-4	IEC 60250
Dissipation factor, 1MHz	<b>2310</b>	E-4	IEC 60250
Volume resistivity	<b>2E12</b>	Ohm*m	IEC 60093
Surface resistivity	<b>&gt;1E15</b>	Ohm	IEC 60093
Electric strength	<b>21</b>	kV/mm	IEC 60243-1
Comparative tracking index	<b>600</b>	-	IEC 60112

### Other properties

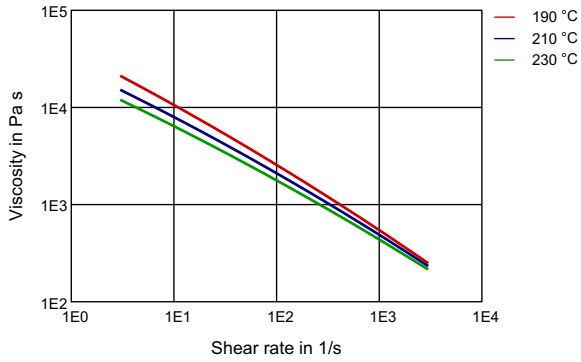
	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Water absorption	<b>0.03</b>	%	Sim. to ISO 62
Humidity absorption	<b>0.015</b>	%	Sim. to ISO 62
Density	<b>1780</b>	kg/m <sup>3</sup>	ISO 1183

### Test specimen production

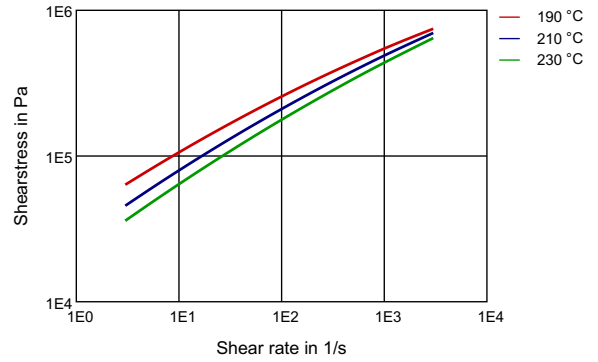
	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Injection Molding, melt temperature	<b>230</b>	°C	ISO 294
Injection Molding, mold temperature	<b>90</b>	°C	ISO 10724
Injection Molding, injection velocity	<b>10</b>	mm/s	ISO 294
Injection Molding, pressure at hold	<b>13</b>	MPa	ISO 294
Compression Molding, molding temperature	<b>225</b>	°C	ISO 293
Compression Molding, molding time	<b>3</b>	min	ISO 293
Compression Molding, demolding temperature	<b>120</b>	°C	ISO 293

**Diagrams**

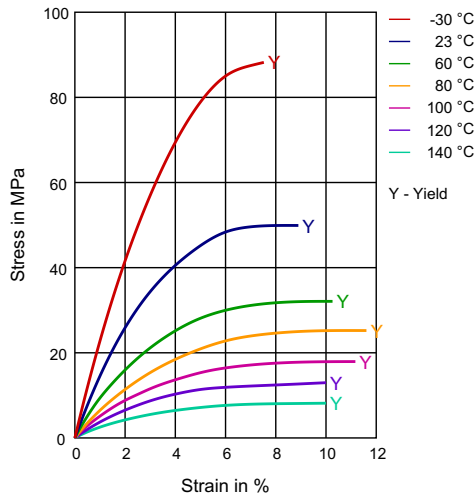
**Viscosity-shear rate**



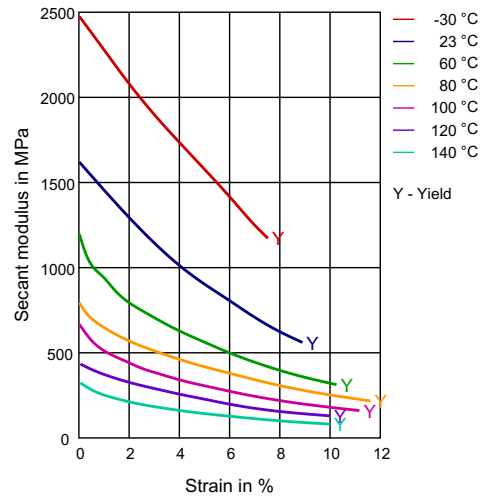
**Shearstress-shear rate**



**Stress-strain**



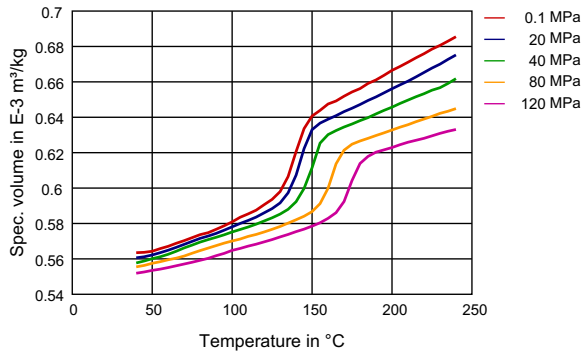
**Secant modulus-strain**



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## Specific volume-temperature (pvT)



## Characteristics

### Processing

Profile Extrusion, Sheet Extrusion, Other Extrusion, Transfer Molding, Thermoforming

### Delivery form

Pellets

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