

Product Information

VESTORAN® X7342

MODIFIED POLYPHENYLENE ETHER (PPE), HIGH HEAT RESISTANT, 20 % GLASS FIBER-REINFORCED

VESTORAN® X7342 is the registered trademark of the Evonik Operations GmbH for molding compounds containing poly-2,6-dimethyl-1,4-phenylene ether as polymeric constituent (poly-phenylene ether, PPE, also referred to as PPO).

As a material of amorphous structure, VESTORAN® X7342 shows very small mold shrinkage. Therefore molded parts have a very low tendency to warp.

Moldings of VESTORAN® X7342 are dimensionally stable and hydrolysis resistant even in hot water, but are more sensitive to organic solvents than semi-crystalline plastics. VESTORAN® X7342 is resistant to aqueous alkalines and acids, certain alcohols, and glycol solutions.

Due to the glass fiber-reinforcement the compound combines outstanding heat deflection temperature under load with high strength and rigidity. The even smaller shrinkage compared to non-reinforced VESTORAN® depends on the orientation of the glass fibers in the molded part.

VESTORAN® X7342 is supplied as cylindrical granules in polyethylene packaging.

Processing advice is given in a separate product information.

Key Features

Industrial Sector

Automotive and Mobility

Resistance to

Heat (thermal stability), Hydrolysis / hot water

Processing

Injection molding

Conformity

Automotive

Delivery form

Pellets, Granules

Additives

Glass fibers

Mechanical properties ISO

Tensile modulus

dry

885000

Unit

psi

Test Standard

ISO 527

Tensile strength

15700

psi

ISO 527

Stress at break	15700	psi	ISO 527
Strain at break, B	3.5	%	ISO 527
Charpy impact strength, +23°C	23.3	ftlb/in ²	ISO 179/1eU
Type of failure	C	-	-
Charpy notched impact strength, +23°C	6.18	ftlb/in ²	ISO 179/1eA
Type of failure	C	-	-

Thermal properties	dry	Unit	Test Standard
Temp. of deflection under load A, 1.80 MPa	329	°F	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	338	°F	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	356	°F	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	338	°F	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	2.22E-5	in/in/°F	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	1.67E-5	in/in/°F	ISO 11359-1/-2

Physical properties	dry	Unit	Test Standard
Density	1.19	g/cm ³	ISO 1183
Density	1.19	g/cm ³	ASTM D 792

Burning Behav.	dry	Unit	Test Standard
UL Yellow Card available	yes	-	-
Burning behav. at 1.5 mm nom. thickn.	HB	class	IEC 60695-11-10
Thickness tested	0.0630	in	-
Burning behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	0.0315	in	-

Electrical properties	dry	Unit	Test Standard
Volume resistivity, V	1E11	Ohm*m	IEC 62631-3-1
Surface resistance, RSD	1E14	Ohm	IEC 62631-3-2

Surface resistivity, D	1E15	Ohm/sq	IEC 62631-3-2
Relative permittivity, 100Hz	3	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.5	-	IEC 62631-2-1
Dissipation factor, 100Hz	80	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	10	E-4	IEC 62631-2-1
Dielectric strength, AC, S20/P50	737	V/mil	Sim. to IEC 60243-1
CTI, test solution A, 50 drops value	175	-	IEC 60112
Assessment of the insulation group	III a	-	DIN EN 60664-1

Rheological properties	dry	Unit	Test Standard
Melt volume-flow rate, MVR	40	cm ³ /10min	ISO 1133
Temperature	300	°C	-
Load	21.6	kg	-
Molding shrinkage, parallel	0.2	%	ISO 294-4, 2577
Molding shrinkage, normal	0.4	%	ISO 294-4, 2577
Mold temperature	176	°F	-
Melt temperature	608	°F	-

Test specimen production	dry	Unit	Test Standard
Injection Molding, melt temperature	572	°F	ISO 294
Injection Molding, mold temperature	176	°F	ISO 294
Injection Molding, injection velocity	7.87	in/s	ISO 294

Characteristics

Special Characteristics

Amorphous, High heat resistant, Low warpage / Low shrinkage

Additives

Heat stabilizer

Chemical Resistance

Acid resistance, Alkali resistance

Color

Natural color

Chemical Media Resistance

Acids

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

- ✗ Toluene (23°C)

Ketones

- ✗ Acetone (23°C)

Mineral oils

- ✗ SAE 10W40 multigrade motor oil (130°C)
- ✗ SAE 80/90 hypoid-gear oil (130°C)
- ✗ Motor oil OS206 304 Ref.Eng.Oil, ISP (135°C)
- ✗ Automatic hypoid-gear oil Shell Donax TX (135°C)
- ✗ Hydraulic oil Pentosin CHF 202 (125°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)

Other

- ✗ DOT No. 4 Brake fluid (130°C)
- ✗ DOT No. 4 Brake fluid (120°C)
- ✓ Water (23°C)
- ✓ Deionized water (90°C)

Rheological calculation properties

	dry	Unit	Test Standard
Density of melt	63.1	lb/ft ³	-
Thermal conductivity of melt	1.73	BTU in/(hr ft ² °F)	-
Spec. heat capacity of melt	0.616	BTU/(lb·F)	-
Min. mold temperature	140	°F	-
Max. mold temperature	212	°F	-
Min. melt temperature	536	°F	-
Max. melt temperature	590	°F	-