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 acides, 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

Processing
Injection molding

Delivery form
Pellets, Granules

Resistance to
Heat (thermal stability), Hydrolysis / hot water

Conformity
Automotive

Additives
Glass fibers

Mechanical properties ISO	dry	Unit	Test Standard
Tensile modulus	**6100**	MPa	ISO 527
Tensile strength	**108**	MPa	ISO 527

Stress at break	**108**	MPa	ISO 527
Strain at break, B	**3.5**	%	ISO 527
Charpy impact strength, +23°C	**49**	kJ/m²	ISO 179/1eU
Type of failure	**C**	-	-
Charpy notched impact strength, +23°C	**13**	kJ/m²	ISO 179/1eA
Type of failure	**C**	-	-

Thermal properties	**dry**	**Unit**	**Test Standard**
Temp. of deflection under load A, 1.80 MPa	**165**	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	**170**	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	**180**	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	**170**	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	**40**	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	**30**	E-6/K	ISO 11359-1/-2

Physical properties	**dry**	**Unit**	**Test Standard**
Density	**1190**	kg/m³	ISO 1183
Density	**1190**	kg/m³	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	**1.6**	mm	-
Burning behav. at thickness h	**HB**	class	IEC 60695-11-10
Thickness tested	**0.8**	mm	-

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 per square	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	**29**	kV/mm	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	**80**	°C	-
Melt temperature	**320**	°C	-

Test specimen production	**dry**	**Unit**	**Test Standard**
Injection Molding, melt temperature	**300**	°C	ISO 294
Injection Molding, mold temperature	**80**	°C	ISO 294
Injection Molding, injection velocity	**200**	mm/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	**1010**	kg/m³	-
Thermal conductivity of melt	**0.25**	W/(m K)	-
Spec. heat capacity of melt	**1640**	J/(kg K)	-
Min. mold temperature	**60**	°C	-
Max. mold temperature	**100**	°C	-
Min. melt temperature	**280**	°C	-
Max. melt temperature	**310**	°C	-