CAMPUS® Datasheet

VESTODUR® X7212 nc (nf) - PBT-GF45 FR(17)
Evonik Industries AG

Product Texts

VESTODUR® X7212 nc

Resin: ISO 7792-PBT,MFHR, A10-14,GF45

UL recognition: UL 94:V-0, all colors, UL 746B: RTI=140/140/140°C

VESTODUR® X7212 is a glass fiber rein-forced (45 %), semicrystalline thermoplastic compound for injection molding, based on polybutylene terephthalate (PBT). The self-extinguishing compound has a creamy-white colour.
VESTODUR® X7212 is used for parts of high mechanical and thermal resistance. Test bars made of the compound are rated V-0 self-extinguishing according to UL94 by Underwriters Laboratories Inc. The incorporated flame retardant is non-migrating. The additive has no corrosive effects on metal inserts or neighboring metal parts. Therefore, the compound is distinguished for moldings in the electrical and electronical industry. Laser marking with high contrasts is possible.

Rheological properties	Value	Unit	Test Standard
Melt volume-flow rate, MVR	**8**	cm³/10min	ISO 1133
Temperature	**250**	°C	ISO 1133
Load	**2.16**	kg	ISO 1133
Molding shrinkage, parallel	**0.2**	%	ISO 294-4, 2577
Molding shrinkage, normal	**1.3**	%	ISO 294-4, 2577

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	**15500**	MPa	ISO 527-1/-2
Stress at break	**150**	MPa	ISO 527-1/-2
Strain at break	**1.5**	%	ISO 527-1/-2
Charpy impact strength, +23°C	**45**	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	**45**	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C	**12**	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	**12**	kJ/m²	ISO 179/1eA

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	**223**	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	**45**	°C	ISO 11357-1/-2
Temp. of deflection under load, 1.80 MPa	**217**	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	**223**	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	**215**	°C	ISO 306
Coeff. of linear therm. expansion, parallel	**20**	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	**40**	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm nom. thickn.	**V-0**	class	IEC 60695-11-10
Thickness tested (1.5)	**1.6**	mm	IEC 60695-11-10
Yellow Card available	**Yes**	-	-
Burning Behav. at thickness h	**V-0**	class	IEC 60695-11-10
Thickness tested (h)	**0.4**	mm	IEC 60695-11-10
Yellow Card available	**Yes**	-	-

Electrical properties	Value	Unit	Test Standard
Relative permittivity, 100Hz	**4.4**	-	IEC 60250

Relative permittivity, 1MHz	**4.6**	-	IEC 60250
Dissipation factor, 100Hz	**40**	E-4	IEC 60250
Dissipation factor, 1MHz	**130**	E-4	IEC 60250
Volume resistivity	**>1E13**	Ohm*m	IEC 60093
Surface resistivity	**1E13**	Ohm	IEC 60093
Electric strength	**30**	kV/mm	IEC 60243-1
Comparative tracking index	**275**	-	IEC 60112

Other properties	Value	Unit	Test Standard
Water absorption	**0.3**	%	Sim. to ISO 62
Density	**1840**	kg/m³	ISO 1183

Rheological calculation properties	Value	Unit	Test Standard
Density of melt	**1560**	kg/m³	-
Thermal conductivity of melt	**0.35**	W/(m K)	-
Spec. heat capacity melt	**1430**	J/(kg K)	-

Test specimen production	Value	Unit	Test Standard
Processing conditions acc. ISO	**7792**	-	ISO ....-2
Injection Molding, melt temperature	**260**	°C	ISO 294
Injection Molding, mold temperature	**80**	°C	ISO 10724
Injection Molding, injection velocity	**200**	mm/s	ISO 294
Injection Molding, pressure at hold	**70**	MPa	ISO 294

Characteristics

Processing
Injection Molding

Delivery form
Pellets

Additives
Release agent

Special Characteristics
Light stabilized or stable to light, Heat stabilized or stable to heat

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

Other text information

Injection molding

PREPROCESSING INFORMATION
Maximum Water Content: 0.05 %
When the indicated water content is exceeded, the resin must be dried. The drying time is dependent on the drying temperature. We recommend a drying time of approximately 5 hours at a temperature of 120°C in a fresh air dryer, better yet would be a dry air or vacuum dryer.

PROCESSING INFORMATION

Melt Temperature:	240 - 280	°C
Mold Temperature:	50 - 120	°C

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

- Ammonium Hydroxide solution (10% by mass) (23°C)

Alcohols

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

Hydrocarbons

- iso-Octane (23°C)

Ketones

- Acetone (23°C)

Ethers

- Diethyl ether (23°C)

Mineral oils

- SAE 10W40 multigrade motor oil (23°C)
- Insulating Oil (23°C)

Standard Fuels

- Standard fuel without alcohol (pref. ISO 1817 Liquid C) (23°C)
- Diesel fuel (pref. ISO 1817 Liquid F) (23°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)

Other

- Ethyl Acetate (23°C)
- Hydrogen peroxide (23°C)
- Water (23°C)

All listed technical data are typical values intended for your guidance. They are given without obligation and do not constitute a materials specification. Should you have any further questions concerning material behavior or properties, please contact us at the following address :

for PA: Evonik Resource Efficiency GmbH
RE-HP-IM-TAQ-PT
Gebäude 1227 / PB 16
D-45764 Marl
Phone: +49-(0)2365/49-2720
Fax:+49-(0)2365/49-2070
E-Mail: campusplastics@evonik.com

for PMMA: Evonik Performance Materials GmbH
Marketing / Campus
Kirschenallee

D-64293 Darmstadt
Germany
Phone: +49 - (0) 61 51 / 18-47 11
Fax: +49 - (0) 61 51 / 18-31 77
E-Mail: campusplastics@evonik.com Internet: http://www.plexiglas-polymers.com