

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 | cm ³ /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/m ² | ISO 179/1eU |
| Charpy impact strength, -30°C | 45 | 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 | 12 | kJ/m ² | 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 |

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| | | | |
|---|--------------|-------------------|----------------------|
| 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/m ³ | ISO 1183 |
| Rheological calculation properties | Value | Unit | Test Standard |
| Density of melt | 1560 | kg/m ³ | - |
| 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)

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☺ 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
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