

Product Information

**VESTODUR® X9400**

**GLASS FIBER-REINFORCED, MODIFIED POLYBUTYLENE TEREPHTHALATE COMPOUND WITH DECREASED SHRINKAGE**



**VESTODUR® X9400 NC** is a 10% glass fiber-reinforced, polymer-modified polybutylene terephthalate compound. Moldings of this compound show decreased shrinkage.

The compound is suitable for parts that are subjected to high mechanical or thermal loads. Compared with commonly used glass fiber-reinforced PBT compounds with similar stiffness parts of VESTODUR® X9400 have in particular a high surface quality.

VESTODUR® X9400 is supplied as cylindrical pellets in polyethylene packaging.

For information, please follow the general recommendations in our flyer "VESTODUR® Polybutylene terephthalate - Compounds".

The use of colorants may affect property values.

Inside the original and undamaged packaging, the product has a shelf life of at least 2 years when stored in dry rooms at temperatures not exceeding 30°C.

**Key Features**

**Industrial Sector**  
Industry and Engineering

**Processing**  
Injection molding

**Delivery form**  
Pellets, Granules

**Resistance to**  
Heat (thermal stability)

**Additives**  
Glass fibers

**Mechanical properties ISO**

Tensile modulus

**dry**

**4500**

**Unit**

MPa

**Test Standard**

ISO 527

Tensile strength

**103**

MPa

ISO 527

Yield stress	<b>103</b>	MPa	ISO 527
Yield strain	<b>4</b>	%	ISO 527
Stress at break	<b>102</b>	MPa	ISO 527
Nominal strain at break, tB	<b>4</b>	%	ISO 527
Charpy impact strength, +23°C	<b>50</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Type of failure	<b>C</b>	-	-
Charpy impact strength, -30°C	<b>45</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Type of failure	<b>C</b>	-	-
Charpy notched impact strength, +23°C	<b>5</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C</b>	-	-
Charpy notched impact strength, -30°C	<b>5</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Type of failure	<b>C</b>	-	-
Flexural modulus, 23°C	<b>3950</b>	MPa	ISO 178
Flexural stress at conv. deflection, 23°C	<b>130</b>	MPa	ISO 178
Flexural strength, 23°C	<b>147</b>	MPa	ISO 178
Flexural strain at flexural strength, 23°C	<b>5.3</b>	%	ISO 178
Flexural stress at break, 23°C	<b>141</b>	MPa	ISO 178
Flexural strain at break, 23°C	<b>6.1</b>	%	ISO 178

<b>Thermal properties</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Melting temperature	<b>218</b>	°C	ISO 11357-1/-3
Glass transition temperature, DSC	<b>66</b>	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	<b>110</b>	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	<b>200</b>	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	<b>221</b>	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	<b>179</b>	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	<b>30</b>	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	<b>40</b>	E-6/K	ISO 11359-1/-2

# VESTODUR®

Melting Temperature	<b>218</b>	°C	ASTM D 3418
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Physical properties	dry	Unit	Test Standard
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Density	<b>1350</b>	kg/m <sup>3</sup>	ISO 1183
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Density	<b>1350</b>	kg/m <sup>3</sup>	ASTM D 792
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Burning Behav.	dry	Unit	Test Standard
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Burning behav. at 1.5 mm nom. thickn.	<b>HB</b>	class	IEC 60695-11-10
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Thickness tested	<b>1.6</b>	mm	-
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Rheological properties	dry	Unit	Test Standard
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Molding shrinkage, parallel	<b>0.3</b>	%	ISO 294-4, 2577
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Molding shrinkage, normal	<b>0.4</b>	%	ISO 294-4, 2577
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Mold temperature	<b>80</b>	°C	-
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Melt temperature	<b>260</b>	°C	-
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Test specimen production	dry	Unit	Test Standard
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Processing conditions acc. ISO	<b>7792</b>	-	ISO ....-2
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Injection Molding, melt temperature	<b>260</b>	°C	ISO 294
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Injection Molding, mold temperature	<b>80</b>	°C	ISO 294
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Injection Molding, injection velocity	<b>200</b>	mm/s	ISO 294
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Injection Molding, pressure at hold	<b>70</b>	MPa	ISO 294
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## Characteristics

### Special Characteristics

High heat resistant, Low warpage / Low shrinkage

### Additives

Heat stabilizer

### 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 (38% 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)

<b>Rheological calculation properties</b>	<b>dry</b>	<b>Unit</b>	<b>Test Standard</b>
Min. mold temperature	<b>50</b>	°C	-
Max. mold temperature	<b>120</b>	°C	-
Min. melt temperature	<b>240</b>	°C	-
Max. melt temperature	<b>280</b>	°C	-