

VANDAR® 6000 - PBT

Description

Vandar 6000 is a toughened polyester alloy with excellent cold temperature impact resistance.

Physical properties	Value	Unit	Test Standard
Density	1200	kg/m ³	ISO 1183
Melt flow rate, MFR	9	g/10min	ISO 1133
MFR temperature	265	°C	ISO 1133
MFR load	5	kg	ISO 1133
Molding shrinkage, parallel	0.5 - 0.9	%	ISO 294-4, 2577
Molding shrinkage, normal	0.5 - 0.9	%	ISO 294-4, 2577

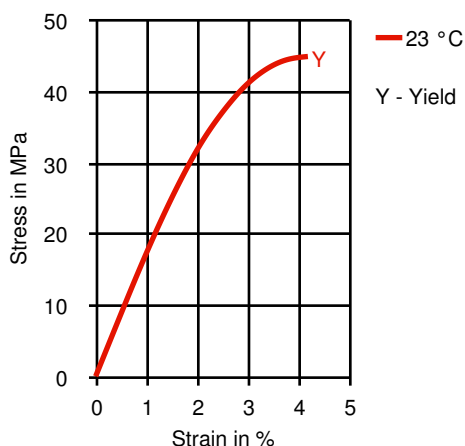
Mechanical properties	Value	Unit	Test Standard
Tensile modulus	1750	MPa	ISO 527-2/1A
Tensile stress at yield, 50mm/min	45	MPa	ISO 527-2/1A
Tensile strain at yield, 50mm/min	4.5	%	ISO 527-2/1A
Tensile nominal strain at break, 50mm/min	>50	%	ISO 527-2/1A
Tensile stress at 50% strain, 50mm/min	35	MPa	ISO 527-2/1A
Flexural modulus, 23 °C	1600	MPa	ISO 178
Flexural strength, 23 °C	55	MPa	ISO 178
Izod impact notched, 23 °C	56 ^[P]	kJ/m ²	ISO 180/1A

P: Partial Break

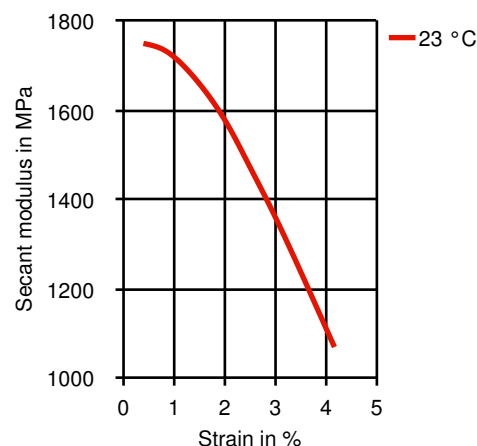
Thermal properties	Value	Unit	Test Standard
Glass transition temperature, 10 °C/min	78	°C	ISO 11357-1,-2,-3
DTUL at 1.8 MPa	74	°C	ISO 75-1, -2
DTUL at 0.45 MPa	106	°C	ISO 75-1, -2
Coeff. of linear therm expansion, parallel	0.9	E-4/°C	ISO 11359-2

Diagrams

Stress-strain



Secant modulus-strain



Typical injection moulding processing conditions

Pre Drying	Value	Unit	Test Standard
Necessary low maximum residual moisture content	0.02	%	-
Drying time	4	h	-
Drying temperature	120 - 130	°C	-

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Temperature	Value	Unit	Test Standard
Hopper temperature	20 - 50	°C	-
Feeding zone temperature	240 - 255	°C	-
Zone1 temperature	240 - 255	°C	-
Zone2 temperature	250 - 260	°C	-
Zone3 temperature	250 - 260	°C	-
Zone4 temperature	255 - 265	°C	-
Nozzle temperature	260 - 270	°C	-
Melt temperature	260 - 280	°C	-
Mold temperature	65 - 96	°C	-
Hot runner temperature	260 - 280	°C	-
Speed	Value	Unit	Test Standard
Injection speed	medium-fast	-	-
Other	Value	Unit	Test Standard
Specimen thickness (shrinkage)	3.18	mm	Internal

Other text information

Pre-drying

To avoid hydrolytic degradation during processing, Vandar resins have to be dried to a moisture level equal to or less than 0.02%. Drying should be done in a dehumidifying hopper dryer capable of dewpoints <-40°F (-40°C) at 250°F (121°C) for 4 hours.

Longer pre-drying times/storage

For subsequent storage of the material in the dryer until processed (<= 60 h) it is necessary to lower the temperature to 100° C.

Injection molding

Rear Temperature 470-490(240-255) deg F (deg C)
Center Temperature 480-500(250-260) deg F (deg C)
Front Temperature 490-510(255-265) deg F (deg C)
Nozzle Temperature 500-520(260-270) deg F (deg C)
Melt Temperature 500-540(260-280) deg F (deg C)
Mold Temperature 100-250(40-120) deg F (deg C)
Back Pressure 0-100 psi
Screw Speed 60-125 rpm
Injection Speed Medium/Fast

Injection speed, injection pressure and holding pressure have to be optimized to the individual article geometry. To avoid material degradation during processing low back pressure and minimum screw speed have to be used. Overheating of the material has to be avoided, in particular for flame retardant grades. Up to 25% clean and dry regrind may be used.

Characteristics

Product Categories

Impact modified, Unfilled

Delivery Form

Pellets

Processing

Injection molding