Celanese
The chemistry inside innovation™

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/m³	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

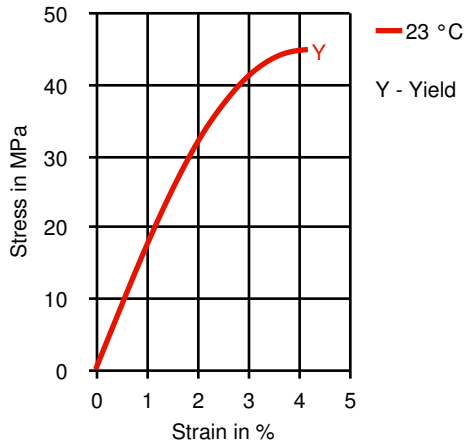
Mechanical properties	Value	Unit	Test Standard
Tensile modulus	**1750**	MPa	ISO 527-2/1A
Tensile stress at yield, 50mm/min	**45**	MPa	ISO 527-2/1A
Tensile strain at yield, 50mm/min	**4.5**	%	ISO 527-2/1A
Tensile nominal strain at break, 50mm/min	**>50**	%	ISO 527-2/1A
Tensile stress at 50% strain, 50mm/min	**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/m²	ISO 180/1A

P: Partial Break

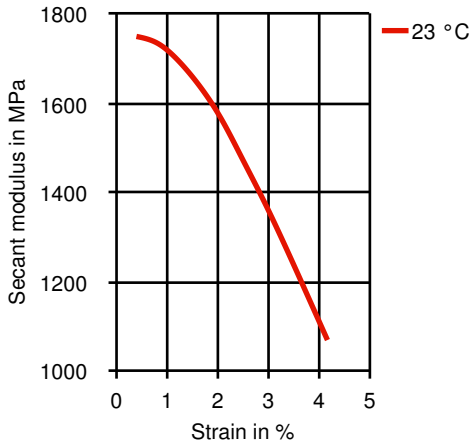
Thermal properties	Value	Unit	Test Standard
Glass transition temperature, 10°C/min	**78**	°C	ISO 11357-1,-2,-3
DTUL at 1.8 MPa	**74**	°C	ISO 75-1, -2
DTUL at 0.45 MPa	**106**	°C	ISO 75-1, -2
Coeff. of linear therm expansion, parallel	**0.9**	E-4/°C	ISO 11359-2

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