Celanese
The chemistry inside innovation™

VANDAR® 2500 - PBT

Description

Vandar 2500 is an unfilled polyester alloy which exhibits excellent toughness and impact strength. It is specially designed to offer excellent chemical resistance, good colorability and dimensional stability.

Physical properties	Value	Unit	Test Standard
Density	**1250**	kg/m³	ISO 1183
Melt flow rate, MFR	**13**	g/10min	ISO 1133
MFR temperature	**250**	°C	ISO 1133
MFR load	**5**	kg	ISO 1133
Molding shrinkage, parallel	**1.7 - 2.2**	%	ISO 294-4, 2577
Molding shrinkage, normal	**1.7 - 2.2**	%	ISO 294-4, 2577
Water absorption, 23°C-sat	**0.45**	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	**1450**	MPa	ISO 527-2/1A
Tensile stress at yield, 50mm/min	**35**	MPa	ISO 527-2/1A
Tensile strain at yield, 50mm/min	**5**	%	ISO 527-2/1A
Tensile nominal strain at break, 50mm/min	**>50**	%	ISO 527-2/1A
Flexural modulus, 23°C	**1500**	MPa	ISO 178
Flexural strength, 23°C	**50**	MPa	ISO 178
Charpy impact strength, 23°C	**203**	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	**168**	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	**88**	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	**9**	kJ/m²	ISO 179/1eA
Izod impact notched, 23°C	**NB**	kJ/m²	ISO 180/1A
Rockwell hardness (M-Scale)	**104**	M-Scale	ISO 2039-2

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	**225**	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	**70**	°C	ISO 11357-1,-2,-3
DTUL at 1.8 MPa	**50**	°C	ISO 75-1, -2
DTUL at 0.45 MPa	**125**	°C	ISO 75-1, -2
Coeff. of linear therm expansion, parallel	**1.3**	E-4/°C	ISO 11359-2
Coeff. of linear therm expansion, normal	**1.34**	E-4/°C	ISO 11359-2

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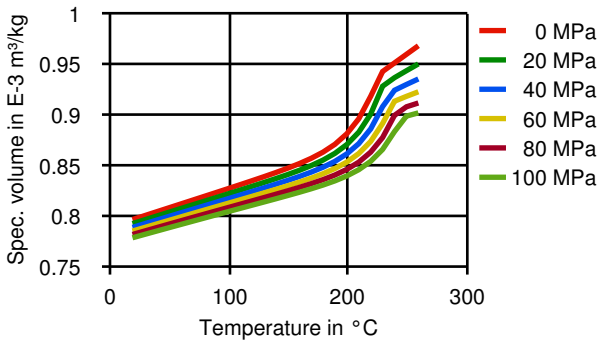
Diagrams

Moldflow Specific volume-temperature (pvT)



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	-
Temperature	**Value**	**Unit**	**Test Standard**
Hopper temperature	**20 - 50**	°C	-
Feeding zone temperature	**230 - 240**	°C	-
Zone1 temperature	**230 - 240**	°C	-
Zone2 temperature	**235 - 250**	°C	-
Zone3 temperature	**235 - 250**	°C	-
Zone4 temperature	**240 - 260**	°C	-
Nozzle temperature	**240 - 260**	°C	-
Melt temperature	**235 - 260**	°C	-
Mold temperature	**65 - 96**	°C	-
Hot runner temperature	**250 - 260**	°C	-
Speed	**Value**	**Unit**	**Test Standard**
Injection speed	**medium-fast**	-	-

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 450-480(230-250) deg F (deg C)
Center Temperature 460-490(235-255) deg F (deg C)
Front Temperature 470-500(240-260) deg F (deg C)
Nozzle Temperature 470-510(240-265) deg F (deg C)
Melt Temperature 470-510(240-265) deg F (deg C)
Mold Temperature 100-200(40-95 deg F (deg C)
Back Pressure 0-50 psi
Screw Speed Moderate
Injection Speed 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.

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Characteristics

Product Categories	Delivery Form
Impact modified, Unfilled	Pellets
Processing	**Additives**
Injection molding	Lubricants