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VANDAR® 2100UV

unreinforced high impact resistant PBT alloy/blend; good low temperature properties; UV stable colors
Vandar 2100UV is a polyester alloy designed to offer maximum impact strength at room and low temperatures. This unfilled compound is characterized by outstanding chemical resistance, dimensional stability, paintability, and toughness. Vandar 2100UV is available in UV stable colors.

Product information

Part Marking Code	PBT-HI		ISO 11469

Rheological properties

Moulding shrinkage range, parallel	1.7 - 2.2	%	ISO 294-4, 2577
Moulding shrinkage range, normal	1.7 - 2.2	%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	1750	MPa	ISO 527-1/-2
Yield stress, 50mm/min	38	MPa	ISO 527-1/-2
Yield strain, 50mm/min	4.4	%	ISO 527-1/-2
Stress at 50% strain	26	MPa	ISO 527-1/-2
Stress at break, 50mm/min	29	MPa	ISO 527-1/-2
Nominal strain at break	>50	%	ISO 527-1/-2
Flexural Modulus	1670	MPa	ISO 178
Flexural Strength	47	MPa	ISO 178
Charpy impact strength, 23°C	NB	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	NB	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	80	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	19	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	NB	kJ/m²	ISO 180/1A
Hardness, Rockwell, M-scale	38		ISO 2039-2

Thermal properties

Melting temperature, 10°C/min	225	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	60	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	51	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	86	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	130	E-6/K	ISO 11359-1/-2

Flammability

Burning Behav. at thickness h	HB	class	UL 94
Thickness tested	1.60	mm	UL 94

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Electrical properties

Relative permittivity, 100Hz	4		IEC 62631-2-1
Relative permittivity, 1MHz	3.6		IEC 62631-2-1
Dissipation factor, 100Hz	70	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	200	E-4	IEC 62631-2-1
Volume resistivity	1E12	Ohm.m	IEC 62631-3-1
Surface resistivity	1E14	Ohm	IEC 62631-3-2
Electric strength	24	kV/mm	IEC 60243-1

Other properties

Humidity absorption, 2mm	0.2	%	Sim. to ISO 62
Water absorption, 2mm	0.45	%	Sim. to ISO 62
Density	1220	kg/m³	ISO 1183

Injection

Drying Temperature	120 - 130	°C
Drying Time, Dehumidified Dryer	4	h
Processing Moisture Content	0.02	%
Max. mould temperature	65 - 96	°C
Injection speed	medium-fast	

Additional information

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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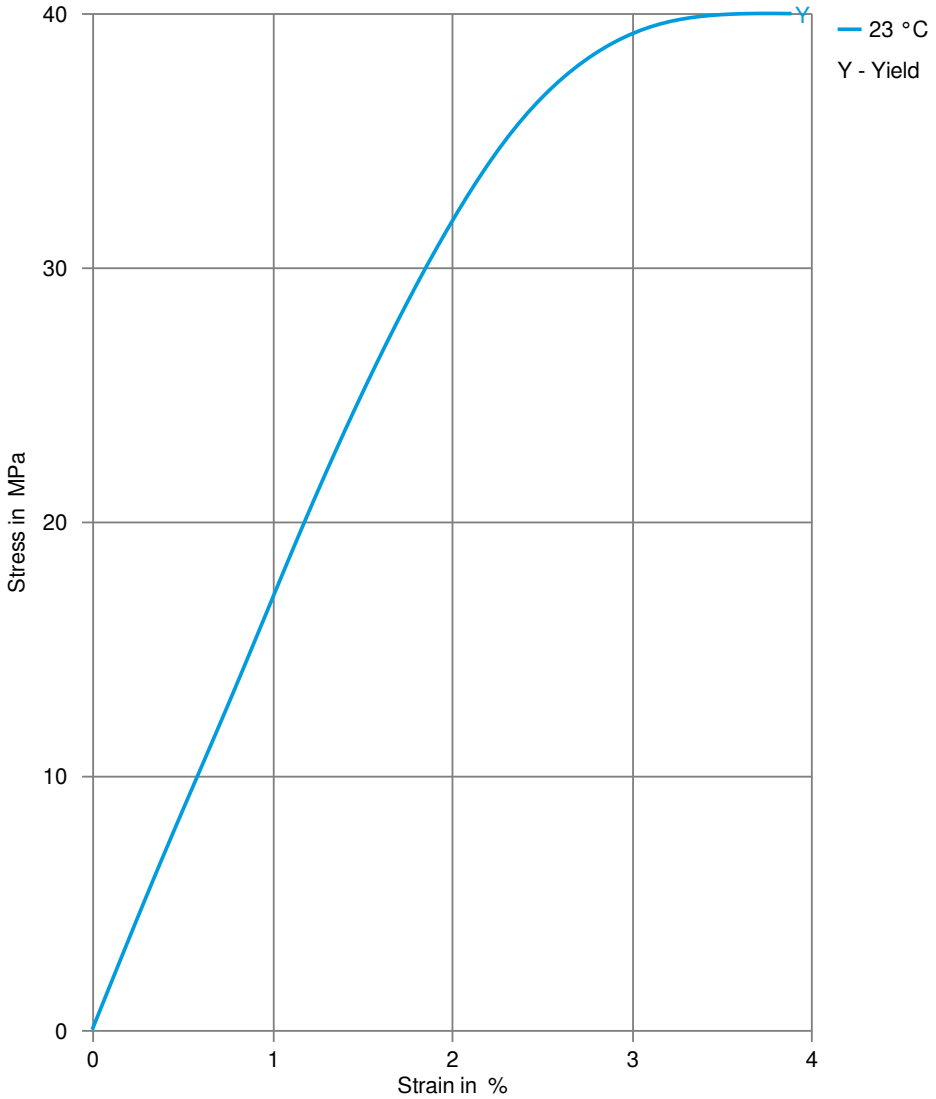
Stress-strain



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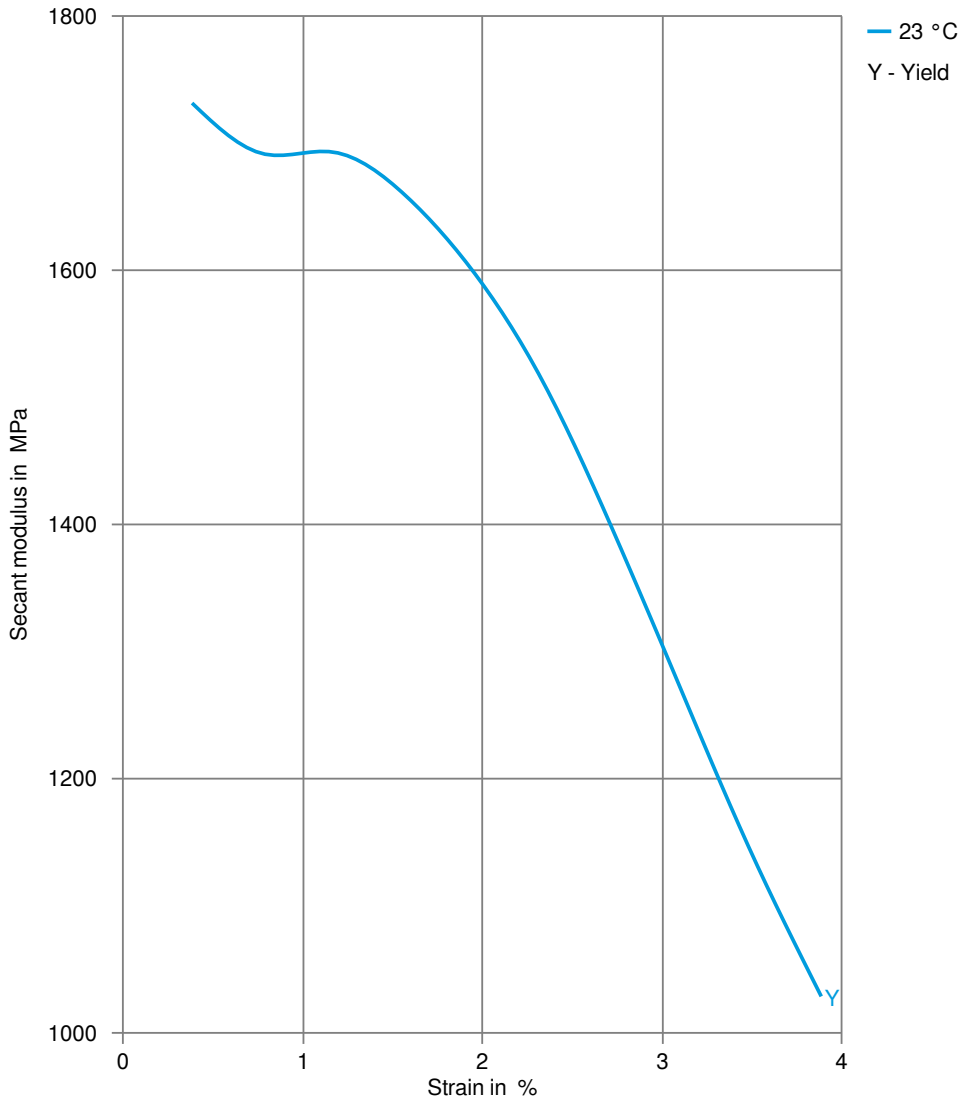
Secant modulus-strain



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Processing Texts

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.
Injection molding Preprocessing	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 <-30°F (-34°C) at 250°F (121°C) for 4 hours.