

Vandar® 4612R

Polybutylene Terephthalate

Celanese Corporation

Message:

Vandar 4612R is a high impact polyester alloy containing 7% glass. It possesses excellent impact properties as well as toughness and moldability. Dimensional stability, chemical resistance, and low moisture absorption are other key features.

General Information			
Filler / Reinforcement	Glass fiber reinforced material, 7.0% filler by weight		
Features	Good dimensional stability		
	Low hygroscopicity		
	Impact resistance, high		
	Impact resistance, good		
	Good formability		
	Good chemical resistance		
	Good toughness		
RoHS Compliance	Contact manufacturer		
Multi-Point Data	Isothermal Stress vs. Strain (ISO 11403-1)		
	Shear Modulus vs. Temperature (ISO 11403-1)		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.30	g/cm ³	ASTM D792, ISO 1183
Melt Volume-Flow Rate (MVR) (250°C/5.0 kg)	8.50	cm ³ /10min	ISO 1133
Molding Shrinkage			
Flow	0.60 - 0.80	%	ASTM D955
Vertical flow direction	1.2 - 1.4	%	ISO 294-4
Flow direction	0.60 - 0.80	%	ISO 294-4
Water Absorption (Equilibrium, 23°C, 50% RH)	0.20	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (M-Scale)	111		ISO 2039-2
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	2800	MPa	ISO 527-2/1A/1
Tensile Strength			
Yield, 23°C	49.6	MPa	ASTM D638
Yield	50.0	MPa	ISO 527-2/1A/50
Fracture	45.0	MPa	ISO 527-2/1A/5
Tensile Strain			
Yield	4.0	%	ISO 527-2/1A/50

Fracture, 23°C	8.0	%	ASTM D638
Nominal Tensile Strain at Break	6.0	%	ISO 527-2/1A/50
Flexural Modulus (23°C)	2700	MPa	ISO 178
Flexural Stress (23°C)	75.0	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-30°C	5.0	kJ/m ²	ISO 179/1eA
23°C	14	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength			ISO 179/1eU
-30°C	50	kJ/m ²	ISO 179/1eU
23°C	60	kJ/m ²	ISO 179/1eU
Notched Izod Impact (23°C)	13	kJ/m ²	ISO 180/1A
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, not annealed	200	°C	ISO 75-2/B
0.45 MPa, annealed	193	°C	ASTM D648
1.8 MPa, not annealed	76.7	°C	ASTM D648
1.8 MPa, not annealed	92.0	°C	ISO 75-2/A
Glass Transition Temperature ¹	60.0	°C	ISO 11357-2
Vicat Softening Temperature	170	°C	ISO 306/B50
Melting Temperature ²	225	°C	ISO 11357-3, ASTM D3418
Linear thermal expansion coefficient			ISO 11359-2
Flow	4.0E-5	cm/cm/°C	ISO 11359-2
Lateral	1.4E-4	cm/cm/°C	ISO 11359-2
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+14	ohms	IEC 60093
Volume Resistivity			
--	1.0E+15	ohms · cm	ASTM D257
--	> 1.0E+14	ohms · cm	IEC 60093
Dielectric Strength	26	kV/mm	IEC 60243-1
Dielectric Constant			
1 kHz	3.60		ASTM D150
100 Hz	4.30		IEC 60250
1 MHz	3.80		IEC 60250
Dissipation Factor			
1 kHz	4.0E-3		ASTM D150
100 Hz	6.0E-3		IEC 60250
1 MHz	0.029		IEC 60250
Arc Resistance	130	sec	ASTM D495
Comparative Tracking Index	425	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.850 mm)	HB		UL 94

Injection	Nominal Value	Unit
Drying Temperature	120 - 130	°C
Drying Time	4.0	hr
Suggested Max Moisture	0.020	%
Suggested Max Regrind	25	%
Hopper Temperature	20.0 - 50.0	°C
Rear Temperature	230 - 240	°C
Middle Temperature	235 - 250	°C
Front Temperature	235 - 250	°C
Nozzle Temperature	240 - 260	°C
Processing (Melt) Temp	235 - 260	°C
Mold Temperature	65.0 - 96.0	°C
Injection Rate	Moderate-Fast	
Back Pressure	0.00 - 0.345	MPa

Injection instructions

Manifold Temperature: 250 to 260°C Zone 4 Temperature: 240 to 260°C Feed Temperature: 230 to 240°C

NOTE

1. 10°C/min
2. 10°C/min

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