

Polycarbonate



Physical Properties	Nominal Value	Test Method
Density / Specific Gravity	1.14 to 1.26 g/cm ³	ASTM D792
Water Absorption		
24 hr	0.15 to 0.17 %	ASTM D570
24 hr, 23°C	0.15 to 0.25 %	ISO 62
Saturation	0.30 to 0.38 %	ASTM D570
Saturation, 23°C	0.050 to 0.40 %	ISO 62
Equilibrium	0.32 to 0.58 %	ASTM D570
Equilibrium, 23°C, 50% RH	0.066 to 0.18 %	ISO 62

Mechanical Properties	Nominal Value	Test Method
Tensile Modulus	1600 to 2670 MPa	ASTM D638
Tensile Strength		
Yield	55.8 to 64.2 MPa	ASTM D638
Break	54.6 to 71.1 MPa	ASTM D638
Tensile Elongation		
Yield	0.22 to 18 %	ASTM D638
Break	0.0 to 140 %	ASTM D638
Nominal Tensile Strain at Break	50 to 53 %	ISO 527-2
Tensile Creep Modulus		
1 hr	2200 MPa	ISO 899-1
1000 hr	1900 MPa	
Flexural Modulus	1960 to 2540 MPa	ASTM D790
Flexural Strength		
Yield	82.6 to 105 MPa	ASTM D790
Break	74.8 to 108 MPa	ASTM D790
Compressive Strength	60.4 to 113 MPa	ASTM D695
Coefficient of Friction	0.090 to 0.32	ASTM D1894
Taber Abrasion Resistance	9.50 to 10.1 mg	ASTM D1044
Wear Factor	-2.0 to 120 10 ⁻⁸ mm ³ /N·m	ASTM D3702

Impact Properties

Charpy Notched Impact Strength	6.8 to 81 kJ/m ²	ISO 179
Charpy Unnotched Impact Strength	38 to 300 kJ/m ²	ISO 179
Notched Izod Impact	36 to 910 J/m	ASTM D256
Notched Izod Impact (Area)	10.0 to 86.0 kJ/m ²	ASTM D256
Unnotched Izod Impact	2100 to 3200 J/m	ASTM D4812
Instrumented Dart Impact	52.7 to 87.5 J	ASTM D3763

Hardness Properties

Rockwell Hardness	69 to 124	ASTM D785
Shore Hardness	79 to 82	ISO 868

Ball Indentation Hardness	94.7 to 117 MPa	ISO 2039-1
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Thermal Properties	Nominal Value	Test Method
Deflection Temperature Under Load		
0.45 MPa, Unannealed	131 to 141 °C	ASTM D648
0.45 MPa, Annealed	142 to 146 °C	ASTM D648
1.8 MPa, Unannealed	115 to 135 °C	ASTM D648
1.8 MPa, Annealed	135 to 143 °C	ASTM D648
Continuous Use Temperature	120 to 135 °C	ASTM D794
Glass Transition Temperature		
--	143 to 146 °C	ISO 11357-2
--	145 to 148 °C	DSC
Vicat Softening Temperature		
--	132 to 157 °C	ASTM D1525
--	136 to 151 °C	ISO 306
Ball Indentation Temperature	125 °C	IEC 60598-1
Melting Temperature	140 to 232 °C	
Specific Heat	1240 to 1270 J/kg/°C	ASTM C351
Thermal Conductivity		
--	0.13 to 0.48 W/m/K	ASTM C177
--	0.17 to 0.72 W/m/K	ISO 8302
RTI Elec	78.0 to 132 °C	UL 746B
RTI Imp	79.3 to 130 °C	UL 746B
RTI Str	78.0 to 132 °C	UL 746B

Electrical Properties	Nominal Value	Test Method
Surface Resistivity	2.5 to 2.6E+17 ohms	ASTM D257
Volume Resistivity	10 to 2.5E+17 ohms-cm	ASTM D257
Dielectric Strength	14 to 31 kV/mm	ASTM D149
Dielectric Constant	2.80 to 3.20	ASTM D150
Dissipation Factor	4.0E-4 to 0.078	ASTM D150
Arc Resistance	88.7 to 120 sec	ASTM D495
Comparative Tracking Index	113 to 250 V	IEC 60112
High Amp Arc Ignition (HAI)	90.0 to 120	UL 746A
Hot-wire Ignition (HWI)	23 to 45 sec	UL 746A

Fammability Properties	Nominal Value	Test Method
Burning Rate	99 to 100 mm/min	ISO 3795
Glow Wire Flammability Index	849 to 960 °C	IEC 60695-2-12
Glow Wire Ignition Temperature	788 to 883 °C	IEC 60695-2-13
Oxygen Index		
--	25 to 37 %	ASTM D2863
--	25 to 36 %	ISO 4589-2

The information provided in this datasheet is based upon average values and is intended for guidance purposed only. Vital Parts assumes no responsibility or liability for the accuracy of the information contained on this datasheet. Product samples are available for the to determine the suitability of the product for any application.