

Polypropylene



Physical Properties	Nominal Value	Test Method
Density / Specific Gravity		
--	0.790 to 1.13 g/cm ³	ASTM D792
--	0.893 to 1.08 g/cm ³	ISO 1183
--	0.896 to 0.902 g/cm ³	ASTM D1505
Water Absorption		
24 hr	9.8E-3 to 0.031 %	ASTM D570
24 hr, 23°C	0.010 to 0.10 %	ISO 62
Saturation	0.010 to 0.062 %	ASTM D570
Equilibrium	0.092 to 0.10 %	ASTM D570
Equilibrium, 23°C, 50% RH	0.010 to 0.10 %	ISO 62
Moisture Content	988 to 1025 ppm	

Mechanical Properties	Nominal Value	Test Method
Tensile Modulus	248 to 2770 MPa	ASTM D638
Tensile Strength		
Yield	19.7 to 39.3 MPa	ASTM D638
Break	16.7 to 44.0 MPa	ASTM D638
Tensile Elongation		
Yield	0.75 to 13 %	ASTM D638
Break	2.0 to 510 %	ASTM D638
Flexural Modulus		
--	172 to 1820 MPa	ASTM D790
--	784 to 2950 MPa	ISO 178
Flexural Strength		
--	24.7 to 54.5 MPa	ASTM D790
--	5.00 to 84.8 MPa	ISO 178
Coefficient of Friction	0.20 to 0.25	ASTM D1894

Elastical Properties	Nominal Value	Test Method
Tensile Stress	0.100 to 6.30 MPa	
100% Strain		ASTM D412
300% Strain	0.300 to 8.00 MPa	
Tensile Strength (Break)	3.57 to 15.9 MPa	ASTM D412
Tensile Elongation (Break)	320 to 510 %	ASTM D412
Tear Strength	9.93 to 170 kN/m	ASTM D624

Impact Properties	Nominal Value	Test Method
Charpy Notched Impact Strength	1.0 to 13 kJ/m ²	ISO 179
Charpy Unnotched Impact Strength	6.7 to 91 kJ/m ²	ISO 179
Notched Izod Impact		
--	7.5 to 130 J/m	ASTM D256

--	1.0 to 16 kJ/m ²	ISO 180
Notched Izod Impact (Area)	2.98 to 6.93 kJ/m ²	ASTM D256
Unnotched Izod Impact		
--	29 to 110 J/m	ASTM D4812
--	7.3 to 98 kJ/m ²	ISO 180

Hardness Properties

Rockwell Hardness		
--	74 to 106	ASTM D785
--	74 to 113	ISO 2039-2
Durometer Hardness		
--	40 to 98	ASTM D2240
--	39 to 78	ISO 868

Thermal Properties	Nominal Value	Test Method
Deflection Temperature Under Load		
0.45 MPa, Unannealed	76.9 to 141 °C	ASTM D648
0.45 MPa, Unannealed	72.5 to 131 °C	ISO 75-2/B
0.45 MPa, Annealed	80.0 to 130 °C	ASTM D648
1.8 MPa, Unannealed	47.3 to 106 °C	ASTM D648
1.8 MPa, Unannealed	45.0 to 164 °C	ISO 75-2/A
Continuous Use Temperature	74.5 to 90.3 °C	ASTM D794
Vicat Softening Temperature		
--	79.7 to 157 °C	ASTM D1525
--	69.4 to 156 °C	ISO 306
Melting Temperature		
--	159 to 182 °C	DSC
--	130 to 165 °C	ISO 3146
--	158 to 168 °C	ISO 11357-3
--	150 to 163 °C	ASTM D3418
Thermal Conductivity		
--	0.12 to 0.62 W/m/K	ASTM C177
--	0.20 to 0.22 W/m/K	ISO 8302
RTI Elec	65.0 to 115 °C	UL 746B
RTI Imp	65.0 to 121 °C	UL 746B
RTI Str	64.1 to 121 °C	UL 746B

Electrical Properties	Nominal Value	Test Method
Surface Resistivity		
--	1.0E+2 to 2.5E+16 ohms	ASTM D257
--	1.0E+2 to 1.3E+16 ohms	IEC 60093
--	1.0E+4 to 1.1E+14 ohms	IEC 62631-3-2
Volume Resistivity		
--	1.0 to 1.1E+16 ohms-cm	ASTM D257
--	5.0 to 5.8E+16 ohms-cm	IEC 60093
Dielectric Strength		

--	15 to 41 kV/mm	ASTM D149
--	18 to 51 kV/mm	IEC 60243-1
Dielectric Constant		
--	2.29 to 2.31	ASTM D150
--	2.26 to 2.41	IEC 60250
--	2.3	IEC 60250
Dissipation Factor		
--	2.8E-4 to 3.2E-3	ASTM D150
--	1.9E-4 to 2.6E-3	IEC 60250
Arc Resistance	129 to 192 sec	ASTM D495
Comparative Tracking Index (CTI)	600 V	UL 746A
Comparative Tracking Index	581 to 603 V	IEC 60112
High Amp Arc Ignition (HAI)	196 to 200	UL 746A
High Voltage Arc Tracking Rate (HVTR)	0.00 to 0.324 mm/min	UL 746A
Hot-wire Ignition (HWI)	6.0 to 56 sec	UL 746A

Fammability Properties	Nominal Value	Test Method
Glow Wire Flammability Index	850 to 960 °C	IEC 60695-2-12
Glow Wire Ignition Temperature	772 to 960 °C	IEC 60695-2-13
Oxygen Index		
--	28 to 34 %	ASTM D2863
--	24 to 29 %	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.

