Generic PP, Unspecified

Polypropylene

Generic

Message:

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General Information			
Physical	**Nominal Value**	**Unit**	**Test Method**
Specific Gravity			
--	0.793 - 1.14	g/cm³	ASTM D792
23°C	0.800 - 1.12	g/cm³	ISO 1183
--	903	kg/m³	ISO 1183 [1]
--	0.897 - 0.916	g/cm³	ASTM D1505
Melt Mass-Flow Rate (MFR)			
230°C/2.16 kg	0.10 - 33	g/10 min	ASTM D1238
230°C/2.16 kg	0.10 - 26	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR)			
230°C/2.16 kg	2.00 - 41.2	cm³/10min	ISO 1133
--	20.4	cm³/10min	ISO 1133 [2]
Molding Shrinkage			
Flow: 23°C	0.75 - 2.0	%	ASTM D955
Transverse flow: 23°C	0.71 - 3.0	%	ASTM D955
23°C	1.4E-3 - 2.4	%	ISO 294-4
Water Absorption			
23°C, 24 hr	1.0E-3 - 0.043	%	ASTM D570
23°C, 24 hr	0.027 - 0.10	%	ISO 62
Saturated, 23°C	0.010 - 0.060	%	ASTM D570
Equilibrium, 23°C	0.030 - 0.062	%	ASTM D570
Equilibrium, 23°C, 50% RH	7.9E-3 - 0.012	%	ISO 62
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness			
23°C	74 - 106		ASTM D785
23°C	74 - 110		ISO 2039-2
Durometer Hardness			
23°C	54 - 98		ASTM D2240
23°C	48 - 100		ISO 868
Ball Indentation Hardness	28.0 - 37.3	MPa	ISO 2039-1
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus			

23°C	896 - 2140	MPa	ASTM D638
23°C	825 - 1810	MPa	ISO 527-2
--	1230	MPa	ISO 527-2 [3]
Tensile Strength			
Yield, 23°C	15.7 - 39.1	MPa	ASTM D638
Yield, 23°C	16.6 - 36.8	MPa	ISO 527-2
Yield	25.7	MPa	ISO 527-2 [4]
Fracture, 23°C	17.3 - 44.9	MPa	ASTM D638
Fracture, 23°C	11.4 - 36.7	MPa	ISO 527-2
23°C	15.0 - 36.2	MPa	ASTM D638
Tensile Elongation			
Yield, 23°C	0.75 - 13	%	ASTM D638
Yield, 23°C	1.8 - 17	%	ISO 527-2
Yield	8.5	%	ISO 527-2 [5]
Fracture, 23°C	2.0 - 520	%	ASTM D638
Fracture, 23°C	1.0 - 400	%	ISO 527-2
Tensile Elongation at Break	49 - 50	%	ISO 527-2 [6]
Apparent Bending Modulus (23°C)	825 - 840	MPa	ASTM D747
Flexural Modulus			
23°C	693 - 2330	MPa	ASTM D790
23°C	557 - 2300	MPa	ISO 178
Flexural Strength			
23°C	23.8 - 48.4	MPa	ASTM D790
23°C	19.5 - 52.1	MPa	ISO 178
Yield, 23°C	26.6 - 48.9	MPa	ASTM D790
Coefficient of Friction	0.39 - 0.71		ASTM D1894

Films	Nominal Value	Unit	Test Method
Film Thickness - Tested	15 - 79000	µm	
Tensile Strength			
MD: Yield	0.588 - 34.5	MPa	ASTM D882
TD: Yield	1.37 - 27.5	MPa	ASTM D882
23°C	23.0 - 120	MPa	ISO 527-3
Tensile Elongation			
MD: Fracture	140 - 520	%	ASTM D882
TD: Fracture	49 - 92	%	ASTM D882
Fracture, 23°C	20 - 900	%	ISO 527-3
Seal Initiation Temperature	102 - 122	°C	

Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			
23°C	1.3 - 14	kJ/m^2	ISO 179
-30°C	19.5	kJ/m^2	ISO 179/1eA [7]
23°C	4.57	kJ/m^2	ISO 179/1eA [8]

Charpy Unnotched Impact Strength			
23°C	1.0 - 25	kJ/m²	ISO 179
-30°C	101	kJ/m²	ISO 179/1eU [9]
Notched Izod Impact			
23°C	7.5 - 92	J/m	ASTM D256
23°C	2.0 - 12	kJ/m²	ISO 180
Unnotched Izod Impact			
23°C	6.0 - 860	J/m	ASTM D256
23°C	8.0 - 60	kJ/m²	ISO 180
Multi-Axial Instrumented Impact Energy (23°C)	0.900 - 35.0	J	ISO 6603-2
Dart Drop Impact (23°C)	0.366 - 16.3	J	ASTM D3029
Dart Drop Impact (23°C)	0.452 - 21.5	J	ASTM D5420
Tensile notched impact strength (23°C)	65.1	kJ/m²	ISO 8256/1 [10]
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			
0.45 MPa, not annealed	77.5 - 145	°C	ASTM D648
0.45 MPa, not annealed	74.8 - 116	°C	ISO 75-2/B
1.8 MPa, not annealed	47.1 - 67.7	°C	ASTM D648
1.8 MPa, not annealed	42.2 - 91.8	°C	ISO 75-2/A
1.8 MPa	54.2	°C	ISO 75-2 [11]
Vicat Softening Temperature			
--	123 - 155	°C	ASTM D1525
--	93.8 - 156	°C	ISO 306
50°C/h, B (50N)	79.3	°C	ISO 306 [12]
Melting Temperature			
--	141 - 182	°C	
--	134 - 151	°C	DSC
--	159 - 175	°C	ISO 11357-3
--	149 - 185	°C	ASTM D3418
--	130 - 166	°C	ISO 3146
-- [13]	165	°C	ISO 11357-3 [14]
Linear thermal expansion coefficient			
Flow	5.4E-5 - 1.6E-4	cm/cm/°C	ASTM D696
Flow	8.9E-5 - 1.5E-4	cm/cm/°C	ISO 11359-2
Lateral	6.4E-5 - 1.5E-4	cm/cm/°C	ISO 11359-2
Thermal Conductivity (23°C)	0.12 - 0.62	W/m/K	ASTM C177
RTI Elec	65.0 - 116	°C	UL 746
RTI Imp	65.0 - 120	°C	UL 746
RTI	65.0 - 121	°C	UL 746
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity			

--	1.0E+2 - 2.5E+15	ohms	ASTM D257
--	1.0E+2 - 1.0E+9	ohms	ASTM D4496
--	1.1E+2 - 1.0E+16	ohms	IEC 60093
--	1.0E+12 - 1.1E+14	ohms	IEC 60093 [15]
Volume Resistivity			
23°C	5.0 - 2.5E+16	ohms·cm	ASTM D257
23°C	1.0E+3 - 5.8E+16	ohms·cm	IEC 60093
Dielectric Strength			
23°C	18 - 20	kV/mm	ASTM D149
23°C	19 - 43	kV/mm	IEC 60243-1
--	49	kV/mm	IEC 60243-1 [16]
Dielectric Constant			
23°C	2.29 - 2.31		ASTM D150
23°C	2.30		IEC 60250
100 Hz	2.25		IEC 60250 [17]
1 MHz	2.05		IEC 60250 [18]
Dissipation Factor			
23°C	2.0E-4 - 3.1E-3		ASTM D150
23°C	1.0E-3 - 3.0E-3		IEC 60250
100 Hz	8.1E-4		IEC 60250 [19]
1 MHz	5.2E-3		IEC 60250 [20]
Arc Resistance	76.0 - 137	sec	ASTM D495
Comparative Tracking Index (CTI)	600	V	UL 746
Comparative Tracking Index	450 - 600	V	IEC 60112
High Amp Arc Ignition (HAI)	196 - 200		UL 746
High Voltage Arc Tracking Rate (HVTR)	0.00 - 0.324	mm/min	UL 746
Hot-wire Ignition (HWI)	6.0 - 56	sec	UL 746
Flammability	**Nominal Value**	**Unit**	**Test Method**
Glow Wire Flammability Index	849 - 960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature	743 - 960	°C	IEC 60695-2-13
Oxygen Index			
--	27 - 34	%	ASTM D2863
--	23 - 28	%	ISO 4589-2
Optical	**Nominal Value**	**Unit**	**Test Method**
Gloss	46 - 136		ASTM D2457
Haze	0.30 - 80	%	ASTM D1003
Injection	**Nominal Value**	**Unit**	
Drying Temperature	69.6 - 93.6	°C	
Drying Time	1.9 - 4.0	hr	
Suggested Max Moisture	9.4E-3 - 0.050	%	
Suggested Max Regrind	15	%	
Rear Temperature	160 - 248	°C	

Middle Temperature	179 - 222	°C
Front Temperature	189 - 248	°C
Nozzle Temperature	195 - 246	°C
Processing (Melt) Temp	190 - 231	°C
Mold Temperature	30.0 - 65.0	°C
Injection Pressure	56.9 - 86.3	MPa
Holding Pressure	4.48 - 78.5	MPa
Back Pressure	0.175 - 1.27	MPa
Screw Speed	44 - 80	rpm
Cushion	7.50 - 15.0	mm

Injection instructions

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Extrusion	Nominal Value	Unit
Drying Temperature	69.6 - 91.1	°C
Drying Time	1.5 - 3.1	hr
Cylinder Zone 1 Temp.	159 - 231	°C
Cylinder Zone 2 Temp.	170 - 260	°C
Cylinder Zone 3 Temp.	168 - 280	°C
Cylinder Zone 4 Temp.	170 - 241	°C
Cylinder Zone 5 Temp.	170 - 313	°C
Adapter Temperature	197 - 238	°C
Melt Temperature	208 - 260	°C
Die Temperature	199 - 310	°C

Extrusion instructions

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NOTE	
1.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
2.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
3.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
4.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
5.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
6.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
7.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
8.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
9.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???

10.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
11.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
12.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
13.	10 °C/min
14.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
15.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
16.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
17.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
18.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
19.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
20.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???

Recommended distributors for this material

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