

# POLYCARBONATE UV RESISTANT - ANTISHOCK

<b>ASTM AND ISO PROPERTIES</b>			
	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	<b>Test Method</b>
<b>1 - PHYSICAL</b>			
Density	1.20 g/cm <sup>3</sup>	1.20 g/cm <sup>3</sup>	ASTM D792
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	3.0 g/10 mm	3.0 g/10 mm	ASTM D1238
Water Absorption (24 hr)	0.15 %	0.15 %	ASTM D570
Water Absorption Sat.	0.34 %	0.34 %	ASTM D570
<b>2 - MECHANICAL</b>			
Tensile Modulus	330000 psi	2280 MPa	ASTM D638
Tensile Strength (Yield)	9200 psi	63.4 MPa	ASTM D638
Tensile Strength (Break)	9900 psi	68.3 MPa	ASTM D638
Tensile Elongation (Yield)	6.0 %	6.0 %	ASTM D638
Tensile Elongation (Break)	110%	110%	ASTM D638
Flexural Modulus	330000 psi	2280 MPa	ASTM D790
Flexural Strength (Yield)	12400 psi	85.5 MPa	ASTM D790
Compressive Strength	12500 psi	86.2 MPa	ASTM D695
<b>2 - IMPACT</b>			
Notched Izod Impact			ASTM D256
0.125 in (3.18 mm)	17.0 ft-lb/in	907 J/m	
0.250 in (6.35 mm)	2.20 ft-lb/in	117 J/m	
Tensile Impact Strength (0.125 in (3.18 mm))	200 ft-lb/in <sup>2</sup>	420 kJ/m <sup>2</sup>	ASTM D1822
<b>3 - HARDNESS</b>			
Rockwell Hardness			ASTM D785
M-Scale	78	78	
R-Scale	124	124	
<b>4 - THERMAL</b>			
Deflection Temperature Under Load 66 psi (0.45 MPa), Unannealed	275 °F	135 C	ASTM D648
Defiection Temperature Under Load 264 psi (1.8 MPa), Unannealed	268 °F	131 C	ASTM D648
Vicat Softening Point	307 °F	153 C	ASTM D1525
CLTE, Flow	0.000039 in/in/°F	0.000070 cm/cm/°C	ASTM D696
Specific Heat	0.280 Btu/lb/°F	1170 J/lkg/°C	ASTM C351
Thermal Conductivity	1.3 Btu in/hr/ft <sup>2</sup> /°F	0.19 W/m/K	ASTM C177
<b>5 - ELECTRICAL</b>			
Surface Resistivity	1.0E+15 ohms	1.0E+15 ohms	ASTM D257
Volume Resistivity	1.0E+16 ohm cm	1.0E+16 ohm cm	ASTM D257
Dielectric Strength	400 V/mil	400 V/mil	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	3.000	3.000	
1E+6 Hz	2.900	2.900	
Dissipation Factor			ASTM D150
60 Hz	0.00090	0.00090	
1E+6 Hz	0.0100	0.0100	
Arc Resistance (0.0625 in (1.59 mm))	120 sec	120 sec	ASTM D495

<b>6 - FLAMMABILITY</b>			
Flame Rating – UL			UL 94
0.0625 in (1.59 mm)	HB	HB	
0.125in(3.18mm)	V-2	V-2	
0.250 in (6.35 mm)	V-0	V-0	
Oxygen index	24%	24%	ASTM D2863
<b>7 – OPTICAL</b>			
Refractive index	1.586	1.586	ASTM D542
Transmittance	87.0 %	87.0 %	ASTM D1003
Haze	1.0 %	1.0 %	ASTM D1003

N.B.: The values quoted are the average of results obtained under laboratory conditions and are given only as an indication to enable customers to make best use of semi-finished products

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<b>1 - PHYSICAL</b>			
Density	1.25 g/cm <sup>3</sup>	1.25 g/cm <sup>3</sup>	ISO 1183
Melt Volume-Flow Rate (MVR) (280°C/3.8 kg)	0.122 in <sup>3</sup> /10min	2.00 in <sup>3</sup> /10min	ISO 1133
Molding Shrink (Flow)	0.40 to 0.60 %	0.40 to 0.60 %	ASTM D955
Water Absorption Sat/23C	0.32 %	0.32 %	ISO 62
Water Absorption 23C/5ORH	0.13 %	0.13 %	ISO 62
<b>2 - MECHANICAL</b>			
Tensile Modulus	341000 psi	2350 MPa	ISO 527-1, -2/1
Tensile Stress (Yield)	9430 psi	65.0 MPa	ISO 527-1, -2/50
Tensile Stress (Break)	8700 psi	60.0 MPa	ISO 527-1, -2/50
Tensile Strain (Yield)	6.0 %	6.0 %	ISO 527-1, -2/50
Tensile Strain (Break)	100%	100%	ISO 527-1, -2/50
Flexural Modulus 2	341000 psi	2350 MPa	ISO 178
Taber Abrasion Resistance (1000 Cycles)	9.00 mg	9.00 mg	ASTM D1044
<b>2 – IMPACT</b>			
Charpy Notched Impact Strength 4			ISO 179/leA
-22 E (-30 C)	4.76 ftlb/in <sup>2</sup>	10.00 kJ/m <sup>2</sup>	
73 E (23 C)	5.23 ftlb/in <sup>2</sup>	11.0 kJ/m <sup>2</sup>	
Charpy Unnotched Impact Strength 4			ISO 179/leU
-22 E (-30 C)	No Break	No Break	
73 E (23 C)	No Break	No Break	
Notched Izod Impact Strength 5			ISO 180/leA
-22 E (-30 C)	4.76 ftlb/in <sup>2</sup>	10.00 kJ/m <sup>2</sup>	
73 E (23 C)	4.76 ftlb/in <sup>2</sup>	10.00 kJ/m <sup>2</sup>	
Unnotched Izod Impact Strength 5			ISO 180/leU
-22 E (-30 C)	No Break	No Break	
73 E (23 C)	No Break	No Break	

<b>3 - HARDNESS</b>			
Ball indentation Hardness - H 358/30	13800 psi	95.0 MPa	ISO 2039-1
<b>4 - THERMAL</b>			
Heat Deflection Temperature 6 66 psi (0.45 MPa), Unannealed	291 °F	144 °C	ISO 75B-1, -2
Heat Deflection Temperature 6 264 psi (1.8 MPa), Unannealed	268 °F	131 °C	ISO 75A-1, -2
Vicat Softening Temperature A50(50C/h10N)	311 °F	155 °C	ISO 306
B120 (120C/h 50N)	306 °F	152 °C	
B50 (50C/h 50N)	302 °F	150 °C	
Coefficient of Linear Thermal Expansion, Flow 73 to 176SF (23 to 80C)	0.000039 in/in/°F	0.000070 cm/cm/°C	ISO 11359-1, -2
Thermal Conductivity	1.4 Btu in/hr/ft <sup>2</sup> /°F	0.20 W/m/K	ISO 8302
<b>5 - ELECTRICAL</b>			
Surface Resistivity	1.0E+15 ohms	1.0E+15 ohms	IEC 60093
Volume Resistivity	1.0E+15 ohm cm	1.0E+16 ohm cm	IEC 60093
Relative Permittivity			IEC 60250
50 Hz	0,27	0,27	IEC 60250
60 Hz	0,27	0,27	
1E+6 Hz	0,27	0,27	
Dissipation Factor			IEC 60250
50 Hz	0.00100	0.00100	
60 Hz	0.00100	0.00100	
1E+6 Hz	0.01000	0.01000	
Electric Strength 0.126 in (3.20 mm), in OH	430 V/mil	17 Kv/mm	IEC 60243-1
<b>6 - FLAMMABILITY</b>			
Flame Rating - UL 0.0591 in (1.50 mm)	V-2	V-2	UL 94
0.0984 in (2.50 mm)	V-0	V-0	
Glow Wire Flammability Index 0.0394 in (1.000 mm)	1560 °F	850 °C	IEC 60695-2-12
<b>7 - OPTICAL</b>			
Refractive index	1.586	1.586	ISO 489
Transmittance	88.0 to 90.0 %	88.0 to 90.0 %	ASTM D1003
Haze	< 0.80 %	< 0.80 %	ASTM D1003

### ADDITIONAL PROPERTIES:

Surface Resistivity, IEC 60093, ROA: >1.0E15 Ohm

Volume Resistivity, IEC 60093: >1.0E15 Ohm-cm

Ball Pressure Test, IEC 60695-10-2, 125°C ± 2°C: PASSES

Flexural Stress at Yield, ISO 178, 2 mm/min: 95 MPa

### Notes

1 Typical properties: these are not to be construed as specifications.

2 0.079 in/min (2.0 mm/min)

3 1000 g, CS-I7 Wheel

4 80\*10\*3 sp=62mm

5 80\*10\*3

6 Edgewise, 120\*10\*4 mm, 3.94 in (100 mm)

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## **DISCLAIMER**

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