



MATERIAL PROPERTIES

TYPICAL PROPERTIES OF MARLON POLYCARBONATE RESINS					
	TEST METHOD			VALUE	UNIT
	DIN	ASTM	ISO		
PHYSICAL					
Density	53479	D 792	R 1183	1.2	g/cm ³
Water absorption in standard atmosphere	53473	D 570		0.15	%
Water absorption in water equilibrium, 23°C	53495: A		62	0.35	%
Water permeability	53122			<2.28	g/m ²
Mould shrinkage	16901	D 955		0.5-0.7	%
OPTICAL					
Transmittance		D 1003		87-91	%
Haze		D 1003		0.7-1.5	%
Refractive index (n _D)	53491	D 542		1.586	
THERMAL					
Heat distortion temperatures					
Method B (0.45 MPa) annealed	53461	D 648	75	145	°C
Method A (1.81 MPa) annealed	53461	D 648	75	135	°C
Method A (1.81 MPa) unannealed	53461	D 648	75	125	°C
Specific heat		D 2766		1.25	kJ/kg.K
Thermal conductivity	52612	C 177		0.2	W/K.m
Coefficient of thermal expansion	53752	D 696		68	m/m.K x 10 ⁻⁶
Vicat softening point (B/50)	53460			148	°C
Service temperature	-20 to +100°C (Short term unstressed -40 to +130°C).				
FLAMMABILITY RATINGS					
Average extent of burning		D 635		<25	mm
UL 94, 1.6 mm		UL 94		HB	
UL 94, 3.2 mm		UL 94		HB	
Oxygen index		D 2863		26	%
Glow wire test, 2 mm	VDE 0471 pt 2		IEC 695-2-1	850	°C



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	TEST METHOD			VALUE	UNIT
	DIN	ASTM	ISO		
MECHANICAL					
Tensile strength at yield	53455	D 638	R 527	62	MPa
Tensile strength at break	53455	D 638	R 527	72	MPa
Elongation at yield	53455	D 638	R 527	7	%
Elongation at break	53455	D 638	R 527	150	%
Tensile modulus	53457	D 638	R 527	2300	MPa
Flexural strength	53452	D 790	178	97	MPa
Flexural modulus	53452	D 790	178	2400	MPa
Compressive strength	53454	D 695	R 604	70	MPa
Shear strength at yield		D 732		40	MPa
Shear strength at break		D 732		60	MPa
Izod Impact strength, 23°C, notched, 3.2 mm thick		D 256	R180	900	J/m
Izod Impact strength, 23°C, unnotched, 3.2 mm thick		D 256	R180	no break	J/m
Charpy impact strength, 23°C	53453		179	no break	kJ/m²
Charpy impact strength, -40°C	53453		179	no break	kJ/m²
Charpy notched impact strength, 23°C	53453		179	50	kJ/m²
Ball indentation hardness (H30)	53456		2039/2	110	N/m²
Rockwell hardness, R		D 785		118	
Rockwell hardness, M				72	
Instrumented dart impact (4.3 m/s, 3.2 mm thick)				90	J
Taber abrasion resistance (500 cycles)		D 1044		<12	Δ% haze
ELECTRICAL					
Dielectric strength, 2 mm (in transformer oil)	VDE 0303 pt 2		IEC 243	>70	kV/mm
Volume resistivity	VDE 0303 pt 3		IEC 93	10 ¹⁶	Ω.cm
Dissipation factor tan δ x10 ⁴ ,50 Hz	VDE 0303 pt 4		IEC 250	5.5	
Dissipation factor tan δ x10 ⁴ ,1 kHz	VDE 0303 pt 4		IEC 250	9	
Dissipation factor tan δ x10 ⁴ ,300 kHz	VDE 0303 pt 4		IEC 250	80	
Surface resistivity	VDE 0303 pt 3		IEC 93	10 ¹⁵	Ω
Relative permittivity, 50 Hz	VDE 0303 pt 4		IEC 250	3	
Relative permittivity, 1 kHz	VDE 0303 pt 4		IEC 250	3	
Relative permittivity, 300 kHz	VDE 0303 pt 4		IEC 250	3	
Tracking CTI, 2 mm	VDE 0303 pt 1		IEC 112	250	V

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