Makrolon® 2605

Polycarbonate

Bayer MaterialScience AG

IDES | Prospector

Product Description
Global grade; MVR 12.5 cm³/10 min; General purpose; Medium viscosity; Easy release; Injection molding; Available in transparent, translucent and opaque colors

General			
Material Status	• Commercial: Active		
Availability	• Africa & Middle East	• Europe	
Features	• General Purpose	• Good Mold Release	• Medium Viscosity
Uses	• General Purpose		
Appearance	• Clear/Transparent • Colors Available	• Opaque • Translucent	
Forms	• Pellets		
Processing Method	• Injection Molding		
Multi-Point Data	• Creep Modulus vs. Time (ISO 11403-1) • Isochronous Stress vs. Strain (ISO 11403-1) • Isothermal Stress vs. Strain (ISO 11403-1)	• Secant Modulus vs. Strain (ISO 11403-1) • Shear Modulus vs. Temperature (ISO 11403-2) • Specific Volume vs Temperature (ISO 11403-2)	• Viscosity vs. Shear Rate (ISO 11403-2)

Physical	Nominal Value	Unit	Test Method
Density	1200	kg/m³	ISO 1183 [2]
Apparent Density	0.66	g/cm³	ISO 60
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	13	g/10 min	ISO 1133
Melt volume-flow rate (300°C/1.2 kg)	12.5	cm³/10min	ISO 1133 [2]
Molding Shrinkage			
Across Flow: 2.00 mm [3]	0.70	%	ISO 294-4
Flow: 2.00 mm [3]	0.65	%	ISO 294-4
Flow	0.60 to 0.80	%	ISO 2577 [2]
Across Flow	0.60 to 0.80	%	ISO 2577 [2]
Water Absorption			ISO 62 [2]
Saturation	0.30	%	
Equilibrium	0.12	%	

Mechanical	Nominal Value	Unit	Test Method
Tensile modulus	2400	MPa	ISO 527-2 [2]
Tensile Stress			
Yield	66.0	MPa	ISO 527-2 [2]
Break	70.0	MPa	ISO 527-2/50
Tensile Strain			
Yield	6.1	%	ISO 527-2 [2]
Break	120	%	ISO 527-2/50
Nominal strain at break	> 50	%	ISO 527-2 [2]
Tensile Creep Modulus			ISO 899-1 [2]
1 hr	2200	MPa	
1000 hr	1900	MPa	
Flexural Modulus [4]	2400	MPa	ISO 178
Flexural Strength [4]			ISO 178
3.5% Strain	73.0	MPa	
--	97.0	MPa	

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Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-30°C, Complete Break	16.0	kJ/m²	
23°C, Partial Break	70.0	kJ/m²	
Charpy Unnotched Impact Strength			
-60°C	No Break		ISO 179/1eU
-30°C	No Break		ISO 179/1eU [2]
23°C	No Break		ISO 179/1eU [2]
Notched Izod Impact Strength			ISO 180/A
-30°C, Complete Break	14.0	kJ/m²	
23°C, Partial Break	80.0	kJ/m²	
Puncture energy			ISO 6603-2 [2]
-30°C	65.0	J	
23°C	60.0	J	
Puncture - maximum force			ISO 6603-2 [2]
-30°C	6300	N	
23°C	5400	N	

Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness	115	MPa	ISO 2039-1

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ISO 75-2 [2]
0.45 MPa	136	°C	
1.8 MPa	124	°C	
Glass Transition Temperature [5]	150	°C	ISO 11357-2 [2]
Vicat Softening Temperature			
--	145	°C	ISO 306/B120
50°C/h, B (50N)	144	°C	ISO 306 [2]
CLTE			ISO 11359-2 [2]
Flow	0.000065	cm/cm/°C	
Transverse	0.000065	cm/cm/°C	
Thermal Conductivity (23°C)	0.20	W/m/K	ISO 8302

Electrical	Nominal Value	Unit	Test Method
Surface resistivity	1.0E+16	ohms	IEC 60093 [2]
Volume resistivity	1.0E+14	ohm·m	IEC 60093 [2]
Relative Permittivity			IEC 60250 [2]
100 Hz	3.10		
1 MHz	3.00		
Dissipation Factor			IEC 60250 [2]
100 Hz	0.00050		
1 MHz	0.0090		
Comparative Tracking Index			
Solution B	125	V	IEC 60112
--	250		IEC 60112 [2]
Electric strength	34	kV/mm	IEC 60243-1 [2]

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Flammability	Nominal Value	Unit	Test Method
Flame Rating - UL			UL 94
2.50 mm	HB		
3.00 mm	HB		
6.00 mm	HB		
0.750 mm	V-2		
1.50 mm	V-2		
2.40 mm	V-2		
Glow Wire Flammability Index			IEC 60695-2-12
1.00 mm	850	°C	
1.50 mm	850	°C	
2.00 mm	850	°C	
3.00 mm	930	°C	
4.00 mm	960	°C	
Glow Wire Ignition Temperature			IEC 60695-2-13
1.00 mm	875	°C	
1.50 mm	875	°C	
2.00 mm	875	°C	
3.00 mm	875	°C	
4.00 mm	875	°C	
Oxygen index	27	%	ISO 4589-2 [2]

UL 746	Nominal Value	Unit	Test Method
RTI Str (1.50 mm)	125	°C	UL 746
RTI Imp (1.50 mm)	115	°C	UL 746
RTI Elec (1.50 mm)	125	°C	UL 746

Optical	Nominal Value	Unit	Test Method
Refractive Index [6]	1.586		ISO 489
Transmittance			ISO 13468-2
1000 µm	89.0	%	
2000 µm	89.0	%	
3000 µm	88.0	%	
4000 µm	87.0	%	
Haze (3000 µm)	< 0.80	%	ISO 14782

Additional Information	Nominal Value	Unit	Test Method
Application of Flame from Small Burner			DIN 53438-1, -3
2.00 mm, Method K and F	K1, F1		
Ball Pressure Test	136	°C	IEC 60695-10-2
Burning Rate (1.00 mm, US-FMVSS)	Passed		ISO 3795
Carbon Dioxide Permeability			ISO 2556
0.0254 mm	16900	cm³/m²/bar/24 hr	
0.100 mm	4300	cm³/m²/bar/24 hr	
Electrolytical Corrosion	A1		IEC 60426
Flash Ignition Temperature	480	°C	ASTM D1929
Flexural Strain at Flexural Strength			ISO 178
23°C, 2 mm/min	7.1	%	
ISO Shortname	PC,MR,(,,)-18-9		ISO 7391

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Additional Information	Nominal Value	Unit	Test Method
Needle Flame Test			IEC 60695-2-2
1.50 mm, Method F	60.0	sec	
1.50 mm, Method K	5.0	sec	
2.00 mm, Method F	60.0	sec	
2.00 mm, Method K	5.00		
3.00 mm, Method F	120.0	sec	
3.00 mm, Method K	10.0	sec	
Nitrogen Permeability			ISO 2556
0.0254 mm	510	cm³/m²/bar/24 hr	
0.100 mm	130	cm³/m²/bar/24 hr	
Oxygen Permeability			ISO 2556
0.0254 mm	2760	cm³/m²/bar/24 hr	
0.100 mm	700	cm³/m²/bar/24 hr	
Self Ingnition Temperature	550	°C	ASTM D1929
Water Vapor Permeability			ISO 15106-1
23°C, 0.100 mm, 85% RH	15	g/m²/24 hr	

Notes

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

[2] Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.

[3] 60x60x2, 500 bar

[4] 2.0 mm/min

[5] 10 °C/min

[6] Method A

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