Makrolon® 2558

Polycarbonate

Bayer MaterialScience LLC

IDES | Prospector

Product Description
MVR 14 cm³/10 min; General purpose; Medium viscosity; Easy release; Food contact quality; Good hydrolysis resistance; Injection molding; Available in transparent, translucent and opaque colors; Suitable for medical devices

General			
Material Status	• Commercial: Active		
Availability	• North America		
Features	• General Purpose • Good Mold Release	• Hydrolysis Resistant • Medium Viscosity	
Uses	• Medical/Healthcare Applications		
Agency Ratings	• EU 2000/53/EC • EU 2002/96/EC	• EU 2003/11/EC • FDA Unspecified Rating	• USP Class VI • USP XXII, Class VI
RoHS Compliance	• RoHS Compliant		
Appearance	• Clear/Transparent • Colors Available	• Opaque • Translucent	• White
Forms	• Pellets		
Processing Method	• Injection Molding		

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Specific Gravity	1.20	1.20 g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	15 g/10 min	15 g/10 min	ASTM D1238
Molding Shrinkage			ASTM D955
Flow	0.0060 to 0.0080 in/in	0.60 to 0.80 %	
Across Flow	0.0060 to 0.0080 in/in	0.60 to 0.80 %	
Water Absorption			ASTM D570
73°F (23°C), 24 hr	0.12 %	0.12 %	
Saturation, 73°F (23°C)	0.30 %	0.30 %	
Mechanical	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Tensile Modulus [2]	350000 psi	2410 MPa	ASTM D638
Tensile Strength			ASTM D638
Yield	9400 psi	64.8 MPa	
Break	8700 psi	60.0 MPa	
Tensile Elongation (Break)	120 %	120 %	ASTM D638
Flexural Modulus	340000 psi	2340 MPa	ASTM D790
Flexural Strength	12500 psi	86.2 MPa	ASTM D790
Impact	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Notched Izod Impact			ASTM D256
73°F (23°C), 0.125 in (3.18 mm)	16 ft·lb/in	850 J/m	
73°F (23°C), 0.250 in (6.35 mm)	2.0 ft·lb/in	110 J/m	
Hardness	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Rockwell Hardness			ASTM D785
M-Scale	75	75	
R-Scale	120	120	
Thermal	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Deflection Temperature Under Load			ASTM D648
66 psi (0.45 MPa), Unannealed, 0.250 in (6.35 mm)	275 °F	135 °C	
264 psi (1.8 MPa), Unannealed, 0.250 in (6.35 mm)	266 °F	130 °C	
Vicat Softening Temperature	291 °F	144 °C	ASTM D1525 [3]
CLTE			ASTM D696
Flow	0.000033 in/in/°F	0.000060 cm/cm/°C	
Transverse	0.000033 in/in/°F	0.000060 cm/cm/°C	
Specific Heat	0.280 Btu/lb/°F	1170 J/kg/°C	ASTM C351
Thermal Conductivity	1.4 Btu·in/hr/ft²/°F	0.20 W/m/K	ASTM C177

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Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Surface Resistivity	1.0E+16 ohms	1.0E+16 ohms	ASTM D257
Volume Resistivity	1.0E+16 ohm·cm	1.0E+16 ohm·cm	ASTM D257
Dielectric Strength [4] (73°F (23°C), in Oil)	810 V/mil	32 kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	3.00	3.00	
1 MHz	2.90	2.90	
Dissipation Factor			ASTM D150
60 Hz	0.00090	0.00090	
1 MHz	0.010	0.010	

Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating - UL			UL 94
0.118 in (3.00 mm)	HB	HB	
0.236 in (6.00 mm)	HB	HB	
0.0591 in (1.50 mm)	V-2	V-2	
Oxygen Index	28 %	28 %	ASTM D2863

UL 746	Nominal Value (English)	Nominal Value (SI)	Test Method
RTI Str (0.0591 in (1.50 mm))	257 °F	125 °C	UL 746
RTI Imp (0.0591 in (1.50 mm))	239 °F	115 °C	UL 746
RTI Elec (0.0591 in (1.50 mm))	257 °F	125 °C	UL 746

Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Refractive Index	1.586	1.586	ASTM D542
Transmittance (125 mil (3180 µm))	88.0 %	88.0 %	ASTM D1003
Haze (125 mil (3180 µm))	< 0.80 %	< 0.80 %	ASTM D1003

Additional Information
Flexural Stress, ASTM D790, 5% Strain: 12500 psi Specific Volume, ASTM D792: 23.1 in³/lb

Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	250 °F	121 °C
Drying Time	4.0 hr	4.0 hr
Suggested Max Moisture	0.020 %	0.020 %
Rear Temperature	465 to 510 °F	241 to 266 °C
Middle Temperature	510 to 550 °F	266 to 288 °C
Front Temperature	530 to 570 °F	277 to 299 °C
Nozzle Temperature	515 to 585 °F	268 to 307 °C
Processing (Melt) Temp	540 to 575 °F	282 to 302 °C
Mold Temperature	150 to 220 °F	65.6 to 104 °C
Injection Pressure	10000 to 20000 psi	68.9 to 138 MPa
Injection Rate	Moderate-Fast	Moderate-Fast
Back Pressure	50.0 to 100 psi	0.345 to 0.689 MPa
Screw Speed	50 to 75 rpm	50 to 75 rpm
Clamp Tonnage	3.0 to 5.0 tons/in²	4.1 to 6.9 kN/cm²
Cushion	0.125 to 0.250 in	3.18 to 6.35 mm

Injection Notes
Inlet Air Temp: 250°F Dew Point: </= 20°F Hold Pressure: 50 - 70% of the injection pressure

Notes

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

[2] 0.039 in/min (1.0 mm/min)

[3] Rate A (50°C/h), Loading 2 (50 N)

[4] Method A (Short-Time)

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