Makrolon® DP1-1821

Polycarbonate

Covestro - Polycarbonates

Message:

MVR (300 °C/1.2 kg) 6.0 cm^3/10 min; lenses, optical; high viscosity; UV stabilized; easy release; high purity; injection molding - melt temperature 280 - 320 °C; available in clear tints only

General Information			
Additive	UV Stabilizer		
Features	Good Mold Release High Purity High Viscosity		
Uses	Lenses Optical Applications		
RoHS Compliance	RoHS Compliant		
Appearance	Clear/Transparent		
Processing Method	Injection Molding		
Physical	**Nominal Value**	**Unit**	**Test Method**
Density (23°C)	1.20	g/cm^3	ISO 1183
Apparent Density [1]	0.66	g/cm^3	ISO 60
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	6.5	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	6.00	cm^3/10min	ISO 1133
Molding Shrinkage			
Across Flow	0.60 to 0.80	%	ISO 2577
Flow	0.60 to 0.80	%	ISO 2577
Across Flow : 2.00 mm [2]	0.75	%	ISO 294-4
Flow : 2.00 mm [3]	0.70	%	ISO 294-4
Water Absorption			ISO 62
Saturation, 23°C	0.30	%	
Equilibrium, 23°C, 50% RH	0.12	%	
Hardness	**Nominal Value**	**Unit**	**Test Method**
Ball Indentation Hardness	114	MPa	ISO 2039-1
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus (23°C)	2400	MPa	ISO 527-2/1
Tensile Stress			ISO 527-2/50
Yield, 23°C	66.0	MPa	
Break, 23°C	70.0	MPa	
Tensile Strain			ISO 527-2/50

Yield, 23°C	6.2	%	
Break, 23°C	130	%	
Nominal Tensile Strain at Break (23°C)	> 50	%	ISO 527-2/50
Flexural Modulus [4] (23°C)	2400	MPa	ISO 178
Flexural Stress [5]			ISO 178
3.5% Strain,23°C	74.0	MPa	
23°C	98.0	MPa	
Flexural Strain at Flexural Strength [6] (23°C)	7.0	%	ISO 178
Flash Ignition Temperature	480	°C	ASTM D1929
Self Ignition Temperature	550	°C	ASTM D1929
ISO Shortname	ISO 7391-PC,MLR,(,,)-09-9		
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength [7]			ISO 7391
-30°C, Complete Break	14	kJ/m^2	
23°C, Partial Break	80	kJ/m^2	
Charpy Unnotched Impact Strength			ISO 179/1eU
-60°C	No Break		
-30°C	No Break		
23°C	No Break		
Notched Izod Impact Strength [8]			ISO 7391
-30°C, Complete Break	15	kJ/m^2	
23°C, Partial Break	70	kJ/m^2	
Multi-Axial Instrumented Impact Energy			ISO 6603-2
-30°C	70.0	J	
23°C	60.0	J	
Multi-Axial Instrumented Impact Peak Force			ISO 6603-2
-30°C	6500	N	
23°C	5600	N	
Thermal	**Nominal Value**	**Unit**	**Test Method**
Heat Deflection Temperature			
0.45 MPa, Unannealed	138	°C	ISO 75-2/B
1.8 MPa, Unannealed	125	°C	ISO 75-2/A
Glass Transition Temperature [9]	145	°C	ISO 11357-2
Vicat Softening Temperature			
--	144	°C	ISO 306/B50
--	147	°C	ISO 306/B120
Ball Pressure Test (137°C)	Pass		IEC 60695-10-2
CLTE			ISO 11359-2
Flow : 23 to 55°C	6.5E-5	cm/cm/°C	
Transverse : 23 to 55°C	6.5E-5	cm/cm/°C	
Thermal Conductivity [10] (23°C)	0.20	W/m/K	ISO 8302

Flammability	Nominal Value	Unit	Test Method
Oxygen Index [11]	27	%	ISO 4589-2
Optical	**Nominal Value**	**Unit**	**Test Method**
Refractive Index [12]	1.586		ISO 489
Transmittance			ISO 13468-2
1000 µm	89.0	%	
2000 µm	89.0	%	
3000 µm	88.0	%	

NOTE	
1.	Pellets
2.	60x60x2 mm, 500 bar
3.	60x60x2 mm, 500 bar
4.	2.0 mm/min
5.	2.0 mm/min
6.	2 mm/min
7.	Based on ISO 179-1eA, 3 mm
8.	Based on ISO 180-A, 3 mm
9.	10°C/min
10.	Cross-flow
11.	Procedure A
12.	Method A

Recommended distributors for this material

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