Makrolon® 2665 MAS071

Polycarbonate

Covestro - Polycarbonates

Message:

MVR (300 °C/1.2 kg) 12 cm³/10 min; flame retardant; UL 94V-2/1.5 mm and 3.0 mm; medium viscosity; easy release; injection molding - melt temperature 280 - 320 °C; available in transparent, translucent and opaque colors

General Information	
UL YellowCard	E41613-233140
Additive	Flame Retardant
Features	Flame Retardant Good Mold Release Medium Viscosity
RoHS Compliance	RoHS Compliant
Appearance	Clear/Transparent Colors Available Opaque Translucent
Processing Method	Injection Molding

Physical	Nominal Value	Unit	Test Method
Density (23°C)	1.20	g/cm³	ISO 1183
Apparent Density [1]	0.64	g/cm³	ISO 60
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	13	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	12.0	cm³/10min	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	115	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	6.1	%	
Break, 23°C	130	%	
Nominal Tensile Strain at Break (23°C)	> 50	%	ISO 527-2/50
Tensile Creep Modulus			ISO 899-1
1 hr	2200	MPa	
1000 hr	1900	MPa	
Flexural Modulus [4] (23°C)	2400	MPa	ISO 178
Flexural Stress [5]			ISO 178
3.5% Strain,23°C	73.0	MPa	
23°C	97.0	MPa	
Flexural Strain at Flexural Strength (23°C) [6]	7.1	%	ISO 178
Gas Permeation			ISO 2556
Carbon Dioxide : 23°C, 25.4 µm	16900	$cm^3/m^2/bar/24\ hr$	
Carbon Dioxide : 23°C, 100.0 µm	3800	$cm^3/m^2/bar/24\ hr$	
Nitrogen : 23°C, 25.4 µm	510	$cm^3/m^2/bar/24\ hr$	
Nitrogen : 23°C, 100.0 µm	120	$cm^3/m^2/bar/24\ hr$	
Oxygen : 23°C, 25.4 µm	2760	$cm^3/m^2/bar/24\ hr$	
Oxygen : 23°C, 100.0 µm	670	$cm^3/m^2/bar/24\ hr$	
Application of Flame from Small Burner - Method K and F (2.00 mm)	K1, F1		DIN 53438-1, -3
Burning Rate - US-FMVSS (> 1.00 mm)	passed		ISO 3795
Flash Ignition Temperature	480	°C	ASTM D1929
Needle Flame Test			IEC 60695-11-5
Method F : 1.50 mm	1.0	min	
Method F : 2.00 mm	2.0	min	
Method F : 3.00 mm	2.0	min	
Method K : 1.50 mm	0.2	min	
Method K : 2.00 mm	0.3	min	
Method K : 3.00 mm	0.5	min	
Self Ignition Temperature	550	°C	ASTM D1929
Electrolytical Corrosion (23°C)	A1		IEC 60426
ISO Shortname	ISO 7391-PC,MR,(,,)-18-9		

Films	Nominal Value	Unit	Test Method
Water Vapor Transmission Rate (23°C, 85% RH, 100 µm)	15	$g/m^2/24\ hr$	ISO 15106-1

Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength [7]			ISO 7391
-30°C, Complete Break	16	kJ/m^2	
23°C, Partial Break	70	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/m²	
23°C, Partial Break	65	kJ/m²	
Multi-Axial Instrumented Impact Energy			ISO 6603-2
-30°C	65.0	J	
23°C	60.0	J	
Multi-Axial Instrumented Impact Peak Force			ISO 6603-2
-30°C	6300	N	
23°C	5400	N	
Thermal	**Nominal Value**	**Unit**	**Test Method**
Heat Deflection Temperature			
0.45 MPa, Unannealed	136	°C	ISO 75-2/B
1.8 MPa, Unannealed	124	°C	ISO 75-2/A
Glass Transition Temperature [9]	144	°C	ISO 11357-2
Vicat Softening Temperature			
--	143	°C	ISO 306/B50
--	145	°C	ISO 306/B120
Ball Pressure Test (135°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
RTI Elec (1.50 mm)	125	°C	UL 746
RTI Imp (1.50 mm)	115	°C	UL 746
RTI Str (1.50 mm)	125	°C	UL 746
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	1.0E+16	ohms	IEC 60093
Volume Resistivity (23°C)	1.0E+16	ohms·cm	IEC 60093
Electric Strength (23°C, 1.00 mm)	34	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
23°C, 100 Hz	3.10		
23°C, 1 MHz	3.00		
Dissipation Factor			IEC 60250
23°C, 100 Hz	5.0E-4		
23°C, 1 MHz	9.0E-3		
Comparative Tracking Index			IEC 60112
Solution A	225	V	
Solution B	125	V	
Flammability	**Nominal Value**	**Unit**	**Test Method**

Flame Rating			UL 94
0.750 mm	V-2		
6.00 mm	V-0		
Glow Wire Flammability Index			IEC 60695-2-12
0.750 mm	850	°C	
1.50 mm	850	°C	
3.00 mm	960	°C	
Glow Wire Ignition Temperature			IEC 60695-2-13
0.750 mm	875	°C	
1.50 mm	875	°C	
3.00 mm	875	°C	
Oxygen Index [11]	30	%	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	%	
4000 µm	87.0	%	
Haze (3000 µm)	< 0.80	%	ISO 14782

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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