

Makrolon® 1248

Polycarbonate

Covestro - Polycarbonates

Message:

MVR (300 °C/1.2 kg) 7.0 cm³/10 min; food contact quality; medium viscosity; impact modified; injection molding - melt temperature 280 - 320 °C; available in light colors only

General Information			
UL YellowCard	E41613-101010301		
Additive	Impact Modifier		
Features	Food Contact Acceptable		
	Impact Modified		
	Medium Viscosity		
RoHS Compliance	RoHS Compliant		
Appearance	Colors Available		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Density (23°C)	1.20	g/cm ³	ISO 1183
Apparent Density ¹	0.64	g/cm ³	ISO 60
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	7.5	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	7.00	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	0.80	%	ISO 294-4
Flow : 2.00 mm ³	0.75	%	ISO 294-4
Water Absorption			ISO 62
Saturation, 23°C	0.40	%	
Equilibrium, 23°C, 50% RH	0.12	%	
Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness	108	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	2250	MPa	ISO 527-2/1
Tensile Stress			ISO 527-2/50
Yield, 23°C	61.0	MPa	
Break, 23°C	70.0	MPa	
Tensile Strain			ISO 527-2/50
Yield, 23°C	6.0	%	
Break, 23°C	130	%	

Nominal Tensile Strain at Break (23°C)	> 50	%	ISO 527-2/50
Flexural Modulus ⁴ (23°C)	2250	MPa	ISO 178
Flexural Stress ⁵			ISO 178
3.5% Strain, 23°C	68.0	MPa	
23°C	88.0	MPa	
Flexural Strain at Flexural Strength (23°C) ⁶	6.8	%	ISO 178
Halving Interval - Tensile Strength (1.00 mm)	45.0	°C	IEC 60216
Temperature Index - Tensile Impact Strength (1.00 mm) ⁷	455	°C	IEC 60216
Burning Rate - US-FMVSS (> 1.00 mm)	passed		ISO 3795
Flash Ignition Temperature	430	°C	ASTM D1929
Needle Flame Test			IEC 60695-11-5
Method F : 1.50 mm	1.0	min	
Method F : 2.00 mm	1.0	min	
Method F : 3.00 mm	2.0	min	
Method K : 2.00 mm	0.1	min	
Method K : 3.00 mm	0.2	min	
Self Ignition Temperature	540	°C	ASTM D1929
Electrolytical Corrosion (23°C)	A1		IEC 60426
ISO Shortname	ISO 7391-PC,MP,(,,)-09-9		
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁸			ISO 7391
-30°C, Partial Break	60	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 ⁹			ISO 7391
-30°C, Complete Break	30	kJ/m ²	
23°C, Partial Break	65	kJ/m ²	
Multi-Axial Instrumented Impact Energy			ISO 6603-2
-30°C	60.0	J	
23°C	55.0	J	
Multi-Axial Instrumented Impact Peak Force			ISO 6603-2
-30°C	6100	N	
23°C	5200	N	
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, Unannealed	139	°C	ISO 75-2/B
1.8 MPa, Unannealed	125	°C	ISO 75-2/A

Glass Transition Temperature ¹⁰	148	°C	ISO 11357-2
Vicat Softening Temperature			
--	146	°C	ISO 306/B50
--	148	°C	ISO 306/B120
Ball Pressure Test (138°C)	Pass		IEC 60695-10-2
CLTE			ISO 11359-2
Flow : 23 to 55°C	7.0E-5	cm/cm/°C	
Transverse : 23 to 55°C	7.0E-5	cm/cm/°C	
Thermal Conductivity ¹¹ (23°C)	0.20	W/m/K	ISO 8302
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	1.2E-3		
23°C, 1 MHz	0.012		
Comparative Tracking Index			IEC 60112
Solution A	225	V	
Solution B	125	V	
Flammability	Nominal Value	Unit	Test Method
Flame Rating (1.50 mm)	HB		UL 94
Glow Wire Flammability Index			IEC 60695-2-12
0.750 mm	850	°C	
1.50 mm	850	°C	
3.00 mm	900	°C	
Glow Wire Ignition Temperature			IEC 60695-2-13
0.750 mm	800	°C	
1.50 mm	875	°C	
3.00 mm	875	°C	
Oxygen Index ¹²	30	%	ISO 4589-2
Optical	Nominal Value	Unit	Test Method
Refractive Index ¹³	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.	20000 hr
8.	Based on ISO 179-1eA, 3 mm
9.	Based on ISO 180-A, 3 mm
10.	10°C/min
11.	Cross-flow
12.	Procedure A
13.	Method A

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