

Makrolon® 1899

Polycarbonate

Covestro - Polycarbonates

Message:

MVR (300 °C/1.2 kg) 16 cm³/10 min; special flame retardent system; UL 94V-0/0.75 mm; impact modified; medium viscosity; easy release; vicat softening temperature 50 N; 50 °C/h = 110 °C; injection molding - melt temperature 240 - 280 °C; available in opaque colors only; battery housing

General Information			
UL YellowCard	E41613-100048177		
Additive	Flame Retardant		
	Impact Modifier		
Features	Flame Retardant		
	Good Mold Release		
	Impact Modified		
	Medium Viscosity		
Uses	Battery Cases		
RoHS Compliance	RoHS Compliant		
Appearance	Colors Available		
	Opaque		
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)	17	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	16.0	cm ³ /10min	ISO 1133
Molding Shrinkage ²			ISO 294-4
Across Flow : 2.00 mm	0.65	%	
Flow : 2.00 mm	0.60	%	
Water Absorption			ISO 62
Saturation, 23°C	0.30	%	
Equilibrium, 23°C, 50% RH	0.12	%	
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	2600	MPa	ISO 527-2/1
Tensile Stress			ISO 527-2/50
Yield, 23°C	68.0	MPa	
Break, 23°C	60.0	MPa	
Tensile Strain			ISO 527-2/50

Yield, 23°C	4.8	%	
Break, 23°C	120	%	
Nominal Tensile Strain at Break (23°C)	> 50	%	ISO 527-2/50
Flexural Modulus ³ (23°C)	2600	MPa	ISO 178
Flexural Stress ⁴			ISO 178
3.5% Strain, 23°C	82.0	MPa	
23°C	100	MPa	
Flexural Strain at Flexural Strength ⁵ (23°C)	5.8	%	ISO 178
Flash Ignition Temperature	460	°C	ASTM D1929
Self Ignition Temperature	500	°C	ASTM D1929
Impact	Nominal Value	Unit	Test Method
Charpy Unnotched Impact Strength			ISO 179/1eU
-30°C	No Break		
23°C	No Break		
Multi-Axial Instrumented Impact Energy			ISO 6603-2
-30°C	55.0	J	
23°C	50.0	J	
Multi-Axial Instrumented Impact Peak Force			ISO 6603-2
-30°C	5400	N	
23°C	4500	N	
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, Unannealed	105	°C	ISO 75-2/B
1.8 MPa, Unannealed	96.0	°C	ISO 75-2/A
Vicat Softening Temperature	110	°C	ISO 306/B50
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	
RTI Elec (0.750 mm)	80.0	°C	UL 746
RTI Imp (0.750 mm)	80.0	°C	UL 746
RTI Str (0.750 mm)	80.0	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Comparative Tracking Index			IEC 60112
Solution A	250	V	
Solution B	100	V	
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
0.750 mm	V-0		
3.00 mm	5VA		
Glow Wire Flammability Index (1.00 mm)	960	°C	IEC 60695-2-12
Oxygen Index ⁶	35	%	ISO 4589-2

NOTE	
1.	Pellets
2.	60x60x2 mm, 500 bar
3.	2.0 mm/min
4.	2.0 mm/min
5.	2 mm/min
6.	Procedure A

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