

CYCOLAC™ MG38 resin

Acrylonitrile Butadiene Styrene

SABIC Innovative Plastics

Message:

Very high impact ABS. Toughness/rigidity. Good fatigue resistance.

General Information			
UL YellowCard	E121562-220711	E121562-220712	
Features	Fatigue Resistant		
	Good Toughness		
	Medium Rigidity		
	Ultra High Impact Resistance		
Processing Method	Injection Molding		
Multi-Point Data	Coefficient of Thermal Expansion vs. Temperature (ASTM E831)		
	Flexural DMA (ASTM D4065)		
	Pressure-Volume-Temperature (PVT - Zoller Method)		
	Shear DMA (ASTM D4065)		
	Specific Heat vs. Temperature (ASTM D3417)		
	Tensile Creep (ASTM D2990)		
	Tensile Fatigue		
	Tensile Stress vs. Strain (ASTM D638)		
	Thermal Conductivity vs. Temperature (ASTM E1530)		
	Viscosity vs. Shear Rate (ASTM D3835)		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.05	g/cm³	ASTM D792
--	1.04	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR)			
230°C/3.8 kg	3.7	g/10 min	ASTM D1238
220°C/10.0 kg	14	g/10 min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 to 0.80	%	Internal Method
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	111		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2270	MPa	ASTM D638
--	2270	MPa	ISO 527-2/1
Tensile Strength			

Yield ²	44.0	MPa	ASTM D638
Yield	47.0	MPa	ISO 527-2/50
Break ³	33.0	MPa	ASTM D638
Break	34.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	2.1	%	ASTM D638
Yield	2.7	%	ISO 527-2/50
Break ⁵	26	%	ASTM D638
Break	17	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span ⁶	2340	MPa	ASTM D790
-- ⁷	2250	MPa	ISO 178
Flexural Stress			
--	71.0	MPa	ISO 178
Yield, 50.0 mm Span ⁸	72.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹			ISO 179/1eA
-30°C	10	kJ/m ²	
23°C	28	kJ/m ²	
Notched Izod Impact			
23°C	370	J/m	ASTM D256
-30°C ¹⁰	9.0	kJ/m ²	ISO 180/1A
23°C ¹¹	27	kJ/m ²	ISO 180/1A
Instrumented Dart Impact (23°C, Total Energy)	31.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	95.0	°C	ASTM D648
1.8 MPa, Unannealed, 3.20 mm	80.0	°C	ASTM D648
1.8 MPa, Unannealed, 64.0 mm Span ¹²	81.0	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	98.0	°C	ASTM D1525, ISO 306/B50 11 ¹³
--	100	°C	ISO 306/B120
CLTE			ASTM E831
Flow : -40 to 40°C	8.8E-5	cm/cm/°C	
Transverse : -40 to 40°C	8.6E-5	cm/cm/°C	
RTI Elec	60.0	°C	UL 746
RTI Imp	60.0	°C	UL 746
RTI Str	60.0	°C	UL 746
Electrical	Nominal Value		Test Method
Arc Resistance ¹⁴	PLC 5		ASTM D495
Comparative Tracking Index (CTI)	PLC 0		UL 746

High Amp Arc Ignition (HAI)	PLC 0		UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 2		UL 746
Hot-wire Ignition (HWI)	PLC 3		UL 746
Flammability	Nominal Value		Test Method
Flame Rating (1.50 mm)	HB		UL 94
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (240°C, 1000 sec ⁻¹)	245	Pa·s	ASTM D3835
Injection	Nominal Value	Unit	
Drying Temperature	82.2 to 93.3	°C	
Drying Time	2.0 to 4.0	hr	
Drying Time, Maximum	8.0	hr	
Suggested Max Moisture	0.10	%	
Suggested Shot Size	50 to 70	%	
Rear Temperature	188 to 210	°C	
Middle Temperature	204 to 227	°C	
Front Temperature	216 to 238	°C	
Nozzle Temperature	218 to 260	°C	
Processing (Melt) Temp	218 to 260	°C	
Mold Temperature	48.9 to 71.1	°C	
Back Pressure	0.345 to 0.689	MPa	
Screw Speed	30 to 60	rpm	
Vent Depth	0.038 to 0.051	mm	
NOTE			
1.	5.0 mm/min		
2.	Type I, 5.0 mm/min		
3.	Type I, 5.0 mm/min		
4.	Type I, 5.0 mm/min		
5.	Type I, 5.0 mm/min		
6.	1.3 mm/min		
7.	2.0 mm/min		
8.	1.3 mm/min		
9.	80*10*4 sp=62mm		
10.	80*10*4		
11.	80*10*4		
12.	80*10*4 mm		
13.	Rate B (120°C/h), Loading 2 (50 N)		
14.	Tungsten Electrode		

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