CYCOLAC™ Resin MG47F - Americas

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Acrylonitrile Butadiene Styrene

SABIC

Technical Data

Product Description			
Multi-purpose, injection molding ABS providing a favorable balance of engineering properties. FDA compliant.			
General			
Material Status	• Commercial: Active		
UL Yellow Card [1]	• E121562-100324185		
Search for UL Yellow Card	• SABIC • CYCOLAC™ Resin		
Availability	• Latin America	• North America	
Uses	• Additive Manufacturing (3D Printing) • Appliances • Automotive Exterior Parts • Construction Applications • Electrical Parts • Electrical/Electronic Applications	• Electronic Displays • Fluid Handling • Lawn and Garden Equipment • Lighting Applications • Medical Devices • Medical/Healthcare Applications	• Non-specific Food Applications • Optical Applications • Outdoor Applications • Packaging • Recreational Vehicle Applications • Water Management
Multi-Point Data	• Flexural DMA (ASTM D4065) • Pressure-Volume-Temperature (PVT - Zoller Method) • Shear DMA (ASTM D4065)	• Specific Heat vs. Temperature (ASTM D3417) • Tensile Fatigue • Tensile Stress vs. Strain (ASTM D638)	• Thermal Conductivity vs. Temperature (ASTM E1530) • Viscosity vs. Shear Rate (ASTM D3835)
Also Available In	• Asia Pacific	• Europe	

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.04	g/cm³	ASTM D792 ISO 1183
Melt Mass-Flow Rate (MFR)			
230°C/3.8 kg	5.6	g/10 min	ASTM D1238
220°C/10.0 kg	18	g/10 min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 to 0.80	%	Internal Method
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus			
-- [3]	2270	MPa	ASTM D638
--	2370	MPa	ISO 527-1/1
Tensile Strength			
Yield [4]	44.0	MPa	ASTM D638
Yield	47.0	MPa	ISO 527-2/50
Break [4]	33.0	MPa	ASTM D638
Break	35.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield [4]	2.0	%	ASTM D638
Yield	2.6	%	ISO 527-2/50
Break [4]	24	%	ASTM D638
Break	25	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span [5]	2300	MPa	ASTM D790
-- [6]	2200	MPa	ISO 178
Flexural Stress			
-- [6, 7]	70.0	MPa	ISO 178
Yield, 50.0 mm Span [5]	70.0	MPa	ASTM D790

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Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength [8]			ISO 179/1eA
-30°C	9.0	kJ/m²	
23°C	26	kJ/m²	
Notched Izod Impact			
23°C	320	J/m	ASTM D256
-30°C [9]	8.0	kJ/m²	ISO 180/1A
23°C [9]	22	kJ/m²	ISO 180/1A
Instrumented Dart Impact			ASTM D3763
23°C, Total Energy	30.0	J	

Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	112		ASTM D785

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	94.0	°C	ASTM D648
1.8 MPa, Unannealed, 3.20 mm	80.0	°C	ASTM D648
1.8 MPa, Unannealed, 4.00 mm, 64.0 mm Span [9]	81.0	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	99.0	°C	ASTM D1525 [10]
--	100	°C	ISO 306/B120
--	98.0	°C	ISO 306/B50
CLTE			ASTM E831
Flow : -40 to 40°C	8.8E-5	cm/cm/°C	
Transverse : -40 to 40°C	8.8E-5	cm/cm/°C	
RTI Elec	60.0	°C	UL 746B
RTI Imp	60.0	°C	UL 746B
RTI Str	60.0	°C	UL 746B

Electrical	Nominal Value	Test Method
Arc Resistance [11]	PLC 6	ASTM D495
Comparative Tracking Index (CTI)	PLC 0	UL 746A
High Amp Arc Ignition (HAI) [12]	PLC 0	UL 746A
High Voltage Arc Resistance to Ignition (HVAR)	PLC 3	UL 746A
Hot-wire Ignition (HWI)	PLC 3	UL 746A

Flammability	Nominal Value	Test Method
Flame Rating (1.5 mm)	HB	UL 94

Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (240°C, 1000 sec^-1)	225	Pa·s	ASTM D3835

Injection	Nominal Value	Unit
Drying Temperature	80 to 95	°C
Drying Time	2.0 to 4.0	hr
Suggested Max Moisture	0.10	%
Suggested Shot Size	50 to 70	%
Rear Temperature	190 to 210	°C
Middle Temperature	205 to 225	°C
Front Temperature	215 to 240	°C
Nozzle Temperature	220 to 260	°C
Processing (Melt) Temp	220 to 260	°C
Mold Temperature	50 to 70	°C
Back Pressure	0.300 to 0.700	MPa
Screw Speed	30 to 60	rpm
Vent Depth	0.038 to 0.051	mm

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Injection Notes

- Drying Time (Cumulative): 8 hr

Notes

[1] A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

[2] Typical properties: these are not to be construed as specifications.

[3] 5.0 mm/min

[4] Type I, 5.0 mm/min

[5] 1.3 mm/min

[6] 2.0 mm/min

[7] at Yield

[8] 80*10*4 sp=62mm

[9] 80*10*4 mm

[10] Rate A (50°C/h), Loading 2 (50 N)

[11] Tungsten Electrode

[12] Surface

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Supplier

SABIC
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Distributor

3Polymer (Guangzhou) Chemical Technology Co., Ltd.
Telephone: +86-20-3466-7988
Web: http://3polymer.com
Availability: China

Bamberger Polymers, Inc.
Bamberger Polymers is a global distribution company. Contact Bamberger Polymers for availability of individual products by country.
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Web: http://www.bambergerpolymers.com/
Availability: Canada, Mexico, United States

Nexeo Plastics
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