

# CYCOLAC™ Resin MG47 - Asia

Acrylonitrile Butadiene Styrene

SABIC

PROSPECTOR®

www.ulprospector.com

## Technical Data

### Product Description

Multi-purpose, injection molding ABS providing a favorable balance of engineering properties.

### General

Material Status	• Commercial: Active
UL Yellow Card <sup>1</sup>	• E207780-228360 • E207780-228361
Search for UL Yellow Card	• SABIC • CYCOLAC™ Resin
Availability	• Asia Pacific
Uses	<ul style="list-style-type: none"><li>• Additive Manufacturing (3D Printing)</li><li>• Aerospace Applications</li><li>• Appliances</li><li>• Automotive Exterior Parts</li><li>• Automotive Interior Parts</li><li>• Automotive Lighting</li><li>• Construction Applications</li><li>• Decorative Parts</li><li>• Electrical Parts</li><li>• Electrical/Electronic Applications</li><li>• Electronic Displays</li><li>• Heavy Transportation</li><li>• Industrial Applications</li><li>• Lawn &amp; Garden Equipment</li><li>• Lighting Applications</li><li>• Material Handling</li><li>• Medical Devices</li><li>• Medical/Healthcare Applications</li><li>• Non-specific Food Applications</li><li>• Optical Applications</li><li>• Outdoor Applications</li><li>• Pharmaceuticals</li><li>• Sporting Goods</li><li>• Surgical Instruments</li><li>• Water Management</li></ul>
Also Available In	• Latin America • North America

### Physical

	Nominal Value Unit	Test Method
Density / Specific Gravity	1.04 g/cm <sup>3</sup>	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		
-- <sup>3</sup>	2270 MPa	ASTM D638
--	2370 MPa	ISO 527-1/1
Tensile Strength		
Yield <sup>4</sup>	44.0 MPa	ASTM D638
Yield	47.0 MPa	ISO 527-2/50
Break <sup>4</sup>	33.0 MPa	ASTM D638
Break	35.0 MPa	ISO 527-2/50
Tensile Elongation		
Yield <sup>4</sup>	2.0 %	ASTM D638
Yield	2.6 %	ISO 527-2/50
Break <sup>4</sup>	24 %	ASTM D638
Break	25 %	ISO 527-2/50
Flexural Modulus		
50.0 mm Span <sup>5</sup>	2300 MPa	ASTM D790
-- <sup>6</sup>	2200 MPa	ISO 178



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Mechanical	Nominal Value Unit	Test Method
Flexural Stress		
-- 6, 7	70.0 MPa	ISO 178
Yield, 50.0 mm Span <sup>5</sup>	70.0 MPa	ASTM D790
Impact	Nominal Value Unit	Test Method
Charpy Notched Impact Strength <sup>8</sup>		ISO 179/1eA
-30°C	9.0 kJ/m <sup>2</sup>	
23°C	26 kJ/m <sup>2</sup>	
Notched Izod Impact		
23°C	320 J/m	ASTM D256
-30°C <sup>9</sup>	8.0 kJ/m <sup>2</sup>	ISO 180/1A
23°C <sup>9</sup>	22 kJ/m <sup>2</sup>	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 <sup>9</sup>	81.0 °C	ISO 75-2/Af
Vicat Softening Temperature		
--	99.0 °C	ASTM D1525 <sup>10</sup>
--	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 Unit	Test Method
Arc Resistance <sup>11</sup>	PLC 6	ASTM D495
Comparative Tracking Index (CTI)	PLC 0	UL 746A
High Amp Arc Ignition (HAI) <sup>12</sup>	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 Unit	Test Method
Flame Rating (1.5 mm)	HB	UL 94
Fill Analysis	Nominal Value Unit	Test Method
Melt Viscosity (240°C, 1000 sec <sup>-1</sup> )	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 %	



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Injection	Nominal Value Unit
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

## Injection Notes

- Drying Time (Cumulative): 8 hr

## Notes

<sup>1</sup> 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.

<sup>2</sup> Typical properties: these are not to be construed as specifications.

<sup>3</sup> 5.0 mm/min

<sup>4</sup> Type I, 5.0 mm/min

<sup>5</sup> 1.3 mm/min

<sup>6</sup> 2.0 mm/min

<sup>7</sup> at Yield

<sup>8</sup> 80\*10\*4 sp=62mm

<sup>9</sup> 80\*10\*4 mm

<sup>10</sup> Rate A (50°C/h), Loading 2 (50 N)

<sup>11</sup> Tungsten Electrode

<sup>12</sup> Surface

