

CYCOLAC™ MG94 resin

Acrylonitrile Butadiene Styrene

SABIC Innovative Plastics

Message:

Superior flow, injection molding ABS. Good impact. For thin-wall applications.

General Information	
UL YellowCard	E121562-220727
Features	Good Flow
	Good Impact Resistance
Uses	Thin-walled Parts
Processing Method	Injection Molding
Multi-Point Data	Coefficient of Thermal Expansion vs. Temperature (ASTM E831)
	Flexural DMA (ASTM D4065)
	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/cm ³	ASTM D792
--	1.04	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR)			
230°C/3.8 kg	12	g/10 min	ASTM D1238
220°C/10.0 kg	42	g/10 min	ISO 1133
220°C/5.0 kg	13	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)	113		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2480	MPa	ASTM D638
--	2450	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	46.0	MPa	ASTM D638

Yield	46.0	MPa	ISO 527-2/50
Break ³	35.0	MPa	ASTM D638
Break	35.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	2.0	%	ASTM D638
Yield	2.3	%	ISO 527-2/50
Break ⁵	18	%	ASTM D638
Break	40	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span ⁶	2620	MPa	ASTM D790
-- ⁷	2500	MPa	ISO 178
Flexural Stress			
--	70.0	MPa	ISO 178
Yield, 50.0 mm Span ⁸	79.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹ (23°C)	18	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-30°C	80	J/m	ASTM D256
23°C	240	J/m	ASTM D256
-30°C ¹⁰	7.0	kJ/m ²	ISO 180/1A
23°C ¹¹	16	kJ/m ²	ISO 180/1A
Instrumented Dart Impact			ASTM D3763
-30°C, Total Energy	5.00	J	
23°C, Total Energy	21.0	J	
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	96.0	°C	ASTM D648
0.45 MPa, Unannealed, 100 mm Span ¹²	89.0	°C	ISO 75-2/Be
1.8 MPa, Unannealed, 3.20 mm	82.0	°C	ASTM D648
1.8 MPa, Unannealed, 100 mm Span ¹³	76.0	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	98.0	°C	ASTM D1525, ISO 306/B50 ¹¹ ¹⁴
--	100	°C	ISO 306/B120
CLTE			ASTM E831, ISO 11359-2
Flow : -40 to 40°C	8.8E-5	cm/cm/°C	
Transverse : -40 to 40°C	8.5E-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
Flammability	Nominal Value		Test Method
Flame Rating (1.52 mm)	HB		UL 94

Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (240°C, 1000 sec ⁻¹)	173	Pa·s	ASTM D3835

Injection	Nominal Value	Unit
Drying Temperature	82.2 to 87.8	°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 199	°C
Middle Temperature	199 to 210	°C
Front Temperature	204 to 227	°C
Nozzle Temperature	204 to 246	°C
Processing (Melt) Temp	204 to 246	°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. 120*10*4 mm
13. 120*10*4 mm
14. Rate B (120°C/h), Loading 2 (50 N)

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