

CYCOLAC™ HMG94MD resin

Acrylonitrile Butadiene Styrene

SABIC Innovative Plastics

Message:

Superior flow, injection molding ABS for medical applications. Good impact. For thin-wall applications. Biocompatible (ISO10993). FDA compliant. Gamma & EtO sterilizable.

General Information			
UL YellowCard	E121562-220727		
Features	Biocompatible		
	Ethylene Oxide Sterilizable		
	Good Impact Resistance		
	High Flow		
	Radiation Sterilizable		
Uses	Medical/Healthcare Applications		
	Thin-walled Parts		
Agency Ratings	FDA Unspecified Rating		
	ISO 10993		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.04	g/cm ³	ASTM D792
--	1.06	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR)			
230°C/3.8 kg	12	g/10 min	ASTM D1238
220°C/5.0 kg	13	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			
-- ¹	2480	MPa	ASTM D638
--	2450	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	46.9	MPa	ASTM D638
Yield	40.0	MPa	ISO 527-2/5
Break ³	35.9	MPa	ASTM D638
Break	35.0	MPa	ISO 527-2/5
Tensile Elongation			

Yield ⁴	2.0	%	ASTM D638
Yield	2.0	%	ISO 527-2/5
Break ⁵	18	%	ASTM D638
Break	35	%	ISO 527-2/5
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	79.3	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹ (23°C)	23	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 (23°C, Total Energy)	21.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	93.0	°C	ASTM D648
1.8 MPa, Unannealed, 3.20 mm	77.0	°C	ASTM D648
1.8 MPa, Unannealed, 64.0 mm Span ¹²	80.0	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	98.0	°C	ASTM D1525, ISO 306/B50 11 ¹³
--	100	°C	ISO 306/B120
CLTE			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	
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (240°C, 1000 sec ⁻¹)	1730	Pa · s	ISO 11443
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.	80*10*4 mm
13.	Rate B (120°C/h), Loading 2 (50 N)

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