

CYCOLAC™ HMG94MD resin

Acrylonitrile Butadiene Styrene
SABIC Innovative Plastics



Technical Data

Product Description

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

General

Material Status	• Commercial: Active		
Literature ¹	• Technical Datasheet		
UL Yellow Card ²	• E121562-220727		
Search for UL Yellow Card	• SABIC Innovative Plastics • CYCOLAC™		
Availability	• North America		
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/cm³	ASTM D792
--	1.06 g/cm³	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		
-- ⁴	2480 MPa	ASTM D638
--	2450 MPa	ISO 527-2/1
Tensile Strength		
Yield ⁵	46.9 MPa	ASTM D638
Yield	40.0 MPa	ISO 527-2/5
Break ⁵	35.9 MPa	ASTM D638
Break	35.0 MPa	ISO 527-2/5
Tensile Elongation		
Yield ⁵	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 Strength		
-- ^{7, 8}	70.0 MPa	ISO 178
Yield, 50.0 mm Span ⁶	79.3 MPa	ASTM D790
Impact	Nominal Value Unit	Test Method
Charpy Notched Impact Strength ⁹ (23°C)	23 kJ/m²	ISO 179/1eA



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Impact	Nominal Value Unit	Test Method
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 ¹⁰	16 kJ/m ²	ISO 180/1A
Instrumented Dart Impact		ASTM D3763
23°C, Total Energy	21.0 J	
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 ¹¹	80.0 °C	ISO 75-2/Af
Vicat Softening Temperature		
--	98.0 °C	ASTM D1525 ¹² ISO 306/B50 ¹²
--	100 °C	ISO 306/B120
CLTE		ISO 11359-2
Flow : -40 to 40°C	0.000088 cm/cm/°C	
Transverse : -40 to 40°C	0.000085 cm/cm/°C	
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	0.010 %	
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	



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Notes

- ¹ These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.
- ² A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL IDES 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.
- ³ Typical properties: these are not to be construed as specifications.
- ⁴ 5.0 mm/min
- ⁵ Type I, 5.0 mm/min
- ⁶ 1.3 mm/min
- ⁷ 2.0 mm/min
- ⁸ Yield
- ⁹ 80*10*4 sp=62mm
- ¹⁰ 80*10*4
- ¹¹ 80*10*4 mm
- ¹² Rate B (120°C/h), Loading 2 (50 N)

