

LEXAN™ HP9NR resin

Polycarbonate

SABIC Innovative Plastics

Message:

Low flow polycarbonate. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO10993 or USP Class VI). EtO and steam sterilizable. For blow molding applications.

General Information	
Features	Ethylene oxide disinfection Low liquidity Biocompatibility Disinfect with steam
Uses	Drug Medical/nursing supplies
Agency Ratings	ISO 10993 USP Class VI
Processing Method	Extrusion blow molding Injection molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.20	g/cm ³	ASTM D792, ISO 1183
--	1.19	g/cm ³	ASTM D792
Specific Volume	0.835	cm ³ /g	ASTM D792
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	2.5	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	2.00	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 - 0.70	%	Internal method
Water Absorption			
24 hr	0.15	%	ASTM D570
Saturated, 23°C	0.26	%	ISO 62
Equilibrium, 23°C	0.35	%	ASTM D570
Equilibrium, 100°C	0.58	%	ASTM D570
Equilibrium, 23°C, 50% RH	0.10	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	118		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			

-- ¹	2130	MPa	ASTM D638
--	2300	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	62.1	MPa	ASTM D638
Yield	64.0	MPa	ISO 527-2/50
Fracture ³	65.5	MPa	ASTM D638
Fracture	62.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	7.0	%	ASTM D638
Yield	6.8	%	ISO 527-2/50
Fracture ⁵	110	%	ASTM D638
Fracture	100	%	ISO 527-2/50
Flexural Modulus			
50.0mm span ⁶	2340	MPa	ASTM D790
-- ⁷	2100	MPa	ISO 178
Flexural Stress			
--	93.0	MPa	ISO 178
Yield, 50.0mm span ⁸	93.1	MPa	ASTM D790
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	10.0	mg	ASTM D1044
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹ (23°C)	72	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-30°C	140	J/m	ASTM D256
23°C	750	J/m	ASTM D256
-30°C ¹⁰	15	kJ/m ²	ISO 180/1A
23°C ¹¹	54	kJ/m ²	ISO 180/1A
Unnotched Izod Impact (23°C)	3200	J/m	ASTM D4812
Instrumented Dart Impact (23°C, Total Energy)	77.0	J	ASTM D3763
Dart Drop Impact (23°C)	169	J	ASTM D3029
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, unannealed, 6.40mm	138	°C	ASTM D648
1.8 MPa, unannealed, 6.40mm	132	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span ¹²	131	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	157	°C	ASTM D1525 ¹³
--	160	°C	ISO 306/B50
--	162	°C	ISO 306/B120
Linear thermal expansion coefficient			
Flow: -40 to 95°C	6.8E-5	cm/cm/°C	ASTM E831
Flow: -40 to 40°C	7.0E-5	cm/cm/°C	ISO 11359-2

Lateral: -40 to 40°C	7.0E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Specific Heat	1260	J/kg/°C	ASTM C351
Thermal Conductivity	0.19	W/m/K	ASTM C177
RTI Elec	80.0	°C	UL 746
RTI Imp	80.0	°C	UL 746
RTI	80.0	°C	UL 746
Flammability	Nominal Value		Test Method
Flame Rating (0.457 mm)	HB		UL 94
Optical	Nominal Value	Unit	Test Method
Refractive Index	1.586		ASTM D542
Transmittance (2540 µm)	88.0	%	ASTM D1003
Haze (2540 µm)	1.0	%	ASTM D1003
Injection	Nominal Value	Unit	
Drying Temperature	121	°C	
Drying Time	3.0 - 4.0	hr	
Drying Time, Maximum	48	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	40 - 60	%	
Rear Temperature	299 - 321	°C	
Middle Temperature	310 - 332	°C	
Front Temperature	321 - 343	°C	
Nozzle Temperature	316 - 338	°C	
Processing (Melt) Temp	321 - 343	°C	
Mold Temperature	82.2 - 116	°C	
Back Pressure	0.345 - 0.689	MPa	
Screw Speed	40 - 70	rpm	
Vent Depth	0.025 - 0.076	mm	
Extrusion	Nominal Value	Unit	
Drying Temperature	116 - 121	°C	
Drying Time	4.0 - 6.0	hr	
Suggested Max Moisture	0.020	%	
Cylinder Zone 1 Temp.	260 - 274	°C	
Cylinder Zone 2 Temp.	260 - 274	°C	
Cylinder Zone 3 Temp.	260 - 274	°C	
Cylinder Zone 4 Temp.	260 - 274	°C	
Cylinder Zone 5 Temp.	260 - 274	°C	
Adapter Temperature	260 - 274	°C	
Die Temperature	268 - 279	°C	
Extrusion instructions			
Drying Time (Cumulative): 48 hrsHead - Zone 6 - Top Temperature: 260 - 274 °CHead - Zone 7 - Bottom Temperature: 260 - 274 °CMelt Temperature (Parison): 266 - 277 °CMinimum Moisture Content: 0.01 %Mold Temperature: 66 - 93 °CScrew Speed: 15 - 50 rpm			
NOTE			

1.	5.0 mm/min
2.	Type 1, 50mm/min
3.	Type 1, 50mm/min
4.	Type 1, 50mm/min
5.	Type 1, 50mm/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.	标准 B (120°C/h), 载荷2 (50N)

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