



LEXAN™ Resin HP9NR
Americas: COMMERCIAL

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.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	630	kgf/cm ²	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	660	kgf/cm ²	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	7	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	110	%	ASTM D 638
Tensile Modulus, 5 mm/min	21700	kgf/cm ²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	940	kgf/cm ²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	23900	kgf/cm ²	ASTM D 790
Hardness, Rockwell R	118	-	ASTM D 785
Taber Abrasion, CS-17, 1 kg	10	mg/1000cy	ASTM D 1044
Tensile Stress, yield, 50 mm/min	64	MPa	ISO 527
Tensile Stress, break, 50 mm/min	62	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6.8	%	ISO 527
Tensile Strain, break, 50 mm/min	100	%	ISO 527
Tensile Modulus, 1 mm/min	2300	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	93	MPa	ISO 178
Flexural Modulus, 2 mm/min	2100	MPa	ISO 178
IMPACT			
Izod Impact, unnotched, 23°C	326	cm-kgf/cm	ASTM D 4812
Izod Impact, notched, 23°C	76	cm-kgf/cm	ASTM D 256
Izod Impact, notched, -30°C	13	cm-kgf/cm	ASTM D 256
Falling Dart Impact (D 3029), 23°C	1728	cm-kgf	ASTM D 3029
Instrumented Impact Total Energy, 23°C	785	cm-kgf	ASTM D 3763



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IMPACT			
Izod Impact, notched 80*10*4 +23°C	54	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	15	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	72	kJ/m ²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	157	°C	ASTM D 1525
HDT, 0.45 MPa, 6.4 mm, unannealed	137	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	132	°C	ASTM D 648
CTE, -40°C to 40°C, xflow	7.E-05	1/°C	ASTM E 831
CTE, -40°C to 95°C, flow	6.84E-05	1/°C	ASTM E 831
Specific Heat	1.25	J/g-°C	ASTM C 351
Thermal Conductivity	0.19	W/m-°C	ASTM C 177
CTE, -40°C to 40°C, flow	7.E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	160	°C	ISO 306
Vicat Softening Temp, Rate B/120	162	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	131	°C	ISO 75/Af
Relative Temp Index, Elec	80	°C	UL 746B
Relative Temp Index, Mech w/impact	80	°C	UL 746B
Relative Temp Index, Mech w/o impact	80	°C	UL 746B
PHYSICAL			
Specific Gravity	1.2	-	ASTM D 792
Specific Volume	0.83	cm ³ /g	ASTM D 792
Density	1.19	g/cm ³	ASTM D 792
Water Absorption, 24 hours	0.15	%	ASTM D 570
Water Absorption, equilibrium, 23C	0.35	%	ASTM D 570



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PHYSICAL			
Water Absorption, equilibrium, 100°C	0.58	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm (5)	0.5 - 0.7	%	SABIC Method
Melt Flow Rate, 300°C/1.2 kgf	2.5	g/10 min	ASTM D 1238
Density	1.2	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	0.26	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.1	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	2	cm ³ /10 min	ISO 1133
OPTICAL			
Light Transmission, 2.54 mm	88	%	ASTM D 1003
Haze, 2.54 mm	1	%	ASTM D 1003
Refractive Index	1.586	-	ASTM D 542
FLAME CHARACTERISTICS			
UL Recognized, 94HB Flame Class Rating (3)	0.45	mm	UL 94



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• CAUTION: For production delays of two or more hours, reduce temperature setpoints to 150°C (300°F).

PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
Drying Temperature	120	°C
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	48	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	320 - 345	°C
Nozzle Temperature	315 - 340	°C
Front - Zone 3 Temperature	320 - 345	°C
Middle - Zone 2 Temperature	310 - 330	°C
Rear - Zone 1 Temperature	300 - 320	°C
Mold Temperature	80 - 115	°C
Back Pressure	0.3 - 0.7	MPa
Screw Speed	40 - 70	rpm
Shot to Cylinder Size	40 - 60	%
Vent Depth	0.025 - 0.076	mm
Extrusion Blow Molding		
Drying Temperature	115 - 120	°C
Drying Time	4 - 6	hrs
Drying Time (Cumulative)	48	hrs
Maximum Moisture Content	0.02	%
Minimum Moisture Content	0.01	%
Melt Temperature (Parison)	265 - 275	°C
Barrel - Zone 1 Temperature	260 - 275	°C
Barrel - Zone 2 Temperature	260 - 275	°C
Barrel - Zone 3 Temperature	260 - 275	°C
Barrel - Zone 4 Temperature	260 - 275	°C
Adapter - Zone 5 Temperature	260 - 275	°C
Head - Zone 6 - Top Temperature	260 - 275	°C
Head - Zone 7 - Bottom Temperature	260 - 275	°C

- Purge with HDPE prior to changing screw, head, or die tooling and/or machine shutdown.
- 24:1 L:D low shear 2.5:1 compression ratio screw recommended. Screw design affects melt temperature. Screw speed -- 15-50 rpm suggested. Adjust actual rpm for desired output while maintaining desired melt temperature range.



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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Extrusion Blow Molding		
Screw Speed	15 - 50	rpm
Mold Temperature	65 - 95	°C
Die Temperature	270 - 280	°C

- Purge with HDPE prior to changing screw, head, or die tooling and/or machine shutdown.
 - 24:1 L:D low shear 2.5:1 compression ratio screw recommended. Screw design affects melt temperature. Screw speed -- 15-50 rpm suggested. Adjust actual rpm for desired output while maintaining desired melt temperature range.
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