



LEXAN™ Resin HP4
Americas: COMMERCIAL

Medium flow polycarbonate. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO10993 or USP Class VI). EtO and steam sterilizable. Contains mold release.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 2.0 in/min	8900	psi	ASTM D 638
Tensile Stress, brk, Type I, 2.0 in/min	9800	psi	ASTM D 638
Tensile Strain, yld, Type I, 2.0 in/min	7	%	ASTM D 638
Tensile Strain, brk, Type I, 2.0 in/min	130	%	ASTM D 638
Tensile Modulus, 2.0 in/min	343000	psi	ASTM D 638
Flexural Stress, yld, 0.05 in/min, 2 in span	14000	psi	ASTM D 790
Flexural Modulus, 0.05 in/min, 2 in span	339000	psi	ASTM D 790
Hardness, Rockwell M	70	-	ASTM D 785
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	63	MPa	ISO 527
Tensile Stress, break, 50 mm/min	70	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6	%	ISO 527
Tensile Strain, break, 50 mm/min	110	%	ISO 527
Tensile Modulus, 1 mm/min	2350	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	90	MPa	ISO 178
Flexural Modulus, 2 mm/min	2300	MPa	ISO 178
IMPACT			
Izod Impact, unnotched, 73°F	60	ft-lb/in	ASTM D 4812
Izod Impact, notched, 73°F	15	ft-lb/in	ASTM D 256
Izod Impact, notched (natural, tints)	15	ft-lb/in	ASTM D 256
Izod Impact, notched (colors)	15	ft-lb/in	ASTM D 256

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(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

(4) Internal measurements according to UL standards.

(5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(6) Needs hard coat to consistently pass 60 sec Vertical Burn.

Source GMD, last updated:

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IMPACT			
Tensile Impact, Type S	274	ft-lb/in ²	ASTM D 1822
Falling Dart Impact (D 3029), 73°F	124	ft-lb	ASTM D 3029
Instrumented Impact Energy @ peak, 73°F	557	in-lb	ASTM D 3763
Izod Impact, unnotched 80*10*4 +23°C	NA	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	NA	kJ/m ²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	12	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	10	kJ/m ²	ISO 180/1A
Charpy Impact, notched, 23°C	35	kJ/m ²	ISO 179/2C
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	NA	kJ/m ²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	NA	kJ/m ²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate B/50	309	°F	ASTM D 1525
HDT, 66 psi, 0.250 in, unannealed	278	°F	ASTM D 648
HDT, 264 psi, 0.250 in, unannealed	269	°F	ASTM D 648
CTE, flow, -40°F to 200°F	3.8E-05	1/°F	ASTM E 831
Specific Heat	0.29	BTU/lb-°F	ASTM C 351
Thermal Conductivity	0.19	W/m-°C	ASTM C 177
Thermal Conductivity	0.2	W/m-°C	ISO 8302
CTE, 23°C to 80°C, flow	7.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate A/50	153	°C	ISO 306
Vicat Softening Temp, Rate B/50	141	°C	ISO 306
Vicat Softening Temp, Rate B/120	142	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	136	°C	ISO 75/Be

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THERMAL			
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	125	°C	ISO 75/Ae
Relative Temp Index, Elec	130	°C	UL 746B
Relative Temp Index, Mech w/impact	130	°C	UL 746B
Relative Temp Index, Mech w/o impact	130	°C	UL 746B
PHYSICAL			
Specific Gravity	1.2	-	ASTM D 792
Specific Volume	22.97	in ³ /lb	ASTM D 792
Density	0.042	lb/in ³	ASTM D 792
Water Absorption, 24 hours @ 73°F	0.15	%	ASTM D 570
Water Absorption, equilibrium, 73F	0.35	%	ASTM D 570
Water Absorption, equilibrium, 212°F	0.58	%	ASTM D 570
Mold Shrinkage, flow, 0.125" (5)	0.5 - 0.7	%	SABIC Method
Melt Flow Rate, 300°C/1.2 kgf	10.5	g/10 min	ASTM D 1238
Melt Volume Rate, MVR at 300°C/1.2 kg	10	cm ³ /10 min	ISO 1133
OPTICAL			
Light Transmission, 0.1 in	88	%	ASTM D 1003
Haze, 0.1 in	1	%	ASTM D 1003
Refractive Index	1.586	-	ASTM D 542
ELECTRICAL			
Volume Resistivity	>1.E+17	Ohm-cm	ASTM D 257
Dielectric Strength, in air, 125 mils	378.4	V/mil	ASTM D 149
Relative Permittivity, 50/60 Hz	3.17	-	ASTM D 150
Relative Permittivity, 1 MHz	2.96	-	ASTM D 150
Dissipation Factor, 50/60 Hz	0.0009	-	ASTM D 150
Dissipation Factor, 1 MHz	0.01	-	ASTM D 150
Hot Wire Ignition {PLC}	2	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	2	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	1	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	2	PLC Code	UL 746A

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ELECTRICAL			
Volume Resistivity	>1.E+15	Ohm-cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ohm	IEC 60093
Dielectric Strength, in oil, 3.2 mm	17	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.7	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.001	-	IEC 60250
Dissipation Factor, 1 MHz	0.01	-	IEC 60250
Relative Permittivity, 50/60 Hz	2.7	-	IEC 60250
FLAME CHARACTERISTICS			
UL Recognized, 94HB Flame Class Rating (3)	0.057	in	UL 94
Oxygen Index (LOI)	25	%	ASTM D 2863
Oxygen Index (LOI)	25	%	ISO 4589

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
Drying Temperature	250	°F
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	48	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	560 - 600	°F
Nozzle Temperature	550 - 590	°F
Front - Zone 3 Temperature	560 - 600	°F
Middle - Zone 2 Temperature	540 - 580	°F
Rear - Zone 1 Temperature	520 - 560	°F
Mold Temperature	160 - 200	°F
Back Pressure	50 - 100	psi
Screw Speed	40 - 70	rpm
Shot to Cylinder Size	40 - 60	%
Vent Depth	0.001 - 0.003	in

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