

LEXAN™ HP4REU resin

Polycarbonate
SABIC Innovative Plastics Europe

Message:
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.

General Information			
UL YellowCard	E45329-100106612		
Additive	Mold Release		
Features	Biocompatible		
	Ethylene Oxide Sterilizable		
	Good Mold Release		
	Medium Flow		
	Steam Sterilizable		
Uses	Medical Devices		
	Pharmaceuticals		
Agency Ratings	ISO 10993		
	USP Class VI		
RoHS Compliance	RoHS Compliant		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.20	g/cm³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	10	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	9.00	cm³/10min	ISO 1133
Molding Shrinkage - Flow			Internal Method
-- 1	0.50 to 0.70	%	
3.20 mm	0.50 to 0.70	%	
Water Absorption			ISO 62
Saturation, 23°C	0.35	%	
Equilibrium, 23°C, 50% RH	0.15	%	
Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness (H 358/30)	95.0	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- 2	2370	MPa	ASTM D638
--	2350	MPa	ISO 527-2/1

Tensile Strength			
Yield ³	62.0	MPa	ASTM D638
Yield	63.0	MPa	ISO 527-2/50
Break ⁴	68.0	MPa	ASTM D638
Break	70.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁵	7.0	%	ASTM D638
Yield	6.0	%	ISO 527-2/50
Break ⁶	130	%	ASTM D638
Break	120	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span ⁷	2340	MPa	ASTM D790
-- ⁸	2300	MPa	ISO 178
Flexural Stress			
--	90.0	MPa	ISO 178
Yield, 50.0 mm Span ⁹	96.0	MPa	ASTM D790
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	10.0	mg	Internal Method
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			
-30°C ¹⁰	15	kJ/m ²	ISO 179/1eA
23°C ¹¹	75	kJ/m ²	ISO 179/1eA
23°C	35	kJ/m ²	ISO 179/2C
Charpy Unnotched Impact Strength ¹²			ISO 179/1eU
-30°C	No Break		
23°C	No Break		
Notched Izod Impact			
-30°C	100	J/m	ASTM D256
23°C	800	J/m	ASTM D256
-30°C ¹³	10	kJ/m ²	ISO 180/1A
23°C ¹⁴	70	kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength ¹⁵			ISO 180/1U
-30°C	No Break		
23°C	No Break		
Instrumented Dart Impact (23°C, Total Energy)	63.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, Unannealed, 100 mm Span ¹⁶	138	°C	ISO 75-2/Be
1.8 MPa, Unannealed, 3.20 mm	132	°C	ASTM D648
1.8 MPa, Unannealed, 100 mm Span ¹⁷	127	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	141	°C	ASTM D1525 ¹⁸

--	143	°C	ISO 306/B50
--	145	°C	ISO 306/B120
Ball Pressure Test			IEC 60695-10-2
125°C	Pass		
140°C ¹⁹	Pass		
CLTE			
Flow : -40 to 95°C	6.8E-5	cm/cm/°C	ASTM E831
Flow : 23 to 80°C	7.0E-5	cm/cm/°C	ISO 11359-2
Transverse : -40 to 95°C	6.8E-5	cm/cm/°C	ASTM E831
Transverse : -40 to 40°C	7.0E-5	cm/cm/°C	ISO 11359-2
Thermal Conductivity	0.20	W/m/K	ISO 8302
RTI Elec	130	°C	UL 746
RTI Imp	125	°C	UL 746
RTI Str	125	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity	> 1.0E+15	ohms·cm	IEC 60093
Electric Strength (3.20 mm, in Oil)	17	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
50 Hz	2.70		
60 Hz	2.70		
1 MHz	2.70		
Dissipation Factor			IEC 60250
50 Hz	1.0E-3		
60 Hz	1.0E-3		
1 MHz	0.010		
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
1.50 mm	HB		
3.00 mm	HB		
Glow Wire Flammability Index (1.00 mm)	850	°C	IEC 60695-2-12
Oxygen Index	25	%	ISO 4589-2
Optical	Nominal Value	Unit	Test Method
Refractive Index	1.586		ISO 489
Transmittance (2540 µm)	88.0	%	ASTM D1003
Haze (2540 µm)	< 0.80	%	ASTM D1003
Injection	Nominal Value	Unit	
Drying Temperature	120	°C	
Drying Time	2.0 to 4.0	hr	
Suggested Max Moisture	0.020	%	
Hopper Temperature	60.0 to 80.0	°C	
Rear Temperature	260 to 280	°C	

Middle Temperature	270 to 290	°C
Front Temperature	280 to 310	°C
Nozzle Temperature	270 to 290	°C
Processing (Melt) Temp	280 to 310	°C
Mold Temperature	80.0 to 110	°C

NOTE

1.	Tensile Bar
2.	50 mm/min
3.	Type I, 50 mm/min
4.	Type I, 50 mm/min
5.	Type I, 50 mm/min
6.	Type I, 50 mm/min
7.	1.3 mm/min
8.	2.0 mm/min
9.	1.3 mm/min
10.	80*10*3 sp=62mm
11.	80*10*3 sp=62mm
12.	80*10*3 sp=62mm
13.	80*10*3
14.	80*10*3
15.	80*10*3
16.	120*10*4 mm
17.	120*10*4 mm
18.	Rate B (120°C/h), Loading 2 (50 N)
19.	Approximate maximum

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