

LEXAN™ PK2870 resin

Polycarbonate
SABIC Innovative Plastics

Message:

LEXAN PK2870 polycarbonate resin, global grade, MVR (300C/1.2kg) 2 cm3/10min, high viscosity, branched, blow molding, high melt strength, high impact resistance, Available in transparent colors only. FDA 21CFR177.1580, European food contact regulation EC Directive 2002/72/EC. Designed to be a candidate for water bottle applications.

General Information			
UL YellowCard	E121562-220998		
Features	Impact resistance, high		
	Good melt strength		
	Compliance of Food Exposure		
	Viscosity, High		
	Branched polymer structure		
Uses	Bottle		
Agency Ratings	FDA 21 CFR 177.1580		
	European 2002/72/EC		
Appearance	Available colors		
	Clear/transparent		
Processing Method	Extrusion blow molding		
	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.20	g/cm ³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	2.5	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR)			ISO 1133
300°C/1.2 kg	2.00	cm ³ /10min	ISO 1133
300°C/2.16 kg	4.00	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 - 0.70	%	Internal method
Water Absorption			
Saturated, 23°C	0.35	%	ISO 62
Equilibrium, 23°C	0.35	%	ASTM D570
Equilibrium, 100°C	0.58	%	ASTM D570
Equilibrium, 23°C, 50% RH	0.15	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	120		ISO 2039-2
Mechanical	Nominal Value	Unit	Test Method

Tensile Modulus			
-- ¹	2350	MPa	ASTM D638
--	2350	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	62.0	MPa	ASTM D638
Yield	65.0	MPa	ISO 527-2/50
Fracture ³	65.0	MPa	ASTM D638
Fracture	70.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	7.0	%	ASTM D638
Yield	7.0	%	ISO 527-2/50
Fracture ⁵	> 70	%	ASTM D638
Fracture	> 70	%	ISO 527-2/50
Flexural Modulus			
50.0mm span ⁶	2300	MPa	ASTM D790
-- ⁷	2300	MPa	ISO 178
Flexural Stress			
--	95.0	MPa	ISO 178
Yield, 50.0mm span ⁸	93.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹			ISO 179/1eA
-30°C	50	kJ/m ²	ISO 179/1eA
23°C	70	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength ¹⁰			ISO 179/1eU
-30°C	No Break		ISO 179/1eU
23°C	No Break		ISO 179/1eU
Notched Izod Impact			
-30°C	150	J/m	ASTM D256
23°C	750	J/m	ASTM D256
-30°C ¹¹	55	kJ/m ²	ISO 180/1A
23°C ¹²	75	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
-30°C	No Break		ASTM D4812, ISO 180/1U
23°C	No Break		ASTM D4812, ISO 180/1U
Dart Drop Impact (23°C)	170	J	ASTM D3029
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, unannealed, 3.20mm	145	°C	ASTM D648
0.45 MPa, unannealed, 64.0mm span ¹³	145	°C	ISO 75-2/Bf
1.8 MPa, unannealed, 3.20mm	130	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span ¹⁴	130	°C	ISO 75-2/Af
Vicat Softening Temperature			

--	150	°C	ASTM D1525, ISO 306/B120 11 ¹⁵
--	149	°C	ISO 306/B50
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
CLTE - Flow			
-40 to 95°C	7.0E-5	cm/cm/°C	ASTM E831
23 to 80°C	7.0E-5	cm/cm/°C	ISO 11359-2
Specific Heat	1250	J/kg/°C	ASTM C351
Thermal Conductivity	0.20	W/m/K	ASTM C177, ISO 8302
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	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.	50 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*3 sp=62mm
10.	80*10*3 sp=62mm
11.	80*10*3
12.	80*10*3
13.	80*10*4 mm
14.	80*10*4 mm
15.	标准 B (120°C/h), 载荷2 (50N)

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