

# LEXAN™ RESIN PK2870

REGION ASIA

## DESCRIPTION

LEXAN PK2870 polycarbonate resin, global grade, MVR (300C/1.2kg) 2 cm<sup>3</sup>/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.

## TYPICAL PROPERTY VALUES

Revision 20180906

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 50 mm/min	62	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	65	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	7	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	>70	%	ASTM D 638
Tensile Modulus, 50 mm/min	2350	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	95	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2300	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	65	MPa	ISO 527
Tensile Stress, break, 50 mm/min	70	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	7	%	ISO 527
Tensile Strain, break, 50 mm/min	>70	%	ISO 527
Tensile Modulus, 1 mm/min	2350	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	95	MPa	ISO 178
Flexural Modulus, 2 mm/min	2300	MPa	ISO 178
Hardness, Rockwell R	120	-	ISO 2039-2
<b>IMPACT</b>			
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D 4812
Izod Impact, unnotched, -30°C	NB	J/m	ASTM D 4812
Izod Impact, notched, 23°C	750	J/m	ASTM D 256
Izod Impact, notched, -30°C	150	J/m	ASTM D 256
Falling Dart Impact (D 3029), 23°C	170	J	ASTM D 3029
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	NB	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, notched 80*10*3 +23°C	75	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	55	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	70	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	50	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m <sup>2</sup>	ISO 179/1eU
<b>THERMAL</b>			
Vicat Softening Temp, Rate B/50	150	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm	145	°C	ASTM D 648
HDT, 1.82 MPa, 3.2 mm	130	°C	ASTM D 648
CTE, -40°C to 95°C, flow	7.E-05	1/°C	ASTM E 831

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Specific Heat	1.25	J/g-°C	ASTM C 351
Thermal Conductivity	0.2	W/m-°C	ASTM C177
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 B/50	149	°C	ISO 306
Vicat Softening Temp, Rate B/120	150	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	145	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	130	°C	ISO 75/Af
<b>PHYSICAL</b>			
Specific Gravity	1.2	-	ASTM D 792
Water Absorption, equilibrium, 23C	0.35	%	ASTM D 570
Water Absorption, equilibrium, 100°C	0.58	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm	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/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.35	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.15	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	2	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 300°C/2.16 kg	4	cm³/10 min	ISO 1133
<b>OPTICAL</b>			
Light Transmission, 2.54 mm	88	%	ASTM D 1003
Haze, 2.54 mm	<0.8	%	ASTM D 1003
Refractive Index	1.586	-	ISO 489
<b>INJECTION MOLDING</b>			
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	
<b>EXTRUSION BLOW MOLDING</b>			
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	%	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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	
Screw Speed	15 – 50	rpm	
Mold Temperature	65 – 95	°C	
Die Temperature	270 – 280	°C	

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