# LEXAN™ RESIN PK2870

REGION AMERICAS

## DESCRIPTION

LEXAN™ PK2870 resin is a 2.5 MFR branched polycarbonate, MVR of 2. High viscosity. For blow molding, with high melt strength and high impact resistance. FDA 21CFR177.1580. European food contact regulation EC Directive EU10/2011. Excellent candidate for water bottle applications. Available in transparent colors only.

## TYPICAL PROPERTY VALUES

Revision 20201125

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| MECHANICAL | | | |
| Tensile Stress, yld, Type I, 50 mm/min | 62 | MPa | ASTM D638 |
| Tensile Stress, brk, Type I, 50 mm/min | 65 | MPa | ASTM D638 |
| Tensile Strain, yld, Type I, 50 mm/min | 7 | % | ASTM D638 |
| Tensile Strain, brk, Type I, 50 mm/min | >70 | % | ASTM D638 |
| Tensile Modulus, 50 mm/min | 2350 | MPa | ASTM D638 |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 95 | MPa | ASTM D790 |
| Flexural Modulus, 1.3 mm/min, 50 mm span | 2300 | MPa | ASTM D790 |
| 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 |
| IMPACT | | | |
| Izod Impact, unnotched, 23°C | NB | J/m | ASTM D4812 |
| Izod Impact, unnotched, -30°C | NB | J/m | ASTM D4812 |
| Izod Impact, notched, 23°C | 750 | J/m | ASTM D256 |
| Izod Impact, notched, -30°C | 150 | J/m | ASTM D256 |
| Falling Dart Impact (D 3029), 23°C | 170 | J | ASTM D3029 |
| Izod Impact, unnotched 80*10*3 +23°C | NB | kJ/m² | ISO 180/1U |
| Izod Impact, unnotched 80*10*3 -30°C | NB | kJ/m² | ISO 180/1U |
| Izod Impact, notched 80*10*3 +23°C | 75 | kJ/m² | ISO 180/1A |
| Izod Impact, notched 80*10*3 -30°C | 55 | kJ/m² | ISO 180/1A |
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm | 70 | kJ/m² | ISO 179/1eA |
| Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm | 50 | kJ/m² | ISO 179/1eA |
| Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm | NB | kJ/m² | ISO 179/1eU |
| Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm | NB | kJ/m² | ISO 179/1eU |
| THERMAL | | | |
| Vicat Softening Temp, Rate B/50 | 150 | °C | ASTM D1525 |
| HDT, 0.45 MPa, 3.2 mm | 145 | °C | ASTM D648 |
| HDT, 1.82 MPa, 3.2 mm | 130 | °C | ASTM D648 |
| CTE, -40°C to 95°C, flow | 7.E-05 | 1/°C | ASTM E831 |

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|---|---|---|---|
| Specific Heat | 1.25 | J/g-°C | ASTM C351 |
| 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 |
| PHYSICAL | | | |
| Specific Gravity | 1.2 | - | ASTM D792 |
| Water Absorption, (23°C/Saturated) | 0.35 | % | ASTM D570 |
| Water Absorption, equilibrium, 100°C | 0.58 | % | ASTM D570 |
| 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 D1238 |
| Density | 1.2 | g/cm³ | ISO 1183 |
| Water Absorption, (23°C/saturated) | 0.35 | % | ISO 62-1 |
| 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 |
| OPTICAL | | | |
| Light Transmission, 2.54 mm | 88 | % | ASTM D1003 |
| Haze, 2.54 mm | <0.8 | % | ASTM D1003 |
| Refractive Index | 1.586 | - | ISO 489 |
| FLAME CHARACTERISTICS | | | |
| UL Yellow Card Link | E121562-220998 | - | - |
| 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 | |

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

## DISCLAIMER