

# LEXANT™ RESIN PK2870

REGION ASIA

## DESCRIPTION

LEXANT™ 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 20210812

| PROPERTIES                                   | TYPICAL VALUES | UNITS             | TEST METHODS |
|--|----------------|-------------------|--------------|
| <b>MECHANICAL</b>                            |                |                   |              |
| 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   |
| <b>IMPACT</b>                                |                |                   |              |
| 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/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 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    |

| PROPERTIES                             | TYPICAL VALUES                 | UNITS                   | TEST METHODS   |
|--|--------------------------------|-------------------------|----------------|
| 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      |
| <b>PHYSICAL</b>                        |                                |                         |                |
| 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/cm <sup>3</sup>       | 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                              | cm <sup>3</sup> /10 min | ISO 1133       |
| Melt Volume Rate, MVR at 300°C/2.16 kg | 4                              | cm <sup>3</sup> /10 min | ISO 1133       |
| <b>OPTICAL</b>                         |                                |                         |                |
| Light Transmission, 2.54 mm            | 88                             | %                       | ASTM D1003     |
| Haze, 2.54 mm                          | <0.8                           | %                       | ASTM D1003     |
| Refractive Index                       | 1.586                          | -                       | ISO 489        |
| <b>FLAME CHARACTERISTICS</b>           |                                |                         |                |
| UL Yellow Card Link                    | <a href="#">E207780-228450</a> | -                       | -              |
| <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                     |                |

| 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

Any sale by SABIC, its subsidiaries and affiliates (each a "seller"), is made exclusively under seller's standard conditions of sale (available upon request) unless agreed otherwise in writing and signed on behalf of the seller. While the information contained herein is given in good faith, SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND NONINFRINGEMENT OF INTELLECTUAL PROPERTY, NOR ASSUMES ANY LIABILITY, DIRECT OR INDIRECT, WITH RESPECT TO THE PERFORMANCE, SUITABILITY OR FITNESS FOR INTENDED USE OR PURPOSE OF THESE PRODUCTS IN ANY APPLICATION. Each customer must determine the suitability of seller materials for the customer's particular use through appropriate testing and analysis. No statement by seller concerning a possible use of any product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right.