



**LEXAN™ Resin HPB3144**  
**Americas: COMMERCIAL**

Standard flow, transparent, high purity polycarbonate copolymer resin with reduced oxygen permeability and water vapor transmission rate. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO 10993 or USP Class VI), food contact compliant.

| TYPICAL PROPERTIES <sup>1</sup>              | TYPICAL VALUE | Unit                | Standard     |
|----------------------------------------------|---------------|---------------------|--------------|
| <b>MECHANICAL</b>                            |               |                     |              |
| Tensile Stress, yld, Type I, 50 mm/min       | 810           | kgf/cm <sup>2</sup> | ASTM D 638   |
| Tensile Stress, brk, Type I, 50 mm/min       | 660           | kgf/cm <sup>2</sup> | 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, 5 mm/min                    | 29500         | kgf/cm <sup>2</sup> | ASTM D 638   |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 1220          | kgf/cm <sup>2</sup> | ASTM D 790   |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 26500         | kgf/cm <sup>2</sup> | ASTM D 790   |
| Hardness, Rockwell L                         | 108           | -                   | ASTM D 785   |
| Hardness, Rockwell M                         | 93            | -                   | ASTM D 785   |
| Taber Abrasion, CS-17, 1 kg                  | 10            | mg/1000cy           | ASTM D 1044  |
| Taber Abrasion, CS-17, 1 kg                  | 10            | mg/1000cy           | SABIC Method |
| Tensile Stress, yield, 50 mm/min             | 80            | MPa                 | ISO 527      |
| Tensile Stress, break, 50 mm/min             | 60            | MPa                 | ISO 527      |
| Tensile Strain, yield, 50 mm/min             | 7             | %                   | ISO 527      |
| Tensile Strain, break, 50 mm/min             | 40            | %                   | ISO 527      |
| Tensile Modulus, 1 mm/min                    | 2450          | MPa                 | ISO 527      |
| Flexural Stress, yield, 2 mm/min             | 108           | MPa                 | ISO 178      |
| Flexural Modulus, 2 mm/min                   | 2450          | MPa                 | ISO 178      |
| Hardness, H358/30                            | 128           | MPa                 | ISO 2039-1   |
| Pencil Hardness test, 1kgf                   | H             | -                   | ASTM D 3363  |
| Erichson scratch depth, 6N                   | 14            | micrometer          | SABIC Method |



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| <b>IMPACT</b>                               |               |                   |                |
| Izod Impact, unnotched, 23°C                | NB            | cm-kgf/cm         | ASTM D 4812    |
| Izod Impact, notched, 23°C                  | 3             | cm-kgf/cm         | ASTM D 256     |
| Izod Impact, notched, -30°C                 | 3             | cm-kgf/cm         | ASTM D 256     |
| Instrumented Impact Total Energy, 23°C      | 305           | cm-kgf            | ASTM D 3763    |
| 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        | 45            | kJ/m <sup>2</sup> | ISO 180/1U     |
| Izod Impact, notched 80*10*3 +23°C          | 5             | kJ/m <sup>2</sup> | ISO 180/1A     |
| Izod Impact, notched 80*10*3 -30°C          | 4             | kJ/m <sup>2</sup> | ISO 180/1A     |
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm  | 3             | kJ/m <sup>2</sup> | ISO 179/1eA    |
| Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm | 3             | 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 | 47            | kJ/m <sup>2</sup> | ISO 179/1eU    |
| <b>THERMAL</b>                              |               |                   |                |
| Vicat Softening Temp, Rate B/50             | 139           | °C                | ASTM D 1525    |
| HDT, 0.45 MPa, 3.2 mm, unannealed           | 133           | °C                | ASTM D 648     |
| HDT, 1.82 MPa, 3.2mm, unannealed            | 119           | °C                | ASTM D 648     |
| CTE, -40°C to 95°C, flow                    | 7.E-05        | 1/°C              | ASTM E 831     |
| CTE, -40°C to 95°C, xflow                   | 7.E-05        | 1/°C              | ASTM E 831     |
| Specific Heat                               | 1.4           | J/g-°C            | ASTM C 351     |
| Thermal Conductivity                        | 0.2           | W/m-°C            | ASTM C 177     |
| Thermal Conductivity                        | 0.2           | W/m-°C            | ISO 8302       |
| CTE, 23°C to 80°C, flow                     | 7.E-05        | 1/°C              | ISO 11359-2    |
| CTE, 23°C to 80°C, xflow                    | 7.E-05        | 1/°C              | ISO 11359-2    |
| Ball Pressure Test, 125°C +/- 2°C           | PASSES        | -                 | IEC 60695-10-2 |



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| <b>THERMAL</b>                          |               |                         |                |
| Ball Pressure Test, approximate maximum | 140           | °C                      | IEC 60695-10-2 |
| Vicat Softening Temp, Rate B/50         | 138           | °C                      | ISO 306        |
| Vicat Softening Temp, Rate B/120        | 140           | °C                      | ISO 306        |
| HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm | 131           | °C                      | ISO 75/Be      |
| HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm | 118           | °C                      | ISO 75/Ae      |
| <b>PHYSICAL</b>                         |               |                         |                |
| Specific Gravity                        | 1.2           | -                       | ASTM D 792     |
| Specific Volume                         | 0.85          | cm <sup>3</sup> /g      | ASTM D 792     |
| Density                                 | 1.17          | g/cm <sup>3</sup>       | ASTM D 792     |
| Water Absorption, 24 hours              | 0.08          | %                       | ASTM D 570     |
| Water Absorption, equilibrium, 23C      | 0.28          | %                       | ASTM D 570     |
| Water Absorption, 50% RH, equilib       | 0.13          | %                       | ASTM D 570     |
| Moisture Absorption, 50% RH, 24 hrs     | 0.04          | %                       | ASTM D 570     |
| Mold Shrinkage, flow, 3.2 mm (5)        | 0.5 - 0.8     | %                       | SABIC Method   |
| Melt Flow Rate, 300°C/1.2 kgf           | 14.5          | g/10 min                | ASTM D 1238    |
| Density                                 | 1.17          | g/cm <sup>3</sup>       | ISO 1183       |
| Water Absorption, (23°C/sat)            | 0.27          | %                       | ISO 62         |
| Moisture Absorption (23°C / 50% RH)     | 0.13          | %                       | ISO 62         |
| Melt Volume Rate, MVR at 300°C/1.2 kg   | 13            | cm <sup>3</sup> /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                        | 1.584         | -                       | ASTM D 542     |
| Refractive Index                        | 1.584         | -                       | ISO 489        |
| <b>ELECTRICAL</b>                       |               |                         |                |
| Volume Resistivity                      | >1.E+17       | Ohm-cm                  | ASTM D 257     |
| Relative Permittivity, 50/60 Hz         | 2.9           | -                       | ASTM D 150     |
| Relative Permittivity, 1 MHz            | 2.8           | -                       | ASTM D 150     |
| Comparative Tracking Index (UL) {PLC}   | 2             | PLC Code                | UL 746A        |



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| PROCESSING PARAMETERS       | TYPICAL VALUE | Unit |
|-----------------------------|---------------|------|
| <b>Injection Molding</b>    |               |      |
| Drying Temperature          | 120           | °C   |
| Drying Time                 | 3 - 4         | hrs  |
| Maximum Moisture Content    | 0.02          | %    |
| Melt Temperature            | 295 - 315     | °C   |
| Nozzle Temperature          | 290 - 310     | °C   |
| Front - Zone 3 Temperature  | 295 - 315     | °C   |
| Middle - Zone 2 Temperature | 280 - 305     | °C   |
| Rear - Zone 1 Temperature   | 260 - 280     | °C   |
| Hopper Temperature          | 60 - 80       | °C   |
| Mold Temperature            | 70 - 95       | °C   |