

**LEXAN\* HPM1914 Resin**GE Plastics - *Polycarbonate*

Unit System:

**Actions**[Legend \(Open\)](#)**General Information****Product Description**

Specialty polycarbonate for medical applications, enhanced for improved biocompatibility with blood contact. Clear resin with excellent processability and high flow. Biocompatible as per ISO 10993, compatible with common sterilization techniques including gamma, EtO, and autoclave.

**General**

Material Status . Commercial: Active

Availability . North America

Test Standards Available . ASTM  
. ISO

|          |                 |                                |
|----------|-----------------|--------------------------------|
| Features | . Autoclavable  | . Processability, Good         |
|          | . Biocompatible | . Radiation Resistant          |
|          | . Copolymer     | . Sterilizable, Ethylene Oxide |
|          | . Flow, High    | . Sterilization, Autoclave     |

Uses . Medical Applications

Forms . Pellets

Processing Method . Injection Molding

**ASTM and ISO Properties <sup>1</sup>**

| <b>Physical</b>                            | <b>Nominal Value Unit</b>   | <b>Test Method</b> |
|--|-----------------------------|--------------------|
| Density -Specific Gravity                  | 1.19 sp gr 23/23°C          | ASTM D792          |
| Density                                    | 1.19 g/cm <sup>3</sup>      | ISO 1183           |
| Melt Mass-Flow Rate (MFR) (200°C/3.8 kg)   | 25.0 g/10 min               | ASTM D1238         |
| Melt Volume-Flow Rate (MVR) (220°C/5.0 kg) | 1.43 in <sup>3</sup> /10min | ISO 1133           |
| Mold Shrink, Linear-Flow (0.126 in)        | 0.0060 to 0.0090 in/in      | ASTM D955          |
| Water Absorption Sat/23C                   | 0.23 %                      | ISO 62             |
| Water Absorption 23C/50RH                  | 0.060 %                     | ISO 62             |
| <b>Mechanical</b>                          | <b>Nominal Value Unit</b>   | <b>Test Method</b> |
| Tensile Modulus <sup>2</sup>               | 336000 psi                  | ASTM D638          |
| Tensile Modulus <sup>3</sup>               | 349000 psi                  | ISO 527-1, -2      |
| Tensile Strength @ Yield <sup>4</sup>      | 8850 psi                    | ASTM D638          |
| Tensile Stress at Yield <sup>2</sup>       | 8700 psi                    | ISO 527-1, -2      |
| Tensile Strength @ Break <sup>4</sup>      | 9280 psi                    | ASTM D638          |
| Tensile Stress at Break <sup>2</sup>       | 9280 psi                    | ISO 527-1, -2      |
| Tensile Elongation @ Yld <sup>4</sup>      | 6.0 %                       | ASTM D638          |

|  |                            |                    |
|--|----------------------------|--------------------|
| Tensile Strain at Yield <sup>2</sup>   | 5.7 %                      | ISO 527-1, -2      |
| Tensile Elongation @ Brk <sup>4</sup>  | 130 %                      | ASTM D638          |
| Tensile Strain at Break <sup>2</sup>   | 120 %                      | ISO 527-1, -2      |
| Flexural Modulus (1.97 in Span) <sup>5</sup>                                   | 346000 psi                 | ASTM D790          |
| Flexural Modulus <sup>6</sup>  | 313000 psi                 | ISO 178            |
| Flexural Strength @ Yield (1.97 in Span) <sup>5</sup>                          | 14400 psi                  | ASTM D790          |
| <b>Impact</b>  | <b>Nominal Value Unit</b>  | <b>Test Method</b> |
| Charpy Notched Impact Strength (73 °F) <sup>7</sup>                            | 32.4 ft·lb/in <sup>2</sup> | ISO 179            |
| Notched Izod Impact  |                            | ASTM D256          |
| (-22 °F)   | 4.44 ft·lb/in              |                    |
| (73 °F)  | 14.3 ft·lb/in              |                    |
| Notched Izod Impact Strength <sup>8</sup>                                      |                            | ISO 180            |
| (-22 °F)   | 7.14 ft·lb/in <sup>2</sup> |                    |
| (73 °F)  | 25.2 ft·lb/in <sup>2</sup> |                    |
| Instrumented Dart Impact (73 °F)   | Total Energy: 699 in·lb    | ASTM D3763         |
| <b>Thermal</b>   | <b>Nominal Value Unit</b>  | <b>Test Method</b> |
| DTUL @264psi - Unannealed (0.126 in)   | 253 °F                     | ASTM D648          |
| HDT A (1.80 MPa) Unannealed <sup>9</sup>                                       | 252 °F                     | ISO 75A-1, -2      |
| Vicat Softening Point (Rate B, Loading 2 (50 N))                               | 284 °F                     | ASTM D1525         |
| Vicat Softening Temperature  |                            | ISO 306            |
| (B120 (120°C/h 50N))   | 289 °F                     |                    |
| (B50 (50°C/h 50N))   | 284 °F                     |                    |
| CLTE, Flow (TMA) (-40 to 104°F (-40 to 40°C))                                  | 0.000042 in/in/°F          | ASTM E831          |
| Coefficient of Linear Thermal Expansion, Flow (73 to 176°F (23 to 80°C))       | 0.000042 in/in/°F          | ISO 11359-1, -2    |
| CLTE, Transverse (TMA) (-40 to 104°F (-40 to 40°C))                            | 0.000043 in/in/°F          | ASTM E831          |
| Coefficient of Linear Thermal Expansion, Transverse (73 to 176°F (23 to 80°C)) | 0.000043 in/in/°F          | ISO 11359-1, -2    |
| <b>Optical</b>   | <b>Nominal Value Unit</b>  | <b>Test Method</b> |
| Transmittance  | 77.0 %                     | ASTM D1003         |
| Haze   | 4.5 %                      | ASTM D1003         |
| <b>Additional Properties</b>   |                            |                    |
| Ball Pressure Test, IEC 60695-10-2, 75°C ± 2°C: PASSES                         |                            |                    |
| Flexural Stress at Yield, ISO 178, 2 mm/min: 92 MPa                            |                            |                    |

## Processing Information

| <b>Injection</b>       | <b>Nominal Value Unit</b> |
|------------------------|---------------------------|
| Drying Temperature     | 250 °F                    |
| Drying Time            | 3.0 to 4.0 hr             |
| Drying Time, Maximum   | 48 hr                     |
| Suggested Max Moisture | 0.020 %                   |
| Suggested Shot Size    | 40 to 60 %                |
| Rear Temperature       | 480 to 520 °F             |
| Middle Temperature     | 500 to 540 °F             |
| Front Temperature      | 520 to 560 °F             |
| Nozzle Temperature     | 510 to 550 °F             |

|                        |                     |
|------------------------|---------------------|
| Processing (Melt) Temp | 520 to 560 °F       |
| Mold Temperature       | 160 to 200 °F       |
| Back Pressure          | 50.0 to 100.0 psi   |
| Screw Speed            | 40 to 70 rpm        |
| Vent Depth             | 0.0010 to 0.0030 in |

### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.

<sup>2</sup> 2.0 in/min

<sup>3</sup> 0.039 in/min

<sup>4</sup> Type I, 2.0 in/min

<sup>5</sup> 0.051 in/min

<sup>6</sup> 0.079 in/min

<sup>7</sup> Type 1, Edgewise, Notch A

<sup>8</sup> Type 1, Notch A

<sup>9</sup> Flatwise, 80\*10\*4 mm, 2.52 in



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