

# LEXAN<sup>TM</sup> COPOLYMER HPC17

REGION ASIA

## DESCRIPTION

ELCRE<sup>TM</sup> HPC17 resin is a High Heat Polycarbonate Copolymer Resin with Vicat of 170°C, specially targeted for healthcare applications. Subject to Healthcare Management of Change, Biocompatible according to ISO 10993 or USP Class VI. This resin is optimized to reduce tendency of yellowing of transparent resins within a broad processing window. It is available in limited colors.

## TYPICAL PROPERTY VALUES

Revision 20191118

| PROPERTIES                                   | TYPICAL VALUES | UNITS             | TEST METHODS |
|----------------------------------------------|----------------|-------------------|--------------|
| <b>MECHANICAL</b>                            |                |                   |              |
| Tensile Stress, yld, Type I, 50 mm/min       | 75             | MPa               | ASTM D 638   |
| Tensile Stress, brk, Type I, 50 mm/min       | 60             | MPa               | ASTM D 638   |
| Tensile Strain, yld, Type I, 50 mm/min       | 7              | %                 | ASTM D 638   |
| Tensile Strain, brk, Type I, 50 mm/min       | >40            | %                 | ASTM D 638   |
| Tensile Modulus, 5 mm/min                    | 2500           | MPa               | ASTM D 638   |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 120            | MPa               | ASTM D 790   |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 2450           | MPa               | ASTM D 790   |
| Tensile Stress, yield, 50 mm/min             | 75             | MPa               | ISO 527      |
| Tensile Stress, break, 50 mm/min             | 60             | MPa               | ISO 527      |
| Tensile Strain, yield, 50 mm/min             | 6.5            | %                 | ISO 527      |
| Tensile Strain, break, 50 mm/min             | >50            | %                 | ISO 527      |
| Tensile Modulus, 1 mm/min                    | 2450           | MPa               | ISO 527      |
| Flexural Stress, yield, 2 mm/min             | 110            | MPa               | ISO 178      |
| Flexural Modulus, 2 mm/min                   | 2500           | MPa               | ISO 178      |
| <b>IMPACT</b>                                |                |                   |              |
| Izod Impact, notched, 23°C                   | 80             | J/m               | ASTM D 256   |
| Izod Impact, notched, -30°C                  | 75             | J/m               | ASTM D 256   |
| Izod Impact, notched 80*10*3 +23°C           | 8              | kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod Impact, notched 80*10*3 -30°C           | 7              | kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod Impact, unnotched 80*10*3 +23°C         | NB             | kJ/m <sup>2</sup> | ISO 180/1U   |
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm   | 10             | kJ/m <sup>2</sup> | ISO 179/1eA  |
| Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm  | 7              | 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  |
| <b>THERMAL</b>                               |                |                   |              |
| Tg (half width)                              | 175            | °C                | SABIC method |
| Vicat Softening Temp, Rate B/120             | 172            | °C                | ASTM D 1525  |
| HDT, 0.45 MPa, 3.2 mm, unannealed            | 165            | °C                | ASTM D 648   |
| HDT, 1.82 MPa, 3.2mm, unannealed             | 152            | °C                | ASTM D 648   |
| CTE, -40°C to 40°C, flow                     | 6.00E-05       | 1/°C              | ISO 11359-2  |
| CTE, -40°C to 40°C, xflow                    | 6.00E-05       | 1/°C              | ISO 11359-2  |
| Vicat Softening Temp, Rate B/120             | 172            | °C                | ISO 306      |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm       | 165            | °C                | ISO 75/Bf    |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm        | 152            | °C                | ISO 75/Af    |

| PROPERTIES                            | TYPICAL VALUES | UNITS                   | TEST METHODS |
|---------------------------------------|----------------|-------------------------|--------------|
| Thermal Conductivity                  | 0.2            | W/m-°C                  | ISO 8302     |
| <b>PHYSICAL</b>                       |                |                         |              |
| Mold Shrinkage, flow, 3.2 mm          | 0.7 – 0.95     | %                       | SABIC method |
| Mold Shrinkage, xflow, 3.2 mm         | 0.7 – 0.95     | %                       | SABIC method |
| Specific Gravity                      | 1.21           | -                       | ASTM D 792   |
| Melt Flow Rate, 330°C/2.16 kgf        | 33             | g/10 min                | ASTM D 1238  |
| Melt Flow Rate, 350°C/2.16 kgf        | 60             | g/10 min                | ASTM D 1238  |
| Density                               | 1.21           | g/cm <sup>3</sup>       | ISO 1183     |
| Water Absorption, (23°C/sat)          | 0.3            | %                       | ISO 62       |
| Moisture Absorption (23°C / 50% RH)   | 0.3            | %                       | ISO 62       |
| Melt Volume Rate, MVR at 330°C/2.16kg | 30             | cm <sup>3</sup> /10 min | ISO 1133     |
| Melt Volume Rate, MVR at 350°C/2.16kg | 55             | cm <sup>3</sup> /10 min | ISO 1133     |
| <b>OPTICAL</b>                        |                |                         |              |
| Refractive Index                      | 1.602          | -                       | ISO 489      |
| Abbe number                           | 30             | -                       | ISO 489      |
| Light Transmission, 1.0 mm            | 89             | %                       | ASTM D1003   |
| Light Transmission at 2.0 mm          | 88             | %                       | ASTM D1003   |
| Light Transmission at 3.0 mm          | 87             | %                       | ASTM D1003   |
| <b>INJECTION MOLDING</b>              |                |                         |              |
| Drying Temperature                    | 135            | °C                      |              |
| Drying Time                           | 4 – 6          | hrs                     |              |
| Maximum Moisture Content              | 0.02           | %                       |              |
| Melt Temperature                      | 300 – 355      | °C                      |              |
| Nozzle Temperature                    | 295 – 350      | °C                      |              |
| Front - Zone 3 Temperature            | 300 – 355      | °C                      |              |
| Middle - Zone 2 Temperature           | 290 – 345      | °C                      |              |
| Rear - Zone 1 Temperature             | 280 – 335      | °C                      |              |
| Mold Temperature                      | 110 – 160      | °C                      |              |
| Back Pressure                         | 0.3 – 0.7      | MPa                     |              |
| Screw Speed                           | 40 – 90        | rpm                     |              |
| Shot to Cylinder Size                 | 40 – 60        | %                       |              |
| Vent Depth                            | 0.025 – 0.08   | mm                      |              |

## 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.