

## EMERGE™ PC 8410-7 LT

### Advanced Resin

#### Overview

EMERGE™ PC 8410-7 LT advanced resin is a transparent, ignition resistant PC resin that contains no chlorinated, brominated or phosphate flame retardant additives. The resin is designed to meet the German norm DIN VDE-0472/ Part 815 on halogens. This resin combines good mechanical and high RTI properties, ensuring longer sustained aesthetics and mechanical resistance, to the applications. EMERGE™ PC 8410-7 LT has a UL 94 V-0 rating at 1.5 mm, and contains mould release agent.

#### Applications:

- Electrical
- Lighting
- Diffusers
- Lenses

| Physical                                     | Nominal Value (English)  | Nominal Value (SI)     | Test Method            |
|----------------------------------------------|--------------------------|------------------------|------------------------|
| Density                                      | 1.20 g/cm <sup>3</sup>   | 1.20 g/cm <sup>3</sup> | ASTM D792<br>ISO 1183  |
| Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)     | 7.0 g/10 min             | 7.0 g/10 min           | ASTM D1238<br>ISO 1133 |
| Molding Shrinkage - Flow                     | 5.0E-3 to 7.0E-3 in/in   | 0.50 to 0.70 %         | ASTM D955<br>ISO 294-4 |
| Mechanical                                   | Nominal Value (English)  | Nominal Value (SI)     | Test Method            |
| Tensile Modulus                              |                          |                        |                        |
| -- 1                                         | 334000 psi               | 2300 MPa               | ASTM D638              |
| --                                           | 348000 psi               | 2400 MPa               | ISO 527-1/1            |
| Tensile Strength                             |                          |                        |                        |
| Yield <sup>2</sup>                           | 8700 psi                 | 60.0 MPa               | ASTM D638              |
| Yield                                        | 8700 psi                 | 60.0 MPa               | ISO 527-2/50           |
| Break <sup>2</sup>                           | 9430 psi                 | 65.0 MPa               | ASTM D638              |
| Break                                        | 10200 psi                | 70.0 MPa               | ISO 527-2/50           |
| Tensile Elongation                           |                          |                        |                        |
| Yield <sup>2</sup>                           | 6.0 %                    | 6.0 %                  | ASTM D638              |
| Yield                                        | 6.0 %                    | 6.0 %                  | ISO 527-2/50           |
| Break <sup>2</sup>                           | 120 %                    | 120 %                  | ASTM D638              |
| Break                                        | 110 %                    | 110 %                  | ISO 527-2/50           |
| Flexural Modulus                             |                          |                        |                        |
| -- 3                                         | 348000 psi               | 2400 MPa               | ASTM D790              |
| -- 4                                         | 341000 psi               | 2350 MPa               | ISO 178                |
| Flexural Strength                            |                          |                        |                        |
| -- 3                                         | 13800 psi                | 95.0 MPa               | ASTM D790              |
| -- 4                                         | 13800 psi                | 95.0 MPa               | ISO 178                |
| Impact                                       | Nominal Value (English)  | Nominal Value (SI)     | Test Method            |
| Charpy Notched Impact Strength (73°F (23°C)) | 17 ft-lb/in <sup>2</sup> | 35 kJ/m <sup>2</sup>   | ISO 179/1eA            |
| Notched Izod Impact                          |                          |                        |                        |
| 73°F (23°C)                                  | 14 ft-lb/in              | 750 J/m                | ASTM D256              |
| 73°F (23°C)                                  | 33 ft-lb/in <sup>2</sup> | 70 kJ/m <sup>2</sup>   | ISO 180/1A             |

| Thermal                                     | Nominal Value (English) | Nominal Value (SI) | Test Method    |
|---------------------------------------------|-------------------------|--------------------|----------------|
| Deflection Temperature Under Load           |                         |                    |                |
| 66 psi (0.45 MPa), Annealed                 | 291 °F                  | 144 °C             | ISO 75-2/B     |
| 264 psi (1.8 MPa), Unannealed               | 261 °F                  | 127 °C             | ASTM D648      |
| 264 psi (1.8 MPa), Unannealed               | 257 °F                  | 125 °C             | ISO 75-2/A     |
| 264 psi (1.8 MPa), Annealed                 | 286 °F                  | 141 °C             | ISO 75-2/A     |
| Vicat Softening Temperature                 | 298 °F                  | 148 °C             | ISO 306/B50    |
| Ball Indentation Temperature                | > 257 °F                | > 125 °C           | IEC 60335-1    |
| CLTE - Flow                                 |                         |                    |                |
| -40 to 176°F (-40 to 80°C)                  | 3.6E-5 in/in/°F         | 6.5E-5 cm/cm/°C    | ASTM D696      |
| --                                          | 3.9E-5 in/in/°F         | 7.0E-5 cm/cm/°C    | ISO 11359-2    |
| Electrical                                  | Nominal Value (English) | Nominal Value (SI) | Test Method    |
| Surface Resistivity                         | > 1.0E+15 ohms          | > 1.0E+15 ohms     | IEC 60093      |
| Volume Resistivity                          | > 1.0E+15 ohms·cm       | > 1.0E+15 ohms·cm  | IEC 60093      |
| Electric Strength                           | 430 V/mil               | 17 kV/mm           | IEC 60243-1    |
| Dissipation Factor                          |                         |                    | IEC 60250      |
| 50 Hz                                       | 1.0E-3                  | 1.0E-3             |                |
| 1 MHz                                       | 2.0E-3                  | 2.0E-3             |                |
| Arc Resistance                              | PLC 7                   | PLC 7              | ASTM D495      |
| Comparative Tracking Index                  |                         |                    | IEC 60112      |
| 0.0787 in (2.00 mm), Solution A             | 225 V                   | 225 V              |                |
| Flammability                                | Nominal Value (English) | Nominal Value (SI) | Test Method    |
| Flame Rating <sup>5</sup>                   |                         |                    | UL 94          |
| 0.030 in (0.75 mm)                          | V-2                     | V-2                |                |
| 0.06 in (1.5 mm)                            | V-0                     | V-0                |                |
| 0.12 in (3.0 mm)                            | V-0                     | V-0                |                |
| Glow Wire Flammability Index <sup>5</sup>   |                         |                    | IEC 60695-2-12 |
| 0.08 in (2.0 mm)                            | 1760 °F                 | 960 °C             |                |
| Glow Wire Ignition Temperature <sup>5</sup> |                         |                    | IEC 60695-2-13 |
| 0.08 in (2.0 mm)                            | 1470 °F                 | 800 °C             |                |
| Oxygen Index <sup>5</sup>                   | 40 %                    | 40 %               | ISO 4589-2     |
| Optical                                     | Nominal Value (English) | Nominal Value (SI) | Test Method    |
| Light Transmittance <sup>6</sup>            | 87.0 to 91.0 %          | 87.0 to 91.0 %     | ASTM D1003     |
| Injection                                   | Nominal Value (English) | Nominal Value (SI) |                |
| Drying Temperature                          | 248 °F                  | 120 °C             |                |
| Drying Time                                 | 3.0 to 4.0 hr           | 3.0 to 4.0 hr      |                |
| Processing (Melt) Temp                      | 518 to 572 °F           | 270 to 300 °C      |                |
| Mold Temperature                            | 158 to 230 °F           | 70 to 110 °C       |                |