

Teijin Kasei America, Inc.



Friday, August 31, 2007

Panlite® L-1225Z 100

Teijin Kasei America, Inc. (Teijin Chemicals) - Polycarbonate

Unit System: **Actions****Legend (Open)****General Information****General**

| | | |
|--------------------------|--|---|
| Material Status | Commercial: Active | |
| Availability | Asia Europe North America | |
| Test Standards Available | ASTM ISO | |
| Features | UV Resistance, Good Viscosity, Low | |
| Uses | Automotive Applications General Purpose | Lenses Parts, Transparent or Translucent |
| Appearance | Clear | |
| Forms | Pellets | |
| Processing Method | Injection Molding | |

ASTM and ISO Properties ¹

| Physical | Nominal Value | Unit | Test Method |
|--|------------------|------------------------|---------------|
| Density -Specific Gravity | 1.20 | sp gr 23/23°C | ASTM D792 |
| Density | 1.20 | g/cm ³ | ISO 1183 |
| Melt Volume-Flow Rate (MVR) (300°C/1.2 kg) | 0.671 | in ³ /10min | ISO 1133 |
| Mold Shrink, Linear-Flow | 0.0050 to 0.0070 | in/in | ASTM D955 |
| Mold Shrink, Linear-Trans | 0.0050 to 0.0070 | in/in | ASTM D955 |
| Molding Shrinkage | | | ISO 294-4 |
| (Across Flow) | 0.50 to 0.70 | % | |
| (Flow) | 0.50 to 0.70 | % | |
| Water Absorption @ 24 hrs (73 °F) | 0.20 | % | ASTM D570 |
| Water Absorption 24h/23C | 0.20 | % | ISO 62 |
| Mechanical | Nominal Value | Unit | Test Method |
| Tensile Modulus | 309000 | psi | ASTM D638 |
| Tensile Modulus ² | 348000 | psi | ISO 527-1, -2 |
| Tensile Strength @ Yield | 9140 | psi | ASTM D638 |
| Tensile Stress at Yield ³ | 8850 | psi | ISO 527-1, -2 |
| Tensile Strength @ Break | 11200 | psi | ASTM D638 |
| Tensile Elongation @ Yld | 6.0 | % | ASTM D638 |
| Tensile Strain at Yield ³ | 6.0 | % | ISO 527-1, -2 |
| Tensile Elongation @ Brk | 140 | % | ASTM D638 |
| Nominal Tensile Strain at Break ³ | 50 | % | ISO 527-1, -2 |
| Flexural Modulus | 328000 | psi | ASTM D790 |
| Flexural Modulus ⁴ | 348000 | psi | ISO 178 |
| Flexural Strength ⁴ | 13600 | psi | ISO 178 |
| Flexural Strength @ Yield | 13500 | psi | ASTM D790 |
| Compressive Strength | 11000 | psi | ASTM D695 |
| Impact | Nominal Value | Unit | Test Method |
| Charpy Notched Impact Strength | 33.8 | ft-lb/in ² | ISO 179 |
| Charpy Unnotched Impact Strength | No Break | ft-lb/in ² | ISO 179 |
| Notched Izod Impact | | | ASTM D256 |
| (0.126 in) | 15.5 | ft-lb/in | |
| (0.252 in) | 2.44 | ft-lb/in | |
| Hardness | Nominal Value | Unit | Test Method |
| Rockwell Hardness (M-Scale) | 77 | | ASTM D785 |
| Thermal | Nominal Value | Unit | Test Method |
| DTUL @66psi - Unannealed | 286 | °F | ASTM D648 |
| HDT B (0.45 MPa) Unannealed | 286 | °F | ISO 75B-1, -2 |
| DTUL @264psi - Unannealed | 268 | °F | ASTM D648 |

| | | |
|---|---------------------------|--------------------|
| HDT A (1.80 MPa) Unannealed | 262 °F | ISO 75A-1, -2 |
| Vicat Softening Temperature (B50 (50°C/h 50N)) | 298 °F | ISO 306 |
| CLTE, Flow | 0.000039 in/in/°F | ASTM D696 |
| Coefficient of Linear Thermal Expansion, Flow | 0.000039 in/in/°F | ISO 11359-1, -2 |
| CLTE, Transverse | 0.000039 in/in/°F | ASTM D696 |
| Coefficient of Linear Thermal Expansion, Transverse | 0.000039 in/in/°F | ISO 11359-1, -2 |
| Electrical | Nominal Value Unit | Test Method |
| Surface Resistivity | 1.0E+15 ohms | IEC 60093 |
| Volume Resistivity | 3.0E+18 ohm-cm | ASTM D257 |
| Volume Resistivity | 1.0E+15 ohm-cm | IEC 60093 |
| Dielectric Strength (0.0630 in) ⁵ | 762 V/mil | ASTM D149 |
| Dielectric Constant | | ASTM D150 |
| (60 Hz) | 2.950 | |
| (1E+6 Hz) | 2.900 | |
| Dissipation Factor | | ASTM D150 |
| (60 Hz) | 0.00040 | |
| (1E+6 Hz) | 0.0090 | |
| Dissipation Factor | | IEC 60250 |
| (100 Hz) | 0.00100 | |
| (1E+6 Hz) | 0.00900 | |
| Arc Resistance | 110 sec | ASTM D495 |
| Comp Track Index | 250 V | IEC 60112 |
| Electric Strength | 760 V/mil | IEC 60243-1 |
| Relative Permittivity | | IEC 60250 |
| (100 Hz) | 3.10 | |
| (1E+6 Hz) | 3.00 | |
| Flammability | Nominal Value Unit | Test Method |
| Flame Rating - UL | | UL 94 |
| (0.0748 in) | HB | |
| (0.0157 in) | V-2 | |
| UL 746 | Nominal Value Unit | Test Method |
| RTI Str (0.0579 in) | 257 °F | UL 746 |
| RTI Imp (0.0579 in) | 239 °F | UL 746 |
| RTI Elec (0.0579 in) | 257 °F | UL 746 |
| Comparative Tracking Index (CTI) | 300 V | UL 746 |
| Optical | Nominal Value Unit | Test Method |
| Refractive Index | 1.585 | ASTM D542 |
| Transmittance (118 mil) | 88.0 % | ASTM D1003 |

Additional Properties

Electric Strength, IEC 60243-1, Short Time Test: 30 MV/m

Notes

- 1 Typical properties: these are not to be construed as specifications.
- 2 0.039 in/min
- 3 2.0 in/min
- 4 0.079 in/min
- 5 Method C (Slow Rate-of-Rise)

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