

STYRON™ 685D

General Purpose Polystyrene Resins

STYRON™ 685D is a high heat resistance, high tensile strength and high stiffness, general purpose polystyrene. It is recommended for applications where tensile and melt strength as well as heat resistance properties are important.

Main Characteristics

- High heat
- Light Blue
- UL94 HB
- FDA compliance

* U.S. FDA 21 CFR177.1640

* Europe Regulation (EU) No 10/2011

* CSA (Canada Standards Association)

Applications

- Media enclosures
- Refrigerator accessories
- Oriented polystyrene sheets

| Properties | Test Method | Unit | Typical Value |
|---------------------------------|-------------|-------------------|---------------|
| Physical | | | |
| Melt Flow Rate (200 deg C/5 kg) | ASTM D1238 | g/10 min | 1.6 |
| Density | ASTM D792 | g/cm ³ | 1.04 |
| Mold Shrinkage | ASTM D955 | in/in | 0.004-0.007 |
| UL 94 Classification @ 1.5 mm | | | HB |

Injection Molded Properties

Mechanical

| | | | |
|----------------------------|-----------|----------|--------|
| Yield, Tensile Strength | ASTM D638 | psi | 8000 |
| Ultimate, Tensile Strength | ASTM D638 | psi | 8000 |
| Break Elongation | ASTM D638 | % | 4 |
| Flexural Strength | ASTM D790 | psi | 15900 |
| Flexural Modulus | ASTM D790 | psi | 470000 |
| Notched Izod @ 23 deg C | ASTM D256 | ft-lb/in | 0.6 |

Compression Molded Properties

Mechanical

| | | | |
|---------------------------|-----------|----------|--------|
| Yield Tensile Strength | ASTM D638 | psi | 6400 |
| Ultimate Tensile Strength | ASTM D638 | psi | 6400 |
| Break Elongation | ASTM D638 | % | 2 |
| Flexural Strength | ASTM D790 | psi | 11600 |
| Flexural Modulus | ASTM D790 | psi | 450000 |
| Notched Izod @ 23 deg C | ASTM D256 | ft-lb/in | 0.2 |

Thermal

| | | | |
|--|------------|-------------|----------|
| Vicat Softening Point | ASTM D1525 | deg C | 108 |
| Deflection Temperature Under Load @ 1.82 Mpa, unannealed | ASTM D648 | deg C | 82.8 |
| Deflection Temperature Under Load @ 1.82 Mpa, annealed | ASTM D648 | deg C | 103 |
| CLTE-Flow | ASTM D696 | cm/cm/deg C | 0.000076 |

Notes

These are typical properties only and are not to be construed as specification. Users should confirm results by their own tests