

Technical Information



STYRON™ 685D

General Purpose Polystyrene Resin

Overview

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.

Characteristics

- High heat

Applications

- Media enclosures
- Refrigerator accessories
- Oriented polystyrene sheets

Complies with

- U.S. FDA 21 CFR 177.1640
- Europe REGULATION (EC) 10/2011
- CAN. HPB NO OBJECTION (WITH LIMITATIONS)
- CSA (Canada Standards Association)
- Consult Regulations for details.

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.04 g/cm ³	1.04 g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	1.5 g/10 min	1.5 g/10 min	ASTM D1238
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength ¹ (Yield, Injection Molded)	7980 psi	55.0 MPa	ASTM D638
Tensile Elongation ¹ (Break, Injection Molded)	4.0 %	4.0 %	ASTM D638
Flexural Modulus (Injection Molded)	470000 psi	3240 MPa	ASTM D790
Flexural Strength (Injection Molded)	16700 psi	115 MPa	ASTM D790
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact (73°F (23°C))	0.60 ft-lb/in	32 J/m	ASTM D256
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			ASTM D648
264 psi (1.8 MPa), Unannealed	181 °F	83.0 °C	
264 psi (1.8 MPa), Annealed	210 °F	99.0 °C	
Vicat Softening Temperature	226 °F	108 °C	ASTM D1525 ²
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating ³ (0.06 in (1.5 mm), ALL)	HB	HB	UL 94

Notes

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

¹ 0.20 in/min (5.0 mm/min)

² Rate B (120°C/h), Loading 1 (10 N)

³ This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.

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