

Technical Information

**STYRON™ 438**
High Impact Polystyrene Resin**Overview**

STYRON™ 438 is a high-impact polystyrene resin with good flow, excellent stiffness, high heat and impact resistance. It is designed for injection molding applications.

Main Characteristics:

- High heat
- Good balance of toughness and stiffness

Complies with:

- U.S. FDA 21 CFR 177.1640
- Consult the regulations for complete details.

Applications:

- Printers
- Food containers
- Household goods

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)	5.0 g/10 min	5.0 g/10 min	ASTM D1238
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength ¹			ASTM D638
Yield, Injection Molded	4790 psi	33.0 MPa	
Break, Injection Molded	4350 psi	30.0 MPa	
Tensile Elongation ¹ (Break, Injection Molded)	40 %	40 %	ASTM D638
Flexural Modulus (Injection Molded)	352000 psi	2430 MPa	ASTM D790
Flexural Strength (Injection Molded)	8560 psi	59.0 MPa	ASTM D790
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact			ASTM D256
73°F (23°C), Injection Molded	1.7 ft·lb/in	91 J/m	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			ASTM D648
264 psi (1.8 MPa), Unannealed	171 °F	77.0 °C	
264 psi (1.8 MPa), Annealed	201 °F	94.0 °C	
Vicat Softening Temperature	221 °F	105 °C	ASTM D1525 ²
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating ³ (0.06 in (1.5 mm))	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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