

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
Molding Shrinkage - Flow	4.0E-3 to 7.0E-3 in/in	0.40 to 0.70 %	
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength			ASTM D638
Yield, Injection Molded	4800 psi	33.1 MPa	
Ultimate, Injection Molded	4400 psi	30.3 MPa	
Tensile Elongation (Break, Injection Molded)	40 %	40 %	ASTM D638
Flexural Modulus (Injection Molded)	372000 psi	2560 MPa	ASTM D790
Flexural Strength (Injection Molded)	8500 psi	58.6 MPa	ASTM D790
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact (73°F (23°C))	1.7 ft-lb/in	91 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	171 °F	77.2 °C	
264 psi (1.8 MPa), Annealed	210 °F	98.9 °C	
Vicat Softening Temperature	221 °F	105 °C	ASTM D1525
CLTE - Flow	4.2E-5 in/in/°F	7.6E-5 cm/cm/°C	ASTM D696
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating ¹ (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 This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.



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