

STYRON™ 5050

High Impact Polystyrene Resin

Overview

STYRON™ 5050 is a high-impact polystyrene resin offering a unique balance combining high flow with excellent appearance, good toughness, and high boss strength and stiffness. It is designed for gas-assist injection molding process and paint-free applications.

Main Characteristics

- High flow
- Uniform appearance
- Gas-assist molding

Applications

- TV cabinets

Complies with:

- U.S. FDA 21 CFR 177.1640
- Consult the regulations for complete 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)	14 g/10 min	14 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, Compression Molded	2000 psi	13.8 MPa	
Yield, Injection Molded	2900 psi	20.0 MPa	
Ultimate, Compression Molded	2320 psi	16.0 MPa	
Ultimate, Injection Molded	2610 psi	18.0 MPa	
Tensile Elongation			ASTM D638
Break, Compression Molded	35 %	35 %	
Break, Injection Molded	40 %	40 %	
Flexural Modulus			ASTM D790
Compression Molded	263000 psi	1810 MPa	
Injection Molded	291000 psi	2010 MPa	
Flexural Strength			ASTM D790
Compression Molded	4300 psi	29.6 MPa	
Injection Molded	5400 psi	37.2 MPa	
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact			ASTM D256
Compression Molded	1.8 ft-lb/in	96 J/m	
Injection Molded	2.3 ft-lb/in	120 J/m	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			ASTM D648
264 psi (1.8 MPa), Unannealed	158 °F	70.0 °C	
264 psi (1.8 MPa), Annealed	194 °F	90.0 °C	
Vicat Softening Temperature	210 °F	98.9 °C	ASTM D1525
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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