

Technical Information



STYRON A-TECH™ 1173

Polystyrene Resin

Overview

STYRON A-TECH™ 1173 advanced technology polystyrene resin is a high impact, environmental stress crack resistant (ESCR) resin for extrusion thermoforming applications. The improved rigidity of this resin allows potential down-gauging and scrap reduction, as well as overall improvements in process efficiency.

Main Characteristics:

- Easy processing
- Outstanding thermoformability
- Good practical toughness
- ESCR performance

Complies with:

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

Applications:

- Large appliance/refrigerator liners
- Other deep draw extrusion thermoforming applications

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)	2.0 g/10 min	2.0 g/10 min	ASTM D1238
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength ¹			ASTM D638
Yield, Injection Molded	2470 psi	17.0 MPa	
Break, Injection Molded	4060 psi	28.0 MPa	
Tensile Elongation ¹ (Break, Injection Molded)	55 %	55 %	ASTM D638
Flexural Modulus (Injection Molded)	219000 psi	1510 MPa	ASTM D790
Flexural Strength (Injection Molded)	5950 psi	41.0 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	90 J/m	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			ASTM D648
264 psi (1.8 MPa), Unannealed	160 °F	71.0 °C	
264 psi (1.8 MPa), Annealed	196 °F	91.0 °C	
Vicat Softening Temperature	219 °F	104 °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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