

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
Molding Shrinkage - Flow	4.0E-3 to 7.0E-3 in/in	0.40 to 0.70 %	ASTM D955
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength			ASTM D638
Yield, Compression Molded	1900 psi	13.1 MPa	
Yield, Injection Molded	2500 psi	17.2 MPa	
Break, Compression Molded	2300 psi	15.9 MPa	
Break, Injection Molded	4000 psi	27.6 MPa	
Tensile Elongation			ASTM D638
Break, Compression Molded	30 %	30 %	
Break, Injection Molded	55 %	55 %	
Flexural Modulus			ASTM D790
Compression Molded	174000 psi	1200 MPa	
Injection Molded	219000 psi	1510 MPa	
Flexural Strength			ASTM D790
Compression Molded	4000 psi	27.6 MPa	
Injection Molded	5900 psi	40.7 MPa	
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact			ASTM D256
73°F (23°C), Compression Molded	1.5 ft-lb/in	80 J/m	
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	71.1 °C	
264 psi (1.8 MPa), Annealed	208 °F	97.8 °C	
Vicat Softening Temperature	219 °F	104 °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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