

STYRON™ A-TECH™ 1175

Polystyrene Resin

Overview

STYRON A-TECH™ 1175 advanced technology polystyrene is a high impact, environmental stress crack resistant (ESCR) resin, designed for extrusion and thermoforming applications, especially for the refrigeration industry. Based on patented technology, this resin allows for potential downgauging and scrap reduction in the thermoforming process through its combination of properties like ESCR, rigidity and thermoforming.

Main characteristics:

- Allows for downgauging
- ESCR to food stuff and hydrocarbons
- Ease of processing in extrusion and thermoforming
- Excellent thermoforming behaviour
- Increased rigidity

Applications:

- Large Appliance / Refrigeration liners
- General extrusion / thermoforming applications requiring ESCR

Complies with:

- Europe REGULATION (EC) 10/2011
- FDA, 21 CFR 177.1640
- Consult the regulations for complete details.

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.05 g/cm ³	1.05 g/cm ³	ISO 1183
Apparent (Bulk) Density ¹	0.60 g/cm ³	0.60 g/cm ³	ISO 60
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	2.8 g/10 min	2.8 g/10 min	ISO 1133
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus	239000 psi	1650 MPa	ISO 527-2/1
Tensile Stress			ISO 527-2/5
Yield	2320 psi	16.0 MPa	
Break	3480 psi	24.0 MPa	
Tensile Strain (Break)	60 %	60 %	ISO 527-2/5
Flexural Modulus ²	239000 psi	1650 MPa	ISO 178
Flexural Stress ²	5510 psi	38.0 MPa	ISO 178
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength (73°F (23°C))	5.0 ft-lb/in ²	11 kJ/m ²	ISO 179/1A
Notched Izod Impact Strength			ISO 180/1A
-4°F (-20°C)	3.9 ft-lb/in ²	8.2 kJ/m ²	
73°F (23°C)	5.1 ft-lb/in ²	11 kJ/m ²	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Heat Deflection Temperature			
66 psi (0.45 MPa), Unannealed	176 °F	80.0 °C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	154 °F	68.0 °C	ISO 75-2/A
Vicat Softening Temperature			
--	212 °F	100 °C	ISO 306/A120
--	192 °F	89.0 °C	ISO 306/B50
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 Granulation 7

² 0.079 in/min (2.0 mm/min)

³ This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.



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