

STYRON X-TECH™ 2175

High Impact Polystyrene Resin

Overview

STYRON X-TECH™ 2175 is an environmental stress crack resistant (ESCR) HIPS resin especially developed for thermoforming and extrusion, especially for the refrigeration industry, the production of inner liners for fridges and freezers. Based on patented Trinseo technology, this resin allows potentially 5 % down gauging of the average sheet extrusion thickness for thermoforming of the inner liners, through its unique combination of ESCR, rigidity and melt strength.

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 appliances / 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	ASTM D792 ISO 1183
Apparent (Bulk) Density	0.60 g/cm ³	0.60 g/cm ³	ASTM D1895 ISO 60
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	2.6 g/10 min	2.6 g/10 min	ASTM D1238 ISO 1133
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus			
-- ¹	247000 psi	1700 MPa	ASTM D638
--	247000 psi	1700 MPa	ISO 527-2/5
Tensile Strength			
Yield ¹	2320 psi	16.0 MPa	ASTM D638
Yield	2320 psi	16.0 MPa	ISO 527-2/5
Break ¹	3770 psi	26.0 MPa	ASTM D638
Break	3770 psi	26.0 MPa	ISO 527-2/5
Tensile Elongation			
Break ¹	63 %	63 %	ASTM D638
Break	63 %	63 %	ISO 527-2/5
Flexural Modulus			
-- ²	261000 psi	1800 MPa	ASTM D790
--	261000 psi	1800 MPa	ISO 178
Flexural Strength			
-- ²	5370 psi	37.0 MPa	ASTM D790
--	5370 psi	37.0 MPa	ISO 178

Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength			ISO 179/1A
-22°F (-30°C)	3.1 ft·lb/in ²	6.6 kJ/m ²	
73°F (23°C)	4.3 ft·lb/in ²	9.1 kJ/m ²	
Notched Izod Impact			ASTM D256
73°F (23°C), 0.126 in (3.20 mm)	1.5 ft·lb/in	82 J/m	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
66 psi (0.45 MPa), Unannealed	180 °F	82.0 °C	ASTM D648 ISO 75-2/B
264 psi (1.8 MPa), Unannealed	156 °F	69.0 °C	ASTM D648 ISO 75-2/A
Vicat Softening Temperature	210 °F	99.0 °C	ISO 306/A120 ASTM D1525 ³
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating ⁴ (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 Method I (3 point load), 0.051 in/min (1.3 mm/min)

³ Rate B (120°C/h), Loading 1 (10 N)

⁴ This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.



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