

STYRON™ HIPS

High Impact Polystyrene Resin

Overview

STYRON™ HIPS is a high clarity, high gloss polystyrene with excellent mechanical properties on thermoformed parts.

Main Characteristics:

- High clarity
- Excellent gloss
- High heat
- High flow
- Easy processing
- Excellent mechanical properties of thermoformed parts

Applications:

- Transparent Packaging Applications: Form Fill Seal (FFS), pre-forms (DFS), Disposables and Bi-Oriented Polystyrene (BOPS).
- Gloss cap-layer for extrusion

Complies with:

- Europe REGULATION (EC) 10/2011
- Meets Essential Req. of 94/62/EC(Packaging)
- U.S. 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
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	6.3 g/10 min	6.3 g/10 min	ASTM D1238 ISO 1133
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus			
0.126 in (3.20 mm) ¹	392000 psi	2700 MPa	ASTM D638
0.126 in (3.20 mm)	392000 psi	2700 MPa	ISO 527-2/5
Tensile Strength			
Yield, 0.126 in (3.20 mm) ¹	4790 psi	33.0 MPa	ASTM D638
Yield, 0.126 in (3.20 mm)	4790 psi	33.0 MPa	ISO 527-2/5
Break, 0.126 in (3.20 mm) ¹	3920 psi	27.0 MPa	ASTM D638
Break, 0.126 in (3.20 mm)	3920 psi	27.0 MPa	ISO 527-2/5
Tensile Elongation			
Break, 0.126 in (3.20 mm) ¹	> 20 %	> 20 %	ASTM D638
Break, 0.126 in (3.20 mm)	> 20 %	> 20 %	ISO 527-2/5
Flexural Modulus			
0.126 in (3.20 mm) ²	377000 psi	2600 MPa	ASTM D790
0.126 in (3.20 mm) ^{3, 4}	377000 psi	2600 MPa	ISO 178
Flexural Strength			
0.126 in (3.20 mm) ²	8990 psi	62.0 MPa	ASTM D790
0.126 in (3.20 mm) ^{3, 4}	8990 psi	62.0 MPa	ISO 178

Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load 264 psi (1.8 MPa), Unannealed	162 °F	72.0 °C	ASTM D648 ISO 75-2/A
Vicat Softening Temperature	212 °F	100 °C	ISO 306/A120 ASTM D1525 ⁵
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating ⁶ (0.06 in (1.5 mm))	HB	HB	UL 94
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Gardner Gloss (60°, Thermoformed)	60	60	ASTM D523

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 0.051 in/min (1.3 mm/min)

⁴ 3 point load

⁵ Rate B (120°C/h), Loading 1 (10 N)

⁶ This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.



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