

STYRON™ A-TECH™ 1110

Polystyrene Resin

Overview

STYRON A-TECH™ 1110 advanced technology polystyrene resin is a high-gloss, high-impact resin for injection molding applications.

Main Characteristics:

- Excellent toughness
- High gloss

Applications:

- Small appliances
- Toys
- Printers
- Remote controls

Complies with:

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

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)	3.0 g/10 min	3.0 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 Modulus			ASTM D638
Compression Molded	254000 psi	1750 MPa	
Injection Molded	270000 psi	1860 MPa	
Tensile Strength			ASTM D638
Yield, Compression Molded	3000 psi	20.7 MPa	
Yield, Injection Molded	3300 psi	22.8 MPa	
Break, Compression Molded	2100 psi	14.5 MPa	
Break, Injection Molded	2800 psi	19.3 MPa	
Tensile Elongation			ASTM D638
Break, Compression Molded	30 %	30 %	
Break, Injection Molded	50 %	50 %	
Flexural Modulus			ASTM D790
Compression Molded	276000 psi	1900 MPa	
Injection Molded	310000 psi	2140 MPa	
Flexural Strength			ASTM D790
Compression Molded	5560 psi	38.3 MPa	
Injection Molded	6500 psi	44.8 MPa	
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact			ASTM D256
73°F (23°C), Compression Molded	2.5 ft-lb/in	130 J/m	
73°F (23°C), Injection Molded	4.5 ft-lb/in	240 J/m	
Gardner Impact (73°F (23°C))	300 in-lb	33.9 J	ASTM D3029

Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			ASTM D648
264 psi (1.8 MPa), Unannealed	163 °F	72.8 °C	
264 psi (1.8 MPa), Annealed	199 °F	92.8 °C	
Vicat Softening Temperature	215 °F	102 °C	ASTM D1525
CLTE - Flow	4.2E-5 in/in/°F	7.6E-5 cm/cm/°C	ASTM D696
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating ¹ (0.06 in (1.5 mm))	HB	HB	UL 94
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Gardner Gloss (60°)	92	92	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 This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.



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