Technical Information

TRINSEO™

STYRON™ CO2RE™ 1175BIO85
Polystyrene Resin

Overview

STYRON™ CO2RE™ 1175BIO85 HIPS is credited with 85% of ISCC+ bio-based feedstocks through mass balance certification. STYRON™ CO2RE™ 1175BIO85 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.

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	1.04	g/cm³	1.04	g/cm³	ISO 1183
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					
-- [1]	239000	psi	1650	MPa	ASTM D638
--	239000	psi	1650	MPa	ISO 527-1/1
Tensile Strength					
Yield, Injection Molded [2]	2180	psi	15.0	MPa	ASTM D638
Yield	2320	psi	16.0	MPa	ISO 527-2/5
Break, Injection Molded [2]	3190	psi	22.0	MPa	ASTM D638
Break	3480	psi	24.0	MPa	ISO 527-2/5
Tensile Elongation					
Break, Injection Molded [2]	60	%	60	%	ASTM D638
Break	60	%	60	%	ISO 527-2/5
Flexural Modulus					
Injection Molded	232000	psi	1600	MPa	ASTM D790
--	239000	psi	1650	MPa	ISO 178
Flexural Strength					
Injection Molded	5080	psi	35.0	MPa	ASTM D790
--	5510	psi	38.0	MPa	ISO 178
Impact	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Notched Izod Impact					
73°F (23°C), Injection Molded	2.2	ft·lb/in	120	J/m	ASTM D256
73°F (23°C)	5.7	ft·lb/in²	12	kJ/m²	ISO 180/1A
Thermal	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Deflection Temperature Under Load					
66 psi (0.45 MPa), Unannealed	176	°F	80.0	°C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	158	°F	70.0	°C	ASTM D648
264 psi (1.8 MPa), Unannealed	154	°F	68.0	°C	ISO 75-2/A
264 psi (1.8 MPa), Annealed	190	°F	88.0	°C	ASTM D648
Vicat Softening Temperature	212	°F	100	°C	ASTM D1525

Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating [3] (0.04 in (1.0 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] 0.039 in/min (1.0 mm/min)

[2] 0.20 in/min (5.0 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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