

TYRIL™ 905UV SAN Resin

Overview

TYRIL* styrene-acrylonitrile (SAN) resins are designed by Styron to offer superior chemical resistance, strength, hardness and dimensional stability in a broad range of product applications. The key property of TYRIL 905 is its superior water-clear clarity compared to other SAN resins and a high thermal stability that results in consistent color (reduced yellowing). TYRIL 905 is designed for applications demanding chemical and heat resistance and offers good processability. TYRIL 905 represents a technology breakthrough in trace-color reduction. Its thermal stability and exceptionally low base color make it a product especially suited for self-coloring. The UV-stabilized version exhibits excellent weather ability, suitable in particular for lighting applications.

Applications:

- Large appliances: transparent refrigerator parts
- Lighting applications: louvers and covers
- Automotive: taillight lenses and reflectors
- Cosmetic packaging: water-clear, thick-wall applications

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.08 g/cm ³	1.08 g/cm ³	ASTM D792 ISO 1183/B
Apparent Density	0.69 g/cm ³	0.69 g/cm ³	ASTM D1895 ISO 60
Melt Mass-Flow Rate (MFR)			ASTM D1238 ISO 1133
220°C/10.0 kg	13 g/10 min	13 g/10 min	
230°C/3.8 kg	5.0 g/10 min	5.0 g/10 min	
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus	522000 psi	3600 MPa	ASTM D638 ISO 527-2
Tensile Strength (Break)	9860 psi	68.0 MPa	ISO 527-2/5 ASTM D638 ¹
Flexural Strength	13800 psi	95.0 MPa	ASTM D790 ISO 178
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Unnotched Impact Strength			ISO 179
73°F (23°C)	7.1 ft-lb/in ²	15 kJ/m ²	
Unnotched Izod Impact Strength (73°F (23°C))	5.7 ft-lb/in ²	12 kJ/m ²	ISO 180
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness (M-Scale)	82	82	ASTM D785 ISO 2039-2
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			ASTM D648 ISO 75-2/A
264 psi (1.8 MPa), Annealed	212 °F	100 °C	
Vicat Softening Temperature			
--	214 °F	101 °C	ASTM D1525 ² ISO 306/B50 ²
--	230 °F	110 °C	ASTM D1525 ³ ISO 306/A120 ³
CLTE - Flow	0.000028 in/in/°F	0.000050 cm/cm/°C	DIN 53752
Specific Heat	0.330 Btu/lb/°F	1380 J/kg/°C	ASTM D2766
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Relative Permittivity (1 MHz)	3.00	3.00	IEC 60250
Dissipation Factor (1 MHz)	0.00010	0.00010	IEC 60250
Electric Strength	230 V/mil	9.1 kV/mm	IEC 60243-1

Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating - UL (0.0630 in (1.60 mm))	HB	HB	UL 94 ⁴

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 Rate A (50°C/h), Loading 2 (50 N)

³ Rate B (120°C/h), Loading 1 (10 N)

⁴ This numerical flame-spread rating is a small-scale test value and is not intended to reflect hazards presented by this or any other material under actual fire conditions.

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