

TYRIL™ 790 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 790 is its high flow that results in excellent processability. TYRIL 790 is specifically designed for end-use applications requiring a good balance of physical properties, optical properties (gloss, clarity or opaqueness), heat resistance and practical toughness.

Applications:

- Tableware: airline serviceware, other multi-cavity applications
- Personal care: combs, toothbrushes
- Electronics: dust covers, display screens

Complies with:

- U.S. FDA 21 CFR 181.32
- European Food-Contact Compliance

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	21 g/10 min	21 g/10 min	
230°C/3.8 kg	9.0 g/10 min	9.0 g/10 min	
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus	551000 psi	3800 MPa	ASTM D638 ISO 527-2
Tensile Strength (Break)	10400 psi	72.0 MPa	ISO 527-2/5 ASTM D638 ¹
Flexural Strength	14200 psi	98.0 MPa	ASTM D790 ISO 178
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Unnotched Impact Strength			ISO 179
73°F (23°C)	7.6 ft·lb/in ²	16 kJ/m ²	
Unnotched Izod Impact Strength (73°F (23°C))	6.2 ft·lb/in ²	13 kJ/m ²	ISO 180
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness (M-Scale)	84	84	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	214 °F	101 °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)	2.80	2.80	IEC 60250
Dissipation Factor (1 MHz)	0.00010	0.00010	IEC 60250

Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
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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