TYRIL™ 790

SAN Resin

Trinseo

Message:

TYRIL* styrene-acrylonitrile (SAN) resins are designed 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 processabiltiy. 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, toothbrshes
Electronics: dust covers, display screens
Complies with:
U.S. FDA 21 CFR 181.32
European Food-Contact Compliance

General Information	
UL YellowCard	E162447-238297
Features	Food Contact Acceptable Good Chemical Resistance Good Dimensional Stability Good Processability Good Strength Good Toughness High Clarity High Flow High Heat Resistance Opticals
Uses	Electrical/Electronic Applications Kitchenware Personal Care
Agency Ratings	EU Food Contact, Unspecified Rating FDA 21 CFR 181.32
Appearance	Clear/Transparent Opaque
Forms	Pellets
Processing Method	Blow Molding Extrusion Injection Molding Sheet Extrusion

Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.08	g/cm³	ASTM D792, ISO 1183/B
--	1080	kg/m³	ISO 1183 [1]
Apparent Density	0.69	g/cm³	ASTM D1895, ISO 60
Melt Mass-Flow Rate (MFR)			ASTM D1238, ISO 1133
220°C/10.0 kg	21	g/10 min	
230°C/3.8 kg	9.0	g/10 min	
Melt volume-flow rate (220°C/10.0 kg)	28.0	cm³/10min	ISO 1133 [2]
Water Absorption			ISO 62 [3]
Saturation	0.10	%	
Equilibrium	0.60	%	
Viscosity number	91.0	cm³/g	ISO 307, 1157, 1628 [4]
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (M-Scale)	84		ASTM D785, ISO 2039-2
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	3800	MPa	ASTM D638, ISO 527-2
Tensile Stress			
Yield	76.0	MPa	ISO 527-2 [5]
Break [6]	72.0	MPa	ASTM D638
Break	72.0	MPa	ISO 527-2/5
Tensile Strain (Yield)	2.6	%	ISO 527-2 [7]
Nominal strain at break	2.6	%	ISO 527-2 [8]
Flexural Strength	98.0	MPa	ASTM D790, ISO 178
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Unnotched Impact Strength			
23°C	16	kJ/m²	ISO 179
-30°C	18.0	kJ/m²	ISO 179/1eU [9]
23°C	17.0	kJ/m²	ISO 179/1eU [10]
Unnotched Izod Impact Strength (23°C)	13	kJ/m²	ISO 180
Tensile notched impact strength (23°C)	17.0	kJ/m²	ISO 8256/1 [11]
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			
1.8 MPa, Annealed	101	°C	ASTM D648, ISO 75-2/A
1.8 MPa	101	°C	ISO 75-2 [12]
Vicat Softening Temperature			
--	101	°C	ASTM D1525, ISO 306/B50 5 [13]
--	110	°C	ASTM D1525, ISO 306/A120 6 [14]
50°C/h, B (50N)	101	°C	ISO 306 [15]

CLTE			
Flow	5.0E-5	cm/cm/°C	DIN 53752, ISO 11359-2 [16]
Transverse	6.0E-5	cm/cm/°C	ISO 11359-2 [17]
Specific Heat	1380	J/kg/°C	ASTM D2766
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface resistivity	> 1.0E+15	ohms	IEC 60093 [18]
Volume resistivity	> 1.0E+13	ohms·m	IEC 60093 [19]
Electric Strength	9.1	kV/mm	IEC 60243-1
Relative Permittivity			
1 MHz	2.80		IEC 60250
100 Hz	3.00		IEC 60250 [20]
Dissipation Factor			
1 MHz	1.0E-4		IEC 60250
100 Hz	8.0E-5		IEC 60250 [21]
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating [22] (1.60 mm)	HB		UL 94
Burning Behav. at 1.6mm nom. thickn. (1.50 mm, UL)	HB		ISO 1210 [23]
NOTE			
1.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
2.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
3.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
4.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
5.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
6.	5.0 mm/min		
7.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
8.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
9.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
10.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		

11.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
12.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
13.	Rate A (50°C/h), Loading 2 (50 N)
14.	Rate B (120°C/h), Loading 1 (10 N)
15.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
16.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
17.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
18.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
19.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
20.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
21.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
22.	This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.
23.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.

Recommended distributors for this material

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