

TYRIL™ 867 E

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 867 is excellent balance of physical properties. TYRIL 867 E is specifically designed to provide good processability, good chemical and heat resistance and very good strength. The UV-stabilized version exhibits excellent weather ability, suitable in particular for extruded sheet and thermoforming applications.

Applications:

Small appliances: transparent kitchen-robot parts

Extruded sheet for shower cabinets, light-diffusers

Housewares: food storage containers

Sanitary accessories: soap dishes, toilet seats

Complies with:

U.S. FDA 21 CFR 181.32

European Food-Contact Compliance

General Information	
UL YellowCard	E162447-238298
Features	Food Contact Acceptable
	Good Chemical Resistance
	Good Dimensional Stability
	Good Processability
	Good Strength
	High Heat Resistance
Uses	Appliances
	Containers
	Household Goods
	Sheet
Agency Ratings	EU Food Contact, Unspecified Rating
	FDA 21 CFR 181.32
Forms	Pellets
Processing Method	Blow Molding
	Extrusion
	Injection Molding
	Sheet Extrusion
	Thermoforming

Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.08	g/cm ³	ASTM D792, ISO 1183/B

--	1080	kg/m ³	ISO 1183 ¹
Apparent Density	0.69	g/cm ³	ASTM D1895, ISO 60
Melt Mass-Flow Rate (MFR)			ASTM D1238, ISO 1133
220°C/10.0 kg	12	g/10 min	
230°C/3.8 kg	4.0	g/10 min	
Melt volume-flow rate (220°C/10.0 kg)	12.0	cm ³ /10min	ISO 1133 ²
Water Absorption			ISO 62 ³
Saturation	0.10	%	
Equilibrium	0.50	%	
Viscosity number	121	cm ³ /g	ISO 307, 1157, 1628 ⁴
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (M-Scale)	83		ASTM D785, ISO 2039-2
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	3700	MPa	ASTM D638, ISO 527-2
Tensile Stress			
Yield	72.0	MPa	ISO 527-2 ⁵
Break ⁶	70.0	MPa	ASTM D638
Break	70.0	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	97.0	MPa	ASTM D790, ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Unnotched Impact Strength			
23°C	17	kJ/m ²	ISO 179
-30°C	18.0	kJ/m ²	ISO 179/1eU ⁹
23°C	17.0	kJ/m ²	ISO 179/1eU ¹⁰
Unnotched Izod Impact Strength (23°C)	14	kJ/m ²	ISO 180
Tensile notched impact strength (23°C)	19.0	kJ/m ²	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)	104	°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	3.00		IEC 60250
100 Hz	3.00		IEC 60250 ²⁰
Dissipation Factor (1 MHz)	1.0E-4		IEC 60250
Flammability	Nominal Value	Unit	Test Method
Flame Rating ²¹ (1.60 mm)	HB		UL 94
Burning Behav. at 1.6mm nom. thickn. (1.50 mm, UL)	HB		ISO 1210 ²²
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.	This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.
22.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.

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