

Ryton® R-4-270BL CN

Syensqo - Polyphenylene Sulfide

General Information

Product Description

Ryton® R-4-270 and R-4-270BL CN, 40% glass fiber reinforced polyphenylene sulfide compounds provide enhanced mechanical strength after constant or repeated exposure to high temperature water.

Its faster crystallization of the melt can result in shorter cycle times.

General

Filler / Reinforcement	• Glass Fiber, 40% Filler by Weight
Features	• Chemical Resistant • Good Processability • High Strength
RoHS Compliance	• RoHS Compliant
Appearance	• Black
Forms	• Pellets

Properties ¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity ²	1.67		ISO 1183
Molding Shrinkage - Flow ³ (0.126 in)	2.0E-3	in/in	Internal Method
Molding Shrinkage - Across Flow ³ (0.126 in)	5.0E-3	in/in	Internal Method
Water Absorption (24 hr, 73°F)	0.010	%	ASTM D570
Water Absorption (Saturation)	0.050	%	Internal Method
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			ISO 527-1
--	2.23E+6	psi	
-- ⁴	2.26E+6	psi	
Tensile Stress			ISO 527-2
--	26100	psi	
-- ⁴	25500	psi	
Tensile Elongation			ISO 527-2
Break	1.6	%	
Break ⁴	1.5	%	
Flexural Modulus	1.89E+6	psi	ISO 178
Flexural Stress	37700	psi	ISO 178
Compressive Strength	41300	psi	ASTM D695
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179
--	3.7	ft·lb/in ²	
-- ⁴	3.7	ft·lb/in ²	
Charpy Unnotched Impact Strength			ISO 179
--	19	ft·lb/in ²	
-- ⁴	21	ft·lb/in ²	
Notched Izod Impact Strength	3.8	ft·lb/in ²	ISO 180/A
Unnotched Izod Impact Strength	19	ft·lb/in ²	ISO 180

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Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load 264 psi, Unannealed	509	°F	ASTM D648
CLTE - Flow -58 to 122°F 212 to 392°F	8.3E-6 5.6E-6	in/in/°F in/in/°F	ISO 11359-2
CLTE - Transverse -58 to 122°F 212 to 392°F	2.5E-5 4.7E-5	in/in/°F in/in/°F	ISO 11359-2
Thermal Conductivity	2.2	Btu·in/hr/ft²/°F	ASTM E1530
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	1.0E+16	ohms·cm	ASTM D257
Dielectric Strength	510	V/mil	ASTM D149
Dielectric Constant 77°F, 1 kHz 77°F, 1 MHz	4.00 4.00		ASTM D150
Dissipation Factor 77°F, 1 kHz 77°F, 1 MHz	2.0E-3 2.0E-3		ASTM D150
Arc Resistance	125	sec	ASTM D495
Comparative Tracking Index (CTI)	PLC 4		UL 746A
Comparative Tracking Index	175	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating ⁵ (0.06 in)	V-0		UL 94
Additional Information	Nominal Value	Unit	
Hydrolytic Stability ⁶ Tensile Strength Retained Weight Gain	> 75 < 0.50	% %	

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	275 to 302	°F
Drying Time	2.0 to 4.0	hr
Rear Temperature	563 to 599	°F
Middle Temperature	581 to 617	°F
Front Temperature	599 to 653	°F
Nozzle Temperature	581 to 617	°F
Processing (Melt) Temp	608 to 626	°F
Mold Temperature	275 to 302	°F

Notes

¹ Typical properties: these are not to be construed as specifications.

² Method A

³ Measured on 102 mm x 102 mm x 3.2 mm plaques, edge gated.

⁴ Conditioned data is meant to simulate 23°C 50% RH equilibrium values. Conditioning of specimens was achieved per ISO 1110 by exposing specimens for 11 days, 70°C and 62% RH.

⁵ This product is not currently UL listed; test results indicate this level of performance.

⁶ Test specimens aged 1000 hours in water at 140°C (284°F).