Ryton® R-4-270BL CN
polyphenylene sulfide

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		
Material Status	• Commercial: Active	
Availability	• Asia Pacific • Europe	• Latin America • North America
Filler / Reinforcement	• Glass Fiber, 40% Filler by Weight	
Features	• Chemical Resistant • Good Processability	• High Strength
RoHS Compliance	• RoHS Compliant	
Appearance	• Black	
Forms	• Pellets	

Physical	Typical Value	Unit	Test method
Density / Specific Gravity [1]	1.67		ISO 1183
Molding Shrinkage [2]			Internal Method
Flow : 3.20 mm	0.20	%	
Across Flow : 3.20 mm	0.50	%	
Water Absorption			
24 hr, 23°C	0.010	%	ASTM D570
Saturation	0.050	%	Internal Method

Mechanical	Typical Value	Unit	Test method
Tensile Modulus			ISO 527-1
--	15400	MPa	
-- [3]	15600	MPa	
Tensile Stress			ISO 527-2
--	180	MPa	
-- [3]	176	MPa	
Tensile Elongation			ISO 527-2
Break	1.6	%	
Break [3]	1.5	%	
Flexural Modulus	13000	MPa	ISO 178
Flexural Stress	260	MPa	ISO 178
Compressive Strength	285	MPa	ASTM D695

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Impact	Typical Value	Unit	Test method
Charpy Notched Impact Strength			ISO 179
--	7.7	kJ/m²	
-- [3]	7.8	kJ/m²	
Charpy Unnotched Impact Strength			ISO 179
--	40	kJ/m²	
-- [3]	44	kJ/m²	
Notched Izod Impact Strength	8.0	kJ/m²	ISO 180/A
Unnotched Izod Impact Strength	40	kJ/m²	ISO 180

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Unannealed	265	°C	
CLTE			ISO 11359-2
Flow : -50 to 50°C	1.5E-5	cm/cm/°C	
Flow : 100 to 200°C	1.0E-5	cm/cm/°C	
Transverse : -50 to 50°C	4.5E-5	cm/cm/°C	
Transverse : 100 to 200°C	8.5E-5	cm/cm/°C	
Thermal Conductivity	0.32	W/m/K	ASTM E1530

Electrical	Typical Value	Unit	Test method
Volume Resistivity	1.0E+16	ohms·cm	ASTM D257
Dielectric Strength	20	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
25°C, 1 kHz	4.00		
25°C, 1 MHz	4.00		
Dissipation Factor			ASTM D150
25°C, 1 kHz	2.0E-3		
25°C, 1 MHz	2.0E-3		
Arc Resistance	125	sec	ASTM D495
Comparative Tracking Index (CTI)	PLC 4		UL 746A
Comparative Tracking Index	175	V	IEC 60112

Flammability	Typical Value	Unit	Test method
Flame Rating [4] (1.6 mm)	V-0		UL 94

Additional Information	Typical Value	Unit
Hydrolytic Stability [5]		
Tensile Strength Retained	> 75	%
Weight Gain	< 0.50	%

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Injection	Typical Value	Unit
Drying Temperature	135 to 150	°C
Drying Time	2.0 to 4.0	hr
Rear Temperature	295 to 315	°C
Middle Temperature	305 to 325	°C
Front Temperature	315 to 345	°C
Nozzle Temperature	305 to 325	°C
Processing (Melt) Temp	320 to 330	°C
Mold Temperature	135 to 150	°C

Notes

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

[1] Method A

[2] Measured on 102 mm x 102 mm x 3.2 mm plaques, edge gated.

[3] 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.

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

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