

Ryton® R-4-220NA

Polyphenylene Sulfide

Solvay Specialty Polymers

Message:

Ryton® R-4-220NA and R-4-220BL 40% glass fiber reinforced polyphenylene sulfide compounds provide enhanced mechanical strength after constant or repeated exposure to high temperature water.

General Information			
UL YellowCard	E95746-102108294		
Filler / Reinforcement	Glass Fiber,40% Filler by Weight		
Features	Good Strength		
Uses	Automotive Applications		
RoHS Compliance	RoHS Compliant		
Appearance	Natural Color		
Forms	Pellets		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.68	g/cm ³	ASTM D792
Molding Shrinkage			
Flow : 3.20 mm	0.20	%	
Across Flow : 3.20 mm	0.50	%	
Water Absorption (23°C, 24 hr)	0.020	%	ASTM D570
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
M-Scale	103		
R-Scale	122		
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			
--	186	MPa	ASTM D638
--	190	MPa	ISO 527-2
Tensile Elongation (Break)	1.6	%	ASTM D638, ISO 527-2
Flexural Modulus			
--	14500	MPa	ASTM D790
--	14000	MPa	ISO 178
Flexural Strength			
--	269	MPa	ASTM D790
--	275	MPa	ISO 178
Compressive Strength	275	MPa	ASTM D695
Poisson's Ratio	0.37		ISO 527
Impact	Nominal Value	Unit	Test Method

Notched Izod Impact			
3.18 mm	91	J/m	ASTM D256
--	9.0	kJ/m ²	ISO 180/A
Unnotched Izod Impact			
3.18 mm	640	J/m	ASTM D4812
--	35	kJ/m ²	ISO 180
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (1.8 MPa, Unannealed)	265	°C	ASTM D648
CLTE			ASTM E831
Flow : -50 to 50°C	1.5E-5	cm/cm/°C	
Flow : 100 to 200°C	1.5E-5	cm/cm/°C	
Transverse : -50 to 50°C	4.0E-5	cm/cm/°C	
Transverse : 100 to 200°C	8.5E-5	cm/cm/°C	
Thermal Conductivity	0.31	W/m/K	
UL Temperature Rating	200 to 220	°C	UL 746B
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.0E+16	ohms	ASTM D257
Volume Resistivity	1.0E+16	ohms·cm	ASTM D257
Dielectric Strength	22	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
25°C, 1 kHz	3.80		
25°C, 1 MHz	3.80		
Dissipation Factor			ASTM D150
25°C, 1 kHz	2.0E-3		
25°C, 1 MHz	3.0E-3		
Arc Resistance	125	sec	ASTM D495
Comparative Tracking Index (CTI)	150	V	UL 746
Flammability	Nominal Value	Unit	Test Method
Flame Rating (1.60 mm)	V-0		UL 94
Oxygen Index	45	%	ASTM D2863
Additional Information	Nominal Value	Unit	
Hydrolytic Stability ¹			
Tensile Strength Retained	> 80	%	
Weight Gain	< 1.0	%	
NOTE			

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

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