Ryton® R-7-120NA
polyphenylene sulfide

Ryton® R-7-120NA and R-7-120BL glass fiber and mineral filled polyphenylene sulfide compounds provide good strength and low maintenance molding using conventional molding equipment.

General		
Material Status	• Commercial: Active	
Availability	• Asia Pacific • Europe	• Latin America • North America
Filler / Reinforcement	• Glass Fiber\Mineral	
Features	• Good Strength	
Uses	• Automotive Applications	
RoHS Compliance	• RoHS Compliant	
Automotive Specifications	• FORD WSF-M4D803-A2	• GM GMP.PPS.002
Appearance	• Natural Color	
Forms	• Pellets	
Processing Method	• Injection Molding	

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.99		ASTM D792
Molding Shrinkage			ISO 294-4
Across Flow : 3.20 mm	0.40	%	
Flow : 3.20 mm	0.20	%	
Water Absorption			
24 hr, 23°C	0.018	%	ISO 62
Saturation, 23°C	0.13	%	Internal Method

Mechanical	Typical Value	Unit	Test method
Tensile Modulus			ISO 527-2
--	21000	MPa	
--[1]	19900	MPa	
Tensile Stress			
--	140	MPa	ISO 527-2
--	131	MPa	ASTM D638
--[1]	129	MPa	ISO 527-2
Tensile Strain			
Break	0.90	%	ISO 527-2 ASTM D638
Break[1]	1.1	%	ISO 527-2
Flexural Modulus			
--	19000	MPa	ISO 178
--	19300	MPa	ASTM D790

Mechanical	Typical Value	Unit	Test method
Flexural Stress			
--	220	MPa	ISO 178
--	207	MPa	ASTM D790
Compressive Strength	265	MPa	ASTM D695
Poisson's Ratio	0.36		ISO 527

Impact	Typical Value	Unit	Test method
Charpy Notched Impact Strength			ISO 179
--	5.6	kJ/m²	
-- [1]	6.0	kJ/m²	
Charpy Unnotched Impact Strength			ISO 179
--	16	kJ/m²	
-- [1]	19	kJ/m²	
Notched Izod Impact			
3.18 mm	59	J/m	ASTM D256
--	6.0	kJ/m²	ISO 180/A
Unnotched Izod Impact			
3.18 mm	210	J/m	ASTM D4812
--	15	kJ/m²	ISO 180

Hardness	Typical Value	Unit	Test method
Rockwell Hardness			ASTM D785
M-Scale	101		
R-Scale	118		

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Unannealed	265	°C	
Melting Temperature	280	°C	ISO 11357-3
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	3.0E-5	cm/cm/°C	
Transverse : 100 to 200°C	7.0E-5	cm/cm/°C	
Thermal Conductivity	0.59	W/m/K	Internal Method
UL Temperature Rating	220 to 240	°C	UL 746B

Electrical	Typical Value	Unit	Test method
Surface Resistivity	1.0E+16	ohms	ASTM D257
Volume Resistivity	1.0E+15	ohms·cm	ASTM D257
Dielectric Strength	16	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
25°C, 1 kHz	4.90		
25°C, 1 MHz	4.90		

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Electrical	Typical Value	Unit	Test method
Dissipation Factor			ASTM D150
25°C, 1 kHz	4.0E-3		
25°C, 1 MHz	2.0E-3		
Arc Resistance	185	sec	ASTM D495
Comparative Tracking Index (CTI)	PLC 2		UL 746A
Insulation Resistance [2] (90°C)	1.0E+11	ohms	Internal Method

Flammability	Typical Value	Unit	Test method
Flame Rating (0.8 mm)	• V-0 • 5VA		UL 94
Oxygen Index	61	%	ASTM D2863

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] 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.

[2] 95%RH, 48 hr

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