

NORYL™ WCA901 resin

Polyphenylene Ether + TPE

SABIC Innovative Plastics

Message:

Non-Halogenated flame retardant, flexible NORYL resin intended for evaluation in wire and cable applications, capable of meeting VW-1 and 105°C end use temperature requirements as defined by UL 1581. Good processing performance by using standard extrusion equipment. UL1581 tests conducted on 2.0 mm wire with 0.12 mm x 20 stranded copper conductor.

General Information			
Additive	Flame retardancy		
Features	Workability, good		
	Good flexibility		
	Halogen-free		
	Flame retardancy		
Uses	Wire and cable applications		
Agency Ratings	UL 1581		
Processing Method	Extrusion coating		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.10	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (250°C/10.0 kg)	10	g/10 min	ASTM D1238
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore A, 30 sec)	91		ASTM D2240
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			
Fracture	26.0	MPa	UL 1581
Fracture ¹	23.0	MPa	ASTM D638
Fracture, 136°C ²	27.0	MPa	UL 1581
Fracture	22.0	MPa	ISO 527-2/50
Tensile Elongation			
Fracture	190	%	UL 1581
Fracture ³	110	%	ASTM D638
Fracture, 136°C ⁴	130	%	UL 1581
Fracture	95	%	ISO 527-2/50
Flexural Modulus ⁵			
100mm span	390	MPa	ASTM D790
--	390	MPa	ISO 178
Films	Nominal Value	Unit	Test Method
Trouser Tear Resistance	13.0	N/mm	ISO 6383-1
Thermal	Nominal Value	Unit	Test Method

Brittleness Temperature	< -40.0	°C	ASTM D746
UL Temperature Rating	105	°C	UL 1581
Heat Deformation ⁶ (121°C)	15	%	UL 1581
VW-1	Pass		UL 1581
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	4.2E+16	ohms	ASTM D257
Volume Resistivity	5.1E+15	ohms·cm	ASTM D257
Relative Permittivity (1 MHz)	2.70		IEC 60250
Dissipation Factor (1 MHz)	4.0E-3		IEC 60250
Comparative Tracking Index	600	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating (6.00 mm, Testing by SABIC)	V-0		UL 94
Glow Wire Flammability Index (3.00 mm)	850	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (3.00 mm)	775	°C	IEC 60695-2-13
Oxygen Index	27	%	ISO 4589-2
Extrusion	Nominal Value	Unit	
Drying Temperature	75.0 - 85.0	°C	
Drying Time	5.0 - 7.0	hr	
Suggested Max Moisture	0.020	%	
Cylinder Zone 1 Temp.	200 - 240	°C	
Cylinder Zone 3 Temp.	240 - 270	°C	
Cylinder Zone 5 Temp.	240 - 270	°C	
Melt Temperature	240 - 270	°C	
Die Temperature	240 - 270	°C	
Extrusion instructions			
Conductor Pre-heat Temperature: 80 - 150 °CCooling Water Air Gap: 100 - 200 mmCross-head Temperature: 240 - 270 °CDrying Time (Cumulative): 12 hrsExtruder Length/Diameter Ratio (L/D): 22:1 to 26:1Neck Temperature: 240 - 270 °CScreen Pack: 150 - 100Screw Speed: 15 - 85 rpmWater Bath Temperature: 15 - 45 °C			
NOTE			
1.	Type 1, 50mm/min		
2.	After 7 days		
3.	Type 1, 50mm/min		
4.	After 7 days		
5.	13 mm/min		
6.	250 g		

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