

NORYL™ WCA875 resin

Polyphenylene Ether + TPE

SABIC Innovative Plastics Asia Pacific

Message:

Non-halogenated flame retardant Flexible NORYL extrusion grade intended for evaluation in applications such as wire insulation and cable jacket. Excellent flame retardant performance with balanced tensile elongation, capable of VW-1 performance and 105C temperature rating as defined by UL 1581. 87 Shore A hardness. Processing typically conducted on standard extrusion equipment. UL 1581 tests conducted on 2.0mm wire with 0.12mm X 20 stranded copper conductor.

General Information			
Features	Good flexibility		
	Halogen-free		
	Flame retardancy		
Uses	Wire and cable applications		
	Insulating material		
	Flexible sheath material		
Wire Types	VW-1		
Processing Method	Extrusion coating		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.03	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (250°C/10.0 kg)	16	g/10 min	ASTM D1238
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore A, 30 sec)	87		ASTM D2240
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			
Fracture	27.0	MPa	UL 1581
Fracture ¹	16.0	MPa	ASTM D638
Fracture, 136°C ²	26.0	MPa	UL 1581
Fracture	16.0	MPa	ISO 527-2/50
Tensile Elongation			
Fracture	250	%	UL 1581
Fracture ³	180	%	ASTM D638
Fracture, 136°C ⁴	190	%	UL 1581
Fracture	170	%	ISO 527-2/50
Flexural Modulus ⁵			
100mm span	48.0	MPa	ASTM D790
--	45.0	MPa	ISO 178
Thermal	Nominal Value	Unit	Test Method

Brittleness Temperature	< -40.0	°C	ASTM D746
UL Temperature Rating	105	°C	UL 1581
Heat Deformation (121°C) ⁶	10	%	UL 1581
VW-1	Pass		UL 1581
Smoke Density			ASTM E662
Flame, 0.5 mm plaque, Ds, max	150		ASTM E662
Non-Flame, 0.5 mm plaque, Ds, max	110		ASTM E662
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	2.2 - 1.0E+17	ohms·cm	ASTM D257
Dielectric Strength (2.00 mm, in Oil)	23	kV/mm	IEC 60243-1
Relative Permittivity (1 MHz)	2.70		IEC 60250
Dissipation Factor (1 MHz)	3.5E-3		IEC 60250
Comparative Tracking Index	600	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Glow Wire Flammability Index (3.00 mm)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (3.00 mm)	800	°C	IEC 60695-2-13
Oxygen Index	29	%	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.	180 - 220	°C	
Cylinder Zone 3 Temp.	220 - 250	°C	
Cylinder Zone 5 Temp.	220 - 250	°C	
Melt Temperature	220 - 250	°C	
Die Temperature	220 - 250	°C	
Extrusion instructions			
Conductor Pre-heat Temperature: 25 - 120 °CCooling Water Air Gap: 100 - 200 mmCross-head Temperature: 220 - 250 °CDrying Time (Cumulative): 12 hrsExtruder Length/Diameter Ratio (L/D): 22:1 to 26:1Neck Temperature: 220 - 250 °CScreen Pack: 150 - 100Screw Speed: 15 - 85 rpmWater Bath Temperature: 15 - 60 °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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Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

