

NORYL™ WCD933 resin

Polyphenylene Ether + TPE

SABIC Innovative Plastics

Message:

Flexible and non-halogenated flame retardant extrusion grade intended for evaluation in applications such as insulation of HD 21.14 flexible cables. Flame retardant performance capable of meeting EN 50265-2-1 requirement. 93 Shore A hardness. Processing typically conducted on standard extrusion equipment. Wire tests conducted on 2.0 mm wire with 0.12 mm x 20 stranded copper conductor.

General Information			
Features	Good flexibility		
	Halogen-free		
	Flame retardancy		
Uses	Insulating material		
Agency Ratings	EN 50265-2-1		
Processing Method	Extrusion coating		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.33	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (250°C/10.0 kg)	8.5	g/10 min	ASTM D1238
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore A, 30 sec)	93		ASTM D2240
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			
Fracture	15.0	MPa	UL 1581
Fracture ¹	9.00	MPa	ASTM D638
Fracture, 80°C ²	15.0	MPa	UL 1581
Fracture	9.00	MPa	ISO 527-2/50
Tensile Elongation			
Fracture	310	%	UL 1581
Fracture ³	130	%	ASTM D638
Fracture, 80°C ⁴	270	%	UL 1581
Fracture	180	%	ISO 527-2/50
Flexural Modulus ⁵			
100mm span	160	MPa	ASTM D790
--	135	MPa	ISO 178
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	< -40.0	°C	ASTM D746
Heat Deformation (100°C) ⁶	10	%	UL 1581
Vertical Flame Test	PASSES		EN 50265-2-1
Smoke Density			ASTM E662

Flame, 0.5 mm plaque, Ds, max	56		ASTM E662
Non-Flame, 0.5 mm plaque, Ds, max	150		ASTM E662
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	2.0E+15	ohms·cm	ASTM D257
Dielectric Strength (2.00 mm, in Oil)	23	kV/mm	IEC 60243-1
Dielectric Constant (1 MHz)	3.00		ASTM D150
Dissipation Factor (1 MHz)	1.0E-3		ASTM D150
Comparative Tracking Index	600	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Glow Wire Flammability Index (3.00 mm)	750	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (3.00 mm)	775	°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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