FLEX NORYL™ RESIN WCD933

REGION ASIA

DESCRIPTION

FLEX NORYL™ WCD933 resin is a flexible, non-reinforced extrudable blend of Polyphenylene Ether (PPE) + Thermoplastic Elastomer (TPE). This material contains non-halogenated flame retardant and performance capable of meeting EN 50265-2-1 requirement. FLEX NORYL WCD795 resin is intended for evaluation in AC cable insulation applications such as HD 21.14 flexible cables. It has a Shore A Hardness reading of 93 and exhibits superior thermal stability, very low water absorption, good electric properties, and low specific gravity. Processing is typically conducted on standard extrusion equipment, and UL 1581 testing is conducted on 2.0mm wire with 0.12mm X 20 stranded copper conductor.

TYPICAL PROPERTY VALUES

Revision 20190108

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, brk, Type I, 50 mm/min	9	MPa	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	130	%	ASTM D 638
Flexural Modulus, 12.5 mm/min, 100 mm span	160	MPa	ASTM D 790
Hardness, Shore A, 30S reading	93	-	ASTM D 2240
Tensile Stress, break, 50 mm/min	9	MPa	ISO 527
Tensile Strain, break, 50 mm/min	175	%	ISO 527
Flexural Modulus, 12.5 mm/min	130	MPa	ISO 178
IMPACT			
Brittleness Temperature	<-40	°C	ASTM D 746
PHYSICAL			
Specific Gravity	1.33	-	ASTM D 792
Melt Flow Rate, 250°C/10.0 kgf	8.5	g/10 min	ASTM D 1238
ELECTRICAL			
Volume Resistivity	2.E+15	Ohm-cm	ASTM D 257
Relative Permittivity, 1 MHz	3	-	ASTM D 150
Dissipation Factor, 1 MHz	0.001	-	ASTM D 150
Dielectric strength in oil, 2.0mm	22.9	kV/mm	IEC 60243-1
Comparative Tracking Index	600	V	IEC 60112
FLAME CHARACTERISTICS			
Smoke Density on 0.5mm plaque, Non-flame, Ds, max	152	-	ASTM E 662
Smoke Density on 0.5mm plaque, Flame, Ds, max	56	-	ASTM E 662
Glow Wire Flammability Index 750°C, passes at	3	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 3.0 mm	775	°C	IEC 60695-2-13
Oxygen Index (LOI)	29	%	ISO 4589
WIRE AND CABLE - UL 1581 TESTED ON 2.0MM WIRE WITH 0.12MMX20 STRANDED COPPER			
Tensile strength @ break	15	MPa	UL 1581
Tensile elongation @ break	306	%	UL 1581
Tensile strength @ break after 7days @80°C	15	MPa	UL 1581
Tensile elongation @ break after 7days @80°C	267	%	UL 1581
Heat Deformation at 100°C/250g	10	%	UL 1581
Vertical Flame Test	PASSES	-	EN 50265-2-1

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
WIRE COATING EXTRUSION			
Drying Temperature	75 – 85	°C	
Drying Time	5 – 7	hrs	
Drying Time (Cumulative)	12	hrs	
Maximum Moisture Content	0.02	%	
Extruder Length/Diameter Ratio (L/D)	22:1 to 26:1	-	
Screw Speed	15 – 85	rpm	
Feed Zone Temperature	180 – 220	°C	
Middle Zone Temperatures	220 – 250	°C	
Head Zone Temperature	220 – 250	°C	
Neck Temperature	220 – 250	°C	
Cross-head Temperature	220 – 250	°C	
Die Temperature	220 – 250	°C	
Melt Temperature	220 – 250	°C	
Conductor Pre-heat Temperature	25 – 120	°C	
Screen Pack	150 – 100	-	
Cooling Water Air Gap	100 – 200	mm	
Water Bath Temperature	15 – 60	°C	

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