FLEX NORYL™ RESIN WCD855

REGION ASIA

DESCRIPTION

FLEX NORYL™ WCD855 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 UL 1581 VW-1 requirements. FLEX NORYL WCD855 resin is intended for evaluation in AC cable jacket applications that require UL62 at 90C or 105C temperature rating and black color. It has a Shore A Hardness reading of 85 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 20191010

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, brk, Type I, 50 mm/min	16	MPa	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	260	%	ASTM D 638
Flexural Modulus, 12.5 mm/min, 100 mm span	60	MPa	ASTM D 790
Hardness, Shore A, 30S reading	85	-	ASTM D 2240
Tensile Stress, break, 50 mm/min	16	MPa	ISO 527
Tensile Strain, break, 50 mm/min	250	%	ISO 527
Flexural Modulus, 12.5 mm/min	40	MPa	ISO 178
IMPACT			
Brittleness Temperature	<-40	°C	ASTM D 746
PHYSICAL			
Specific Gravity	1.01	-	ASTM D 792
Melt Flow Rate, 250°C/10.0 kgf	16	g/10 min	ASTM D 1238
ELECTRICAL			
Volume Resistivity	1.9E+16	Ohm-cm	ASTM D 257
Relative Permittivity, 1 MHz	2.4	-	ASTM D 150
Dissipation Factor, 1 MHz	0.007	-	ASTM D 150
Dielectric strength in oil, 2.0mm	25	kV/mm	IEC 60243-1
Comparative Tracking Index (1)	600	V	IEC 60112
FLAME CHARACTERISTICS (2)			
UL Yellow Card Link	E207780-101533056	-	-
UL Recognized, 94HB Flame Class Rating	≥0.8	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	≥6	mm	UL 94
Smoke Density on 0.5mm plaque, Non-flame, Ds, max	47	-	ASTM E 662
Smoke Density on 0.5mm plaque, Flame, Ds, max	110	-	ASTM E 662
Glow Wire Flammability Index 850°C, passes at (1)	3	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 3.0 mm (1)	825	°C	IEC 60695-2-13
Oxygen Index (LOI)	26	%	ISO 4589
WIRE AND CABLE - UL 1581 TESTED ON 2.0MM WIRE WITH 0.12MMX20 STRANDED COPPER			
Tensile strength @ break	23	MPa	UL 1581
Tensile elongation @ break	308	%	UL 1581
Tensile strength @ break after 7days @136°C	22	MPa	UL 1581

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Tensile elongation @ break after 7days @136°C	251	%	UL 1581
Heat Deformation at 121°C/250g	5	%	UL 1581
VW-1	Pass	-	UL 1581
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	

(1) Value shown here is based on internal measurement.

(2) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

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