FLEX NORYL™ RESIN WCD841U

REGION ASIA

DESCRIPTION

FLEX NORYL™ WCD841U resin is a flexible, non-reinforced, UV stabilized extrudable blend of Polyphenylene Ether (PPE) + Thermoplastic Elastomer (TPE). This material contains non-halogenated flame retardant and performance capable of meeting UL VW-1 requirements, 80C end use temperature rating, and heat deformation performance as defined by UL 1581. FLEX NORYL WCD841U resin is intended for evaluation in wire insulation and cable jacket applications in light colors. It has a Shore A Hardness reading of 84 and exhibits superior thermal stability, very low water absorption, good electric properties, low specific gravity, and good color stability after UV weathering per ASTM D4459. 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	18	MPa	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	250	%	ASTM D 638
Flexural Modulus, 12.5 mm/min, 100 mm span	90	MPa	ASTM D 790
Hardness, Shore A, 30S reading	84	-	ASTM D 2240
Tensile Stress, break, 50 mm/min	17	MPa	ISO 527
Tensile Strain, break, 50 mm/min	220	%	ISO 527
Flexural Modulus, 12.5 mm/min	90	MPa	ISO 178
IMPACT			
Brittleness Temperature	<-40	°C	ASTM D 746
PHYSICAL			
Specific Gravity	1.08	-	ASTM D 792
Melt Flow Rate, 250°C/5.0 kgf	23	g/10 min	ASTM D 1238
ELECTRICAL			
Volume Resistivity	4.2E+15	Ohm-cm	ASTM D 257
Relative Permittivity, 1 MHz	2.6	-	ASTM D 150
Dissipation Factor, 1 MHz	0.006	-	ASTM D 150
Dielectric strength in oil, 2.0mm	21.5	kV/mm	IEC 60243-1
Comparative Tracking Index	600	V	IEC 60112
FLAME CHARACTERISTICS			
Smoke Density on 0.5mm plaque, Non-flame, Ds, max	170	-	ASTM E 662
Smoke Density on 0.5mm plaque, Flame, Ds, max	133	-	ASTM E 662
Glow Wire Flammability Index 960°C, passes at	3	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 3.0 mm	750	°C	IEC 60695-2-13
Oxygen Index (LOI)	25	%	ISO 4589
WIRE AND CABLE - UL 1581 TESTED ON 2.0MM WIRE WITH 0.12MMX20 STRANDED COPPER			
Tensile strength @ break	18	MPa	UL 1581
Tensile elongation @ break	295	%	UL 1581
Tensile strength @ break after 7days @113°C	20	MPa	UL 1581
Tensile elongation @ break after 7days @113°C	238	%	UL 1581
UL temperature rating	80	°C	UL 1581
Heat Deformation at 100°C/250g	19	%	UL 1581

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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	

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