FLEX NORYL™ RESIN WCD841U

REGION EUROPE

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.

GENERAL INFORMATION	
Features	Flame Retardant, Good Processability, Hydrolytic Stability, Low Warpage, Thin Wall, Flexible, Low Moisture Absorption, Low Specific Gravity, Non Cl/Br flame retardant, Non halogenated flame retardant, Creep resistant, Dimensional stability, Impact resistant, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polyphenylene Ether + TPE (PPE+TPE)
Processing Techniques	Wire Coating Extrusion

INDUSTRY	SUB INDUSTRY
Electrical and Electronics	Mobile Phone - Computer - Tablets
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20241016

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, brk, Type I, 50 mm/min	18	MPa	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	250	%	ASTM D638
Flexural Modulus, 12.5 mm/min, 100 mm span	90	MPa	ASTM D790
Hardness, Shore A, 30S reading	84	-	ASTM D2240
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 [1]			
Brittleness Temperature	<-40	°C	ASTM D746
PHYSICAL [1]			
Specific Gravity	1.08	-	ASTM D792
Melt Flow Rate, 250°C/5.0 kgf	23	g/10 min	ASTM D1238
ELECTRICAL [1]			
Volume Resistivity	4.2E+15	Ω.cm	ASTM D257
Relative Permittivity, 1 MHz	2.6	-	ASTM D150
Dissipation Factor, 1 MHz	0.006	-	ASTM D150
Dielectric strength in oil, 2.0mm	21.5	kV/mm	IEC 60243-1
Comparative Tracking Index	600	V	IEC 60112

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
FLAME CHARACTERISTICS			
Smoke Density on 0.5mm plaque, Non-flame, Ds, max	170	-	ASTM E662
Smoke Density on 0.5mm plaque, Flame, Ds, max	133	-	ASTM E662
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
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) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

DISCLAIMER