FLEX NORYL™ RESIN WCA901

REGION AMERICAS

DESCRIPTION

FLEX NORYL™ WCA901 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 VW-1 requirements, 105C end use temperature rating, and heat deformation performance as defined by UL 1581. FLEX NORYL WCA901 resin is intended for evaluation in wire and cable applications. It has a Shore A Hardness reading of 91 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 20190717

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, brk, Type I, 50 mm/min	23	MPa	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	110	%	ASTM D 638
Flexural Modulus, 12.5 mm/min, 100 mm span	390	MPa	ASTM D 790
Hardness, Shore A, 30S reading	91	-	ASTM D 2240
Tensile Stress, break, 50 mm/min	22	MPa	ISO 527
Tensile Strain, break, 50 mm/min	95	%	ISO 527
Flexural Modulus, 12.5 mm/min	390	MPa	ISO 178
Tear strength	13	N/mm	ISO 6383
IMPACT			
Brittleness Temperature	<-40	°C	ASTM D 746
PHYSICAL			
Specific Gravity	1.1	-	ASTM D 792
Melt Flow Rate, 250°C/10.0 kgf	10	g/10 min	ASTM D 1238
ELECTRICAL			
Volume Resistivity	5.1E+15	Ohm-cm	ASTM D 257
Surface Resistivity	4.2E+16	Ohm	ASTM D 257
Relative Permittivity, 1 MHz	2.7	-	IEC 60250
Dissipation Factor, 1 MHz	0.004	-	IEC 60250
Comparative Tracking Index [1]	600	V	IEC 60112
FLAME CHARACTERISTICS [2]			
Oxygen Index (LOI)	27	%	ISO 4589
WIRE AND CABLE - UL 1581 TESTED ON 2.0MM WIRE WITH 0.12MMX20 STRANDED COPPER			
Tensile strength @ break	26	MPa	UL 1581
Tensile elongation @ break	190	%	UL 1581
Tensile strength @ break after 7days @136°C	27	MPa	UL 1581
Tensile elongation @ break after 7days @136°C	127	%	UL 1581
UL temperature rating	105	°C	UL 1581
Heat Deformation at 121°C/250g	15	%	UL 1581
VW-1	Pass	-	UL 1581
WIRE COATING EXTRUSION			
Drying Temperature	75 – 85	°C	

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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	200 – 240	°C	
Middle Zone Temperatures	240 – 270	°C	
Head Zone Temperature	240 – 270	°C	
Neck Temperature	240 – 270	°C	
Cross-head Temperature	240 – 270	°C	
Die Temperature	240 – 270	°C	
Melt Temperature	240 – 270	°C	
Conductor Pre-heat Temperature	80 – 150	°C	
Screen Pack	150 – 100	-	
Cooling Water Air Gap	100 – 200	mm	
Water Bath Temperature	15 – 45	°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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