FLEX NORYL™ RESIN WCV063

REGION ASIA

DESCRIPTION

FLEX NORYL™ WCV063 resin is a flexible, non-reinforced extrudable blend of Polyphenylene Ether (PPE) + Thermoplastic Elastomer (TPE). This material contains non-halogenated flame retardant and carries UL VW-1 and UL94 V0 ratings along with a Shore D Hardness reading of 63. FLEX NORYL WCV063 resin was developed for evaluation in automotive wire + cable applications requiring ISO6722 Class A or B. It exhibits ultra thin-wall capability, Good scratch abrasion and pinch resistance, High dimensional stability, low shrinkage and warpage, Very low water absorption, chemical resistance, and good dieletrcic strength. 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, yld, Type I, 50 mm/min	28	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	28	MPa	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	90	%	ASTM D 638
Tensile Modulus, 50 mm/min	840	MPa	ASTM D 638
Flexural Modulus, 1.3 mm/min, 50 mm span	720	MPa	ASTM D 790
Hardness, Shore D, 10S reading	63	-	ASTM D 2240
Tensile Stress, yield	25	MPa	ISO 527
Tensile Stress, break, 50 mm/min	25	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	20	%	ISO 527
Tensile Strain, break, 50 mm/min	50	%	ISO 527
Tensile Modulus, 1 mm/min	690	MPa	ISO 527
Flexural Modulus	790	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	560	J/m	ASTM D 256
Izod Impact, notched, -30°C	170	J/m	ASTM D 256
Izod Impact, notched 80*10*4 +23°C	37	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	14	kJ/m²	ISO 180/1A
THERMAL			
HDT, 0.45 MPa, 3.2 mm, unannealed	82	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	56	°C	ASTM D 648
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	66	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.03	-	ASTM D 792
Melt Flow Rate, 280°C/5.0 kgf	33	g/10 min	ASTM D 1238
ELECTRICAL			
Relative Permittivity, 1 GHz	2.47	-	ASTM D 150
Dissipation Factor, 1 GHz	0.0032	-	ASTM D 150
WIRE COATING EXTRUSION			
Drying Temperature	80 – 100	°C	
Drying Time	4 – 6	hrs	
Drying Time (Cumulative)	8	hrs	

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Maximum Moisture Content	0.02	%	
Extruder Length/Diameter Ratio (L/D)	>24:1	-	
Compression Ratio	2:1-3:1	-	
Screw Speed	5 – 60	rpm	
Feed Zone Temperature	200 – 260	°C	
Middle Zone Temperatures	270 – 300	°C	
Head Zone Temperature	280 – 300	°C	
Neck Temperature	280 – 300	°C	
Cross-head Temperature	280 – 300	°C	
Die Temperature	280 – 300	°C	
Melt Temperature	280 – 300	°C	
Conductor Pre-heat Temperature	100 – 150	°C	
Screen Pack	60/200/60	-	
Cooling Water Air Gap	100 – 1000	mm	
Water Bath Temperature	15 – 30	°C	

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