

FLEX NORYL™ RESIN WCV063

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 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 dielectric 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.

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

Automotive
Industrial

SUB INDUSTRY

Automotive Under the Hood
Electrical

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL ⁽¹⁾			
Tensile Stress, yld, Type I, 50 mm/min	28	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	28	MPa	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	90	%	ASTM D638
Tensile Modulus, 50 mm/min	840	MPa	ASTM D638
Flexural Modulus, 1.3 mm/min, 50 mm span	720	MPa	ASTM D790
Hardness, Shore D, 10S reading	63	-	ASTM D2240
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 ⁽¹⁾			
Izod Impact, notched, 23°C	560	J/m	ASTM D256
Izod Impact, notched, -30°C	170	J/m	ASTM D256
Izod Impact, notched 80*10*4 +23°C	37	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	14	kJ/m ²	ISO 180/1A
THERMAL ⁽¹⁾			
HDT, 0.45 MPa, 3.2 mm, unannealed	82	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	56	°C	ASTM D648

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CHEMISTRY THAT MATTERS™

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	66	°C	ISO 75/Af
PHYSICAL ⁽¹⁾			
Specific Gravity	1.03	-	ASTM D792
Melt Flow Rate, 280°C/5.0 kgf	33	g/10 min	ASTM D1238
ELECTRICAL ⁽¹⁾			
Relative Permittivity, 1 GHz	2.47	-	ASTM D150
Dissipation Factor, 1 GHz	0.0032	-	ASTM D150
WIRE COATING EXTRUSION			
Drying Temperature	80 – 100	°C	
Drying Time	4 – 6	Hrs	
Drying Time (Cumulative)	8	Hrs	
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	

(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.

ADDITIONAL PRODUCT NOTES

No PFAS intentionally added: The grade listed in this document does not contain PFAS intentionally added during Seller's manufacturing process and is not expected to contain unintentional PFAS impurities. Each user is responsible for evaluating the presence of unintentional PFAS impurities.

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