NORYL™ Resin N190X - Americas

(PPE+PS) Saudi Basic Industries Corporation (SABIC)

Product Texts

NORYL™ N190X resin is a non-reinforced blend of polyphenylene ether (PPE) + high impact polystyrene (HIPS). This injection moldable grade contains non-brominated, non-chlorinated flame retardant and carries a UL94 flame rating of 5VA at 3mm and V0 at 1.5mm along with a UL746C Outdoor Suitability rating of F1. NORYL N190X resin offers strong electrical performance, low moisture absorption, dimensional stability, and hydrolytical stability. This material is an excellent candidate for indoor and outdoor electrical enclosure, wall plate / switch, connector, and solar / photovoltaic junction box applications.

UL Yellow Card Link E121562-100110155

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	**23**	cm³/10min	ISO 1133
Temperature	**280**	°C	-
Load	**5**	kg	-
ASTM Data			
Melt Flow Index, MFI	**20**	g/10min	ASTM D 1238
Temperature	**280**	°C	-
Load	**5**	kg	-

Mechanical properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	**2600**	MPa	ISO 527
Yield stress	**58**	MPa	ISO 527
Yield strain	**3.2**	%	ISO 527
Stress at break	**50**	MPa	ISO 527
Strain at break	**9.2**	%	ISO 527
Flexural modulus	**2350**	MPa	ISO 178
Izod notched impact strength, +23°C, 4mm	**20**	kJ/m²	ISO 180/1A
ASTM Data			
Tensile Modulus	**2580**	MPa	ASTM D 638
Tensile Strength at Yield	**60**	MPa	ASTM D 638
Tensile Strength at Break	**47**	MPa	ASTM D 638
Elongation at Yield	**3.6**	%	ASTM D 638
Elongation at Break	**9**	%	ASTM D 638
Flexural Modulus	**2500**	MPa	ASTM D 790
Rockwell Hardness	**R 120**	-	ASTM D 785
Taber Abrasion Resistance	**76**	mg/1000 cycles	ASTM D 1044
Izod Impact notched, 1/8 in	**293**	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	**100**	J/m	ASTM D 256
Temperature	**-30**	°C	-
Izod Impact unnotched, 1/8 in	**720**	J/m	ASTM D 256

Thermal properties	Value	Unit	Test Standard
ISO Data			
Temp. of deflection under load, 1.80 MPa	**82**	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	**95**	°C	ISO 75-1/-2
Vicat softening temperature, 120°C/h 50N	**107**	°C	ISO 306
Burning behav. at 1.5 mm nom. thickn.	**V-0**	class	IEC 60695-11-10
Thickness tested	**1.5**	mm	-
Burning behav. at thickness h	**HB**	class	IEC 60695-11-10
Thickness tested	**1.0**	mm	-
Burning behav. 5V at thickness h	**5VA**	class	IEC 60695-11-20
Thickness tested	**3.0**	mm	-
Glow Wire Flammability Index (GWFI)	**960**	°C	IEC 60695-2-12
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Glow Wire Ignition Temperature (GWIT)	**800**	°C	IEC 60695-2-13
GWIT - thickness tested (1)	**1**	mm	-
Glow Wire Ignition Temperature (GWIT)	**775**	°C	IEC 60695-2-13
GWIT - thickness tested (2)	**2**	mm	-

Glow Wire Ignition Temperature (GWIT)	**775**	°C	IEC 60695-2-13
GWIT - thickness tested (3)	**3**	mm	-
ASTM Data			
DTUL @ 66 psi	**95**	°C	ASTM D 648
DTUL @ 264 psi	**78**	°C	ASTM D 648
Vicat Temperature	**104**	°C	ASTM D 1525
Thermal Conductivity, solid state	**0.0346**	W/(m K)	ASTM C 177

Electrical properties	**Value**	**Unit**	**Test Standard**
ASTM Data			
Dielectric Strength, Short Time	**19.2**	kV/mm	ASTM D 149
Volume Resistivity	**>1E15**	Ohm*cm	ASTM D 257

Other properties	**Value**	**Unit**	**Test Standard**
Density	**1130**	kg/m³	ASTM D 792

Processing Recommendation Injection Molding	**Value**	**Unit**	**Test Standard**
Pre-drying - Temperature	**75 - 80**	°C	-
Pre-drying - Time	**3 - 4**	h	-
Processing humidity	**≤0.02**	%	-
Melt temperature	**250 - 275**	°C	-
Mold temperature	**55 - 75**	°C	-
Zone 1	**215 - 265**	°C	-
Zone 2	**225 - 270**	°C	-
Zone 3	**240 - 275**	°C	-
Screw speed	**20 - 100**	rpm	-
Back pressure	**0.3 - 0.7**	MPa	-

Characteristics

Processing
Injection Molding

Additives
Flame retarding agent

Special Characteristics
Flame retardant

Applications
Automotive

Regional Availability
North America