

NORYLTM RESIN V01525

REGION EUROPE

DESCRIPTION

NORYLTM V01525 resin is a 15% milled fiber reinforced blend of polyphenylene ether (PPE) + high impact polystyrene (HIPS) that was designed for applications requiring very good dimensional stability, Low Warpage, and thin-wall flame retardance. This material contains non-brominated, non-chlorinated flame retardant and carries a UL94 flame rating of V0 at 0.75mm for thin-wall parts. NORYL V01525 resin is an excellent candidate for electrical insulator components, appliance internal components, and electrical enclosures and housings requiring thin-wall FR and good dimensional stability.

TYPICAL PROPERTY VALUES

Revision 20190828

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	69	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	66	MPa	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	4	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	5	%	ASTM D 638
Tensile Modulus, 5 mm/min	3100	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	115	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	3200	MPa	ASTM D 790
Taber Abrasion, CS-17, 1 kg	75	mg/1000cy	SABIC method
Tensile Stress, yield, 5 mm/min	58	MPa	ISO 527
Tensile Stress, break, 5 mm/min	55	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	4	%	ISO 527
Tensile Strain, break, 5 mm/min	5	%	ISO 527
Tensile Modulus, 1 mm/min	3100	MPa	ISO 527
Flexural Stress, break, 2 mm/min	100	MPa	ISO 178
Flexural Modulus, 2 mm/min	3000	MPa	ISO 178
Ball Indentation Hardness, H358/30	140	MPa	ISO 2039-1
IMPACT			
Izod Impact, notched, 23°C	50	J/m	ASTM D 256
Izod Impact, notched, -30°C	55	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	8	J	ASTM D 3763
Izod Impact, unnotched 80*10*4 +23°C	35	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	30	kJ/m ²	ISO 180/1U
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	40	kJ/m ²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	40	kJ/m ²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate B/50	140	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	120	°C	ASTM D 648
CTE, -40°C to 40°C, flow	6.6E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	5.2E-05	1/°C	ASTM E 831
Thermal Conductivity	0.28	W/m-°C	ISO 8302
CTE, 23°C to 80°C, flow	5.E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	6.E-05	1/°C	ISO 11359-2

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Ball Pressure Test, approximate maximum	125	°C	IEC 60695-10-2
Vicat Softening Temp, Rate A/50	140	°C	ISO 306
Vicat Softening Temp, Rate B/50	130	°C	ISO 306
Vicat Softening Temp, Rate B/120	140	°C	ISO 306
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	115	°C	ISO 75/Ae
Relative Temp Index, Elec ⁽¹⁾	65	°C	UL 746B
Relative Temp Index, Mech w/impact ⁽¹⁾	65	°C	UL 746B
Relative Temp Index, Mech w/o impact ⁽¹⁾	65	°C	UL 746B
PHYSICAL			
Specific Gravity	1.13	-	ASTM D 792
Mold Shrinkage on Tensile Bar, flow	0.3 – 0.5	%	SABIC method
Mold Shrinkage, flow, 3.2 mm	0.3 – 0.5	%	SABIC method
Melt Flow Rate, 300°C/5.0 kgf	24	g/10 min	ASTM D 1238
Density	1.25	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.45	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.06	%	ISO 62
Melt Volume Rate, MVR at 280°C/5.0 kg	10	cm³/10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	1.E+15	Ohm-cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ohm	IEC 60093
Dielectric Strength, in oil, 0.8 mm	33	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 1.6 mm	26	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 3.2 mm	16	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.9	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.006	-	IEC 60250
Dissipation Factor, 1 MHz	0.003	-	IEC 60250
Comparative Tracking Index ⁽²⁾	175	V	IEC 60112
Relative Permittivity, 50/60 Hz	3	-	IEC 60250
Comparative Tracking Index (UL) {PLC}	4	PLC Code	UL 746A
High Amp Arc Ignition (HAI), PLC 1	≥3	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 2	≥1.5	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 3	≥2	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 4	≥1.2	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 0	≥1.2	mm	UL 746A
High Voltage Arc Track Rate {PLC}	3	PLC Code	UL 746A
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
FLAME CHARACTERISTICS ⁽¹⁾			
UL Yellow Card Link	E45329-236783	-	-
UL Recognized, 94-5VA Flame Class Rating	≥3	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	≥1.5	mm	UL 94
UL Recognized, 94V-1 Flame Class Rating	≥1.2	mm	UL 94
Glow Wire Flammability Index 960°C, passes at ⁽²⁾	3.2	mm	IEC 60695-2-12
Oxygen Index (LOI)	32	%	ISO 4589
INJECTION MOLDING			

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Drying Temperature	100 – 120	°C	
Drying Time	2 – 3	hrs	
Melt Temperature	280 – 300	°C	
Nozzle Temperature	260 – 280	°C	
Front - Zone 3 Temperature	280 – 300	°C	
Middle - Zone 2 Temperature	260 – 280	°C	
Rear - Zone 1 Temperature	240 – 260	°C	
Hopper Temperature	60 – 80	°C	
Mold Temperature	80 – 120	°C	

(1) 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.

(2) Value shown here is based on internal measurement.

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