

NORYL™ RESIN V090

REGION EUROPE

DESCRIPTION

NORYL V090 is an unfilled, flame retardant material with a Vicat B/120 of 95 °C according ISO 306. NORYL V090 is V0 at 2.0 mm and V1 at 1.6 mm according UL94 and halogen free according VDE/DIN 472 part 815.

TYPICAL PROPERTY VALUES

Revision 20250613

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yield, 50 mm/min	45	MPa	ISO 527
Tensile Stress, break, 50 mm/min	40	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	3	%	ISO 527
Tensile Strain, break, 50 mm/min	20	%	ISO 527
Tensile Modulus, 1 mm/min	2300	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	65	MPa	ISO 178
Flexural Modulus, 2 mm/min	2100	MPa	ISO 178
Ball Indentation Hardness, H358/30	100	MPa	ISO 2039-1
IMPACT			
Izod Impact, notched 80*10*4 +23°C	7	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	5	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	7	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	5	kJ/m²	ISO 179/1eA
THERMAL			
Thermal Conductivity	0.27	W/m·°C	ISO 8302
CTE, 23°C to 80°C, flow	7.E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	9.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 75°C +/- 2°C	PASSES	-	IEC 60695-10-2
Ball Pressure Test, approximate maximum	85	°C	IEC 60695-10-2
Vicat Softening Temp, Rate A/50	100	°C	ISO 306
Vicat Softening Temp, Rate B/50	90	°C	ISO 306
Vicat Softening Temp, Rate B/120	90	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	75	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	70	°C	ISO 75/Ae
Relative Temp Index, Elec	65	°C	UL 746B
Relative Temp Index, Mech w/impact	65	°C	UL 746B
Relative Temp Index, Mech w/o impact	65	°C	UL 746B
PHYSICAL			
Mold Shrinkage on Tensile Bar, flow	0.5 – 0.7	%	SABIC method
Density	1.1	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	0.18	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.06	%	ISO 62
Melt Volume Rate, MVR at 280°C/1.2 kg	10	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 280°C/2.16 kg	18	cm³/10 min	ISO 1133

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
ELECTRICAL			
Volume Resistivity	1.E+15	Ω.cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ω	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	2.7	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.015	-	IEC 60250
Dissipation Factor, 1 MHz	0.005	-	IEC 60250
Comparative Tracking Index	225	V	IEC 60112
Relative Permittivity, 50/60 Hz	2.8	-	IEC 60250
FLAME CHARACTERISTICS			
UL Recognized, 94V-1 Flame Class Rating	1.5	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	2	mm	UL 94
UL Recognized, 94-5VA Flame Class Rating	2.5	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	3.2	mm	IEC 60695-2-12
Oxygen Index (LOI)	32	%	ISO 4589
INJECTION MOLDING			
Drying Temperature	70 – 80	°C	
Drying Time	2 – 3	Hrs	
Melt Temperature	270 – 290	°C	
Nozzle Temperature	250 – 270	°C	
Front - Zone 3 Temperature	270 – 290	°C	
Middle - Zone 2 Temperature	250 – 270	°C	
Rear - Zone 1 Temperature	230 – 250	°C	
Hopper Temperature	60 – 80	°C	
Mold Temperature	60 – 80	°C	

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