

NORYL™ LTA5020 resin

Polyphenylene Ether + PS

SABIC Innovative Plastics

Message:

NORYL LTA5020 is an unfilled, injection moldable grade. Designed for improved long term heat aging, this resin also uses non-chlorinated, non-brominated FR additives to achieve a V0 UL94 rating. NORYL LTA5020 is only available in a dark grey/black and may be an excellent material candidate for application requiring electrically insulating properties.

General Information			
UL YellowCard	E121562-100116365		
Additive	Flame Retardant		
Features	Bromine Free		
	Chlorine Free		
	Electrically Insulating		
	Flame Retardant		
	Good Heat Aging Resistance		
Appearance	Black		
	Dark Grey		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.15	g/cm ³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (280°C/5.0 kg)	10	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (280°C/5.0 kg)	10.0	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 to 0.70	%	Internal Method
Water Absorption			ISO 62
Saturation, 23°C	0.20	%	
Equilibrium, 23°C, 50% RH	0.060	%	
Outdoor Suitability	f1		UL 746C
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2850	MPa	ASTM D638
--	2840	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	80.0	MPa	ASTM D638
Yield	83.3	MPa	ISO 527-2/50
Break ³	60.0	MPa	ASTM D638
Break	80.6	MPa	ISO 527-2/50
Tensile Elongation			

Yield ⁴	4.8	%	ASTM D638
Yield	5.0	%	ISO 527-2/50
Break ⁵	18	%	ASTM D638
Break	6.0	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span ⁶	2770	MPa	ASTM D790
-- ⁷	2920	MPa	ISO 178
Flexural Stress			
--	132	MPa	ISO 178
Yield, 50.0 mm Span ⁸	118	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹ (23°C)	3.0	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-30°C	39	J/m	ASTM D256
23°C	90	J/m	ASTM D256
-30°C ¹⁰	3.9	kJ/m ²	ISO 180/1A
23°C ¹¹	4.0	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
23°C	1400	J/m	ASTM D4812
-30°C ¹²	34	kJ/m ²	ISO 180/1U
23°C ¹³	35	kJ/m ²	ISO 180/1U
Instrumented Dart Impact (23°C, Total Energy)	17.1	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	128	°C	ASTM D648
0.45 MPa, Unannealed, 6.40 mm	134	°C	ASTM D648
1.8 MPa, Unannealed, 3.20 mm	112	°C	ASTM D648
1.8 MPa, Unannealed, 6.40 mm	116	°C	ASTM D648
1.8 MPa, Unannealed, 64.0 mm Span ¹⁴	115	°C	ISO 75-2/ Af
Vicat Softening Temperature			
--	137	°C	ASTM D1525, ISO 306/B120 ¹⁵
--	135	°C	ISO 306/B50
Ball Pressure Test			
125°C	Pass		IEC 60695-10-2
135°C ¹⁶	Pass		
CLTE			
Flow : -40 to 40°C	8.3E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Transverse : -40 to 40°C	8.9E-5	cm/cm/°C	
RTI Elec	130	°C	UL 746
RTI Imp	120	°C	UL 746
RTI Str	130	°C	UL 746

Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	4.2E+14	ohms	ASTM D257
Volume Resistivity	3.7E+16	ohms·cm	ASTM D257
Dielectric Strength			ASTM D149
1.60 mm, in Oil	30	kV/mm	
3.20 mm, in Oil	19	kV/mm	
Dielectric Constant			ASTM D150
50 Hz	2.87		
60 Hz	2.87		
1 MHz	2.76		
Dissipation Factor			ASTM D150
50 Hz	0.025		
60 Hz	0.025		
1 MHz	3.0E-3		
Comparative Tracking Index (CTI)	PLC 2		UL 746
Comparative Tracking Index	275	V	IEC 60112
High Amp Arc Ignition (HAI)	PLC 0		UL 746
Hot-wire Ignition (HWI)	PLC 1		UL 746
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
1.50 mm, Testing by SABIC	V-0		
3.00 mm, Testing by SABIC	5VA		
Glow Wire Flammability Index (1.50 mm)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature			IEC 60695-2-13
1.50 mm	800	°C	
3.00 mm	800	°C	
Injection	Nominal Value	Unit	
Drying Temperature	104 to 110	°C	
Drying Time	3.0 to 4.0	hr	
Drying Time, Maximum	8.0	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	30 to 70	%	
Rear Temperature	243 to 293	°C	
Middle Temperature	254 to 299	°C	
Front Temperature	266 to 304	°C	
Nozzle Temperature	277 to 304	°C	
Processing (Melt) Temp	277 to 304	°C	
Mold Temperature	71.1 to 98.9	°C	
Back Pressure	0.345 to 0.689	MPa	
Screw Speed	20 to 100	rpm	
Vent Depth	0.038 to 0.051	mm	
NOTE			

1.	5.0 mm/min
2.	Type I, 50 mm/min
3.	Type I, 50 mm/min
4.	Type I, 50 mm/min
5.	Type I, 50 mm/min
6.	1.3 mm/min
7.	2.0 mm/min
8.	1.3 mm/min
9.	80*10*4 sp=62mm
10.	80*10*4
11.	80*10*4
12.	80*10*4
13.	80*10*4
14.	80*10*4 mm
15.	Rate B (120°C/h), Loading 2 (50 N)
16.	Approximate maximum

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