NORYL™ Resin 731

REGION EUROPE

DESCRIPTION

NORYL 731 resin is a non-reinforced blend of polyphenylene ether (PPE) + polystyrene (PS). This injection moldable grade exhibits good surface appearance, high ductility, and good impact resistance along with low moisture absorption, creep resistance, dimensional stability, and hydrolytic stability. NORYL 731 resin is an excellent candidate for a variety of applications.

GENERAL INFORMATION	
Features	Hydrolytic Stability, Low Warpage, Amorphous, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Dimensional stability, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polyphenylene Ether + PS (PPE+PS)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Building and Construction	Building Component
Consumer	Consumer Goods, Home Appliances, Commercial Appliance
Electrical and Electronics	Mobile Phone - Computer - Tablets
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20261116

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Taber Abrasion, CS-17, 1 kg	65	mg/1000cy	SABIC method
Tensile Stress, yield, 50 mm/min	55	MPa	ISO 527
Tensile Stress, break, 50 mm/min	50	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5	%	ISO 527
Tensile Strain, break, 50 mm/min	30	%	ISO 527
Tensile Modulus, 1 mm/min	2300	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	75	MPa	ISO 178
Flexural Modulus, 2 mm/min	2200	MPa	ISO 178
Ball Indentation Hardness, H358/30	100	MPa	ISO 2039-1
IMPACT [1]			
Izod impact, notched			
80*10*4 +23°C	15	kJ/m²	ISO 180/1A
80*10*4 -30°C	5	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	15	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	5	kJ/m²	ISO 179/1eA
THERMAL [1]			
Thermal Conductivity	0.22	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	7.E-05	1/°C	ISO 11359-2

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Ball Pressure Test, approximate maximum	133	°C	IEC 60695-10-2
Vicat Softening Temp, Rate A/50	145	°C	ISO 306
Vicat Softening Temp, Rate B/50	135	°C	ISO 306
Vicat Softening Temp, Rate B/120	140	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	130	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	115	°C	ISO 75/Ae
Relative Temp Index, Elec [2]	105	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	90	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	105	°C	UL 746B
PHYSICAL [1]			
Mold Shrinkage on Tensile Bar, flow [3]	0.5 – 0.7	%	SABIC method
Density	1.06	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	0.23	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.06	%	ISO 62
Melt Volume Rate, MVR at 280°C/5.0 kg	8	cm³/10 min	ISO 1133
ELECTRICAL [1]			
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
Volume Resistivity	1.E+15	Ω.cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ω	IEC 60093
Dielectric Strength, in oil, 3.2 mm	19	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.6	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.002	-	IEC 60250
Dissipation Factor, 1 MHz	0.001	-	IEC 60250
Comparative Tracking Index [4]	175	V	IEC 60112
Relative Permittivity, 50/60 Hz	2.7	-	IEC 60250
Comparative Tracking Index (UL) {PLC}	2	PLC Code	UL 746A
High Amp Arc Ignition (HAI), PLC 2	≥1.5	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 3	≥3	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 1	≥1.5	mm	UL 746A
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D495
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E45329-236745	-	-
UL Recognized, 94HB Flame Class Rating	≥1.5	mm	UL 94
Glow Wire Flammability Index 750°C, passes at [4]	3.2	mm	IEC 60695-2-12
Oxygen Index (LOI)	22	%	ISO 4589
INJECTION MOLDING [5]			
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	

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Mold Temperature	80 – 120	°C	
PROFILE EXTRUSION			
Drying Temperature	100 – 110	°C	
Drying Time	2 – 3	Hrs	
Melt Temperature	250 – 270	°C	
Barrel - Zone 1 Temperature	220 – 240	°C	
Barrel - Zone 2 Temperature	230 – 250	°C	
Barrel - Zone 3 Temperature	250 – 270	°C	
Barrel - Zone 4 Temperature	250 – 270	°C	
Hopper Temperature	40 – 60	°C	
Adapter Temperature	250 – 270	°C	
Die Temperature	250 – 270	°C	
Calibrator Temperature	60 – 80	°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.
(2) 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.
(3) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.
(4) Value shown here is based on internal measurement.
(5) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

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