NORYL™ RESIN BN31

REGION EUROPE

DESCRIPTION

NORYL BN31 resin is a non-reinforced blend of polyphenylene ether (PPE) + polystyrene (PS). This blow moldable grade contains non-brominated, non-chlorinated flame retardant and carries a UL94 flame rating of 5VA at 2.5mm and V0 at 1.5mm along with a UL746C Outdoor Suitability rating of F1. NORYL BN31 resin exhibit good low temperature impact strength, heat resistance, excellent processability, Low warpage, and dimensional stability. The material is an excellent candidate for blow molded applications such as hospital bed headboard, cladding, tray.

GENERAL INFORMATION	
Features	Flame Retardant, Good Processability, Hydrolytic Stability, Low Warpage, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Non Cl/Br flame retardant, Non halogenated flame retardant, Dimensional stability, Impact resistant
Fillers	Unreinforced
Polymer Types	Polyphenylene Ether + PS (PPE+PS)
Processing Techniques	Extrusion Blow Molding

INDUSTRY	SUB INDUSTRY
Hygiene and Healthcare	General Healthcare
Industrial	Material Handling

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	48	MPa	ASTM D638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	72	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2410	MPa	ASTM D790
IMPACT [1]			
Izod Impact, notched, 23°C	267	J/m	ASTM D256
Izod Impact, notched, -40°C	106	J/m	ASTM D256
Gardner, 23°C	13	J	ASTM D3029
Gardner, -40°C	33	J	ASTM D3029
THERMAL [1]			
HDT, 1.82 MPa, 6.4 mm, unannealed	82	°C	ASTM D648
Relative Temp Index, Elec [2]	95	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	80	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	95	°C	UL 746B
PHYSICAL [1]			
Specific Gravity	1.1	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm [3]	0.6 – 0.7	%	SABIC method
ELECTRICAL [1]			
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
High Amp Arc Ignition (HAI), PLC 2	≥3	mm	UL 746A

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Hot-Wire Ignition (HWI), PLC 2	≥3	mm	UL 746A
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E121562-221152	-	-
UL Recognized, 94V-0 Flame Class Rating	≥1.5	mm	UL 94
UL Recognized, 94-5VA Flame Class Rating	≥3	mm	UL 94
UV-light, water exposure/immersion	F1	-	UL 746C
EXTRUSION BLOW MOLDING			
Drying Temperature	95	°C	
Drying Time	2 – 4	Hrs	
Melt Temperature (Parison)	210 – 215	°C	
Barrel - Zone 1 Temperature	205 – 215	°C	
Barrel - Zone 2 Temperature	205 – 215	°C	
Barrel - Zone 3 Temperature	205 – 215	°C	
Barrel - Zone 4 Temperature	210 – 215	°C	
Adapter - Zone 5 Temperature	210 – 215	°C	
Head - Zone 6 - Top Temperature	210 – 215	°C	
Head - Zone 7 - Bottom Temperature	215 – 220	°C	
Mold Temperature	50 – 70	°C	
Die Temperature	215 – 220	°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, colors and regions. 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.

DISCLAIMER