

NORYL™ RESIN 7310F

REGION ASIA

DESCRIPTION

NORYL 7310F resin is a non-reinforced blend of polyphenylene ether (PPE) + polystyrene (PS). This FDA Food Contact compliant, 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.

GENERAL INFORMATION

Features

Hydrolytic Stability, Low Warpage, Amorphous, Low Shrinkage, Low Corrosivity, Low Moisture Absorption, Low Specific Gravity, Food contact, Potable water safe, Dimensional stability, High stiffness/Strength, No PFAS intentionally added

Fillers

Unreinforced

Polymer Types

Polyphenylene Ether + PS (PPE+PS)

Processing Techniques

Injection Molding

INDUSTRY

Building and Construction

SUB INDUSTRY

Water Management

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL ⁽¹⁾			
Tensile Stress, yld, Type I, 50 mm/min	54	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	45	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	4	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	30	%	ASTM D638
Tensile Modulus, 5 mm/min	2400	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	75	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2100	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	40	MPa	ISO 527
Tensile Stress, break, 50 mm/min	40	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	70	%	ISO 527
Tensile Strain, break, 50 mm/min	70	%	ISO 527
Tensile Modulus, 1 mm/min	2100	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	80	MPa	ISO 178
Flexural Modulus, 2 mm/min	2300	MPa	ISO 178
IMPACT ⁽¹⁾			
Izod Impact, unnotched, 23°C	800	J/m	ASTM D4812
Izod Impact, notched, 23°C	150	J/m	ASTM D256
Izod Impact, notched, -30°C	120	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	55	J	ASTM D3763
Izod Impact, unnotched 80°10'4 +23°C	60	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80°10'4 -30°C	55	kJ/m ²	ISO 180/1U

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CHEMISTRY THAT MATTERS™

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched 80*10*4 +23°C	16	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	11	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	13	kJ/m ²	ISO 179/1eA
THERMAL ⁽¹⁾			
Vicat Softening Temp, Rate B/50	133	°C	ASTM D1525
HDT, 1.82 MPa, 3.2mm, unannealed	110	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	124	°C	ASTM D648
CTE, -40°C to 40°C, flow	7.2E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	8.E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, flow	7.3E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	8.3E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	133	°C	ISO 306
Vicat Softening Temp, Rate B/120	135	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	112	°C	ISO 75/Af
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⁾			
Specific Gravity	1.08	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm ⁽³⁾	0.5 – 0.8	%	SABIC method
Melt Flow Rate, 280°C/5.0 kgf	11	g/10 min	ASTM D1238
Water Absorption, (23°C/24hrs)	0.13	%	ISO 62-1
Moisture Absorption, (23°C/50% RH/Equilibrium)	0.04	%	ISO 62-4
Melt Volume Rate, MVR at 280°C/5.0 kg	12	cm ³ /10 min	ISO 1133
ELECTRICAL ⁽¹⁾			
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	2	PLC Code	UL 746A
High Amp Arc Ignition (HAI), PLC 3	≥1.5	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 1	≥1.5	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 2	≥3	mm	UL 746A
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D495
FLAME CHARACTERISTICS ⁽²⁾			
UL Yellow Card Link	E207780-228539	-	-
UL Yellow Card Link 2	E45587-237006	-	-
UL Recognized, 94HB Flame Class Rating	≥1.5	mm	UL 94
INJECTION MOLDING ⁽⁴⁾			
Drying Temperature	105 – 110	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	280 – 310	°C	
Nozzle Temperature	280 – 310	°C	
Front - Zone 3 Temperature	270 – 310	°C	
Middle - Zone 2 Temperature	260 – 305	°C	
Rear - Zone 1 Temperature	250 – 300	°C	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Mold Temperature	75 – 105	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	20 – 100	rpm	
Shot to Cylinder Size	30 – 70	%	

- (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) 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.

ADDITIONAL PRODUCT NOTES

No PFAS intentionally added: The grade listed in this document does not contain PFAS intentionally added during Seller's manufacturing process and is not expected to contain unintentional PFAS impurities. Each user is responsible for evaluating the presence of unintentional PFAS impurities.

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