

NORYL™ FE1520PW resin

Polyphenylene Ether + PS

SABIC Innovative Plastics Europe

Message:

Noryl® FE1520PW resin is a blend of polyphenylene ether (PPE) and polystyrene (PS) resin that contains 20% glass reinforcement. The resin is suitable for injection molding. Noryl FE1520PW resin has been developed for fluid engineering applications that require improved hydrolytic stability. Noryl FE1520PW resin has been certified for potable water applications up to 85C in Europe and North America in limited colors.

General Information			
Filler / Reinforcement	Glass fiber reinforced material, 20% filler by weight		
Features	Hydrolysis stability		
Uses	Potable water application		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Density	1.24	g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR) (280°C/10.0 kg)	22.0	cm ³ /10min	ISO 1133
Molding Shrinkage			Internal method
Flow: 3.20mm	0.20 - 0.40	%	Internal method
Transverse flow: 3.20mm	0.30 - 0.60	%	Internal method
Water Absorption			
Saturated, 23°C	0.20	%	ISO 62
Balance, 50% RH	0.060	%	ASTM D570
Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness (H 358/30)	220	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	7110	MPa	ASTM D638
--	7180	MPa	ISO 527-2/1
Tensile Strength			
Fracture ²	119	MPa	ASTM D638
Fracture	119	MPa	ISO 527-2/5
Tensile Elongation			
Fracture ³	2.6	%	ASTM D638
Fracture	2.6	%	ISO 527-2/5
Flexural Modulus			
50.0mm span ⁴	6970	MPa	ASTM D790
-- ⁵	6040	MPa	ISO 178
Flexural Stress			
--	165	MPa	ISO 178
Fracture, 50.0mm span ⁶	175	MPa	ASTM D790

Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	65.0	mg	Internal method
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			
-30°C ⁷	5.0	kJ/m ²	ISO 179/1eA
-30°C	27	kJ/m ²	ISO 179/2C
23°C	6.0	kJ/m ²	ISO 179/2C
Charpy Unnotched Impact Strength ⁸ (23°C)	30	kJ/m ²	ISO 179/1eU
Notched Izod Impact			
-30°C	45	J/m	ASTM D256
23°C	65	J/m	ASTM D256
-30°C ⁹	4.0	kJ/m ²	ISO 180/1A
23°C ¹⁰	6.0	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
-30°C	400	J/m	ASTM D4812
23°C	400	J/m	ASTM D4812
-30°C ¹¹	23	kJ/m ²	ISO 180/1U
23°C ¹²	25	kJ/m ²	ISO 180/1U
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, unannealed, 100 mm span ¹³	132	°C	ISO 75-2/Be
1.8 MPa, unannealed, 3.20mm	135	°C	ASTM D648
1.8 MPa, unannealed, 100 mm span ¹⁴	139	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	150	°C	ISO 306/A50
--	144	°C	ISO 306/B120
Linear thermal expansion coefficient			
Flow: -40 to 40°C	3.0E-5	cm/cm/°C	ISO 11359-2
Lateral: -40 to 40°C	7.0E-5	cm/cm/°C	ISO 11359-2
Injection	Nominal Value	Unit	
Drying Temperature	100 - 120	°C	
Drying Time	2.0 - 4.0	hr	
Suggested Max Moisture	0.020	%	
Hopper Temperature	60.0 - 80.0	°C	
Rear Temperature	250 - 270	°C	
Middle Temperature	270 - 290	°C	
Front Temperature	290 - 310	°C	
Nozzle Temperature	280 - 300	°C	
Processing (Melt) Temp	280 - 300	°C	
Mold Temperature	80.0 - 120	°C	
NOTE			
1.	5.0 mm/min		

2.	Type 1, 5.0 mm/min
3.	Type 1, 5.0 mm/min
4.	1.3 mm/min
5.	2.0 mm/min
6.	1.3 mm/min
7.	80*10*4 sp=62mm
8.	80*10*4 sp=62mm
9.	80*10*4
10.	80*10*4
11.	80*10*4
12.	80*10*4
13.	120*10*4 mm
14.	120*10*4 mm

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