EXTEM™ VH1003F resin

Polyether Imide

SABIC Innovative Plastics Asia Pacific

Message:

Transparent, Thermoplastic Polyimide (TPI) resin. Glass transition Temp. (Tg) of 247°C. Global Food Contact Approval. Resin is subject to Commerce Control Laws U.S. 15CFR Chapter VII, Part 774 and Annex I of Reg. EC 428/2009 as ECCN1C008.

General Information			
Features	Food Contact Acceptable		
Agency Ratings	EU Food Contact, Unspecified Rating FDA Food Contact, Unspecified Rating		
Appearance	Clear/Transparent		
Processing Method	Injection Molding		
Physical	**Nominal Value**	**Unit**	**Test Method**
Specific Gravity	1.30	g/cm³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (367°C/6.6 kg)	16	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (360°C/5.0 kg)	8.50	cm³/10min	ISO 1133
Molding Shrinkage			Internal Method
Flow [1]	0.50 to 0.70	%	
Flow : 3.20 mm	0.50 to 0.70	%	
Across Flow : 3.20 mm	0.50 to 0.70	%	
Water Absorption			ISO 62
Saturation, 23°C	1.8	%	
Equilibrium, 23°C, 50% RH	0.60	%	
Hardness	**Nominal Value**	**Unit**	**Test Method**
Ball Indentation Hardness (H 358/30)	141	MPa	ISO 2039-1
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus			
-- [2]	3520	MPa	ASTM D638
--	3120	MPa	ISO 527-2/1
Tensile Strength			
Yield [3]	96.5	MPa	ASTM D638
Yield	95.0	MPa	ISO 527-2/5
Break [4]	96.5	MPa	ASTM D638
Break	78.0	MPa	ISO 527-2/5
Tensile Elongation			
Yield [5]	6.0	%	ASTM D638
Yield	8.5	%	ISO 527-2/5
Break [6]	50	%	ASTM D638

Break	50	%	ISO 527-2/5
Flexural Modulus			
50.0 mm Span [7]	3170	MPa	ASTM D790
-- [8]	3080	MPa	ISO 178
Flexural Stress			
--	123	MPa	ISO 178
Yield, 100 mm Span [9]	155	MPa	ASTM D790
Break, 50.0 mm Span [10]	159	MPa	ASTM D790
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Unnotched Impact Strength [11]			ISO 179/1eU
-30°C	No Break		
23°C	No Break		
Notched Izod Impact			
-30°C	74	J/m	ASTM D256
23°C	69	J/m	ASTM D256
-30°C [12]	5.4	kJ/m²	ISO 180/1A
23°C [13]	4.6	kJ/m²	ISO 180/1A
Unnotched Izod Impact			
23°C	No Break		ASTM D4812, ISO 180/1U
-30°C [14]	No Break		ISO 180/1U
Instrumented Dart Impact (23°C, Total Energy)	33.9	J	ASTM D3763
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 6.40 mm	237	°C	ASTM D648
1.8 MPa, Unannealed, 3.20 mm	217	°C	ASTM D648
1.8 MPa, Unannealed, 6.40 mm	230	°C	ASTM D648
1.8 MPa, Unannealed, 64.0 mm Span [15]	228	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	242	°C	ASTM D1525, ISO 306/B50 12 [16]
--	238	°C	ISO 306/B120
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
CLTE			
Flow : -40 to 150°C	5.0E-5	cm/cm/°C	ASTM E831
Flow : 23 to 150°C	5.0E-5	cm/cm/°C	ISO 11359-2
Transverse : -40 to 150°C	5.0E-5	cm/cm/°C	ASTM E831
Transverse : 23 to 150°C	5.0E-5	cm/cm/°C	ISO 11359-2
Thermal Conductivity	0.22	W/m/K	ASTM E1530
Electrical	**Nominal Value**	**Unit**	**Test Method**
Dielectric Strength (3.20 mm, in Oil)	17	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
100 Hz	3.41		

1 kHz	3.41		
Dissipation Factor			IEC 60250
50 Hz	0.025		
60 Hz	0.025		
100 Hz	8.0E-3		
1 kHz	1.0E-3		
1 MHz	7.0E-3		
Comparative Tracking Index	175	V	IEC 60112
Flammability	**Nominal Value**	**Unit**	**Test Method**
Glow Wire Flammability Index (3.20 mm)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (3.00 mm)	850	°C	IEC 60695-2-13
Oxygen Index	45	%	ISO 4589-2
Optical	**Nominal Value**	**Unit**	**Test Method**
Transmittance (2540 µm)	58.0	%	ASTM D1003
Haze (2540 µm)	2.0	%	ASTM D1003
Injection	**Nominal Value**	**Unit**	
Drying Temperature	149	°C	
Drying Time	4.0 to 6.0	hr	
Drying Time, Maximum	24	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	40 to 60	%	
Rear Temperature	360 to 382	°C	
Middle Temperature	371 to 393	°C	
Front Temperature	382 to 404	°C	
Nozzle Temperature	377 to 399	°C	
Processing (Melt) Temp	382 to 404	°C	
Mold Temperature	135 to 163	°C	
Back Pressure	0.345 to 0.689	MPa	
Screw Speed	40 to 70	rpm	
Vent Depth	0.025 to 0.076	mm	

NOTE	
1.	Tensile Bar
2.	5.0 mm/min
3.	Type I, 5.0 mm/min
4.	Type I, 5.0 mm/min
5.	Type I, 5.0 mm/min
6.	Type I, 5.0 mm/min
7.	1.3 mm/min
8.	2.0 mm/min
9.	2.6 mm/min
10.	1.3 mm/min
11.	80*10*4 sp=62mm

12.	80*10*4
13.	80*10*4
14.	80*10*4
15.	80*10*4 mm
16.	Rate B (120°C/h), Loading 2 (50 N)

Recommended distributors for this material

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