

VALOX™ ENH8560 resin

Polybutylene Terephthalate + PET

SABIC Innovative Plastics Europe

Message:

Non-Brominated & Non-Chlorinated Flame Retardant, 30% Glass fiber reinforced PBT/PET blend

General Information			
UL YellowCard	E45329-100705592		
Filler / Reinforcement	Glass Fiber,30% Filler by Weight		
Features	Bromine Free		
	Chlorine Free		
	Flame Retardant		
RoHS Compliance	RoHS Compliant		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.58	g/cm ³	ASTM D792
--	1.59	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR)			
250°C/5.0 kg	10	g/10 min	ASTM D1238
265°C/2.16 kg	5.0	g/10 min	ASTM D1238
250°C/5.0 kg	11	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR)			
250°C/5.0 kg	10.0	cm ³ /10min	ASTM D1238
265°C/5.0 kg	25.0	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow ¹	0.30 to 0.40	%	Internal Method
Water Absorption			ISO 62
Saturation, 23°C	0.30	%	
Equilibrium, 23°C, 50% RH	0.050	%	
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	118		ISO 2039-2
Ball Indentation Hardness (H 358/30)	166	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ²	12000	MPa	ASTM D638
--	12000	MPa	ISO 527-2/1
Tensile Strength			
Yield ³	103	MPa	ASTM D638
Yield	105	MPa	ISO 527-2/5

Break ⁴	103	MPa	ASTM D638
Break	105	MPa	ISO 527-2/5
Tensile Elongation			
Yield ⁵	1.0	%	ASTM D638
Yield	1.0	%	ISO 527-2/5
Break ⁶	2.0	%	ASTM D638
Break	2.0	%	ISO 527-2/5
Flexural Modulus			
50.0 mm Span ⁷	10000	MPa	ASTM D790
-- ⁸	10000	MPa	ISO 178
Flexural Stress			
--	165	MPa	ISO 178
Yield, 50.0 mm Span ⁹	145	MPa	ASTM D790
Break, 50.0 mm Span ¹⁰	145	MPa	ASTM D790
Flexural Strain at Break ¹¹	2.0	%	ISO 178
Filler Content	30	%	ASTM D229
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			
-30°C	7.0	kJ/m ²	ISO 179/2C
23°C ¹²	5.0	kJ/m ²	ISO 179/1eA
23°C	7.0	kJ/m ²	ISO 179/2C
Charpy Unnotched Impact Strength			ISO 179/2U
-30°C	30	kJ/m ²	
23°C	30	kJ/m ²	
Notched Izod Impact			
-30°C	60	J/m	ASTM D256
0°C	60	J/m	ASTM D256
23°C	60	J/m	ASTM D256
-30°C ¹³	7.0	kJ/m ²	ISO 180/1A
0°C ¹⁴	7.0	kJ/m ²	ISO 180/1A
23°C ¹⁵	7.0	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
-30°C	400	J/m	ASTM D4812
23°C	450	J/m	ASTM D4812
-30°C ¹⁶	27	kJ/m ²	ISO 180/1U
23°C ¹⁷	30	kJ/m ²	ISO 180/1U
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	210	°C	ASTM D648
0.45 MPa, Unannealed, 64.0 mm Span ¹⁸	215	°C	ISO 75-2/Bf
1.8 MPa, Unannealed, 3.20 mm	196	°C	ASTM D648
1.8 MPa, Unannealed, 64.0 mm Span ¹⁹	180	°C	ISO 75-2/Af

Vicat Softening Temperature			
--	220	°C	ASTM D1525 ²⁰
--	196	°C	ASTM D1525 ²¹
--	215	°C	ISO 306/A50
--	203	°C	ISO 306/B50
--	201	°C	ISO 306/B120
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
CLTE			ISO 11359-2
Flow : -40 to 40°C	1.9E-5	cm/cm/°C	
Flow : 23 to 150°C	2.1E-5	cm/cm/°C	
Transverse : -40 to 40°C	5.6E-5	cm/cm/°C	
Transverse : 23 to 150°C	1.4E-4	cm/cm/°C	
RTI Elec	75.0	°C	UL 746
RTI Imp	75.0	°C	UL 746
RTI Str	75.0	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity	1.0E+15	ohms·cm	ASTM D257, IEC 60093
Dielectric Strength			ASTM D149, IEC 60243-1
0.800 mm, in Oil	35	kV/mm	
1.60 mm, in Oil	25	kV/mm	
3.20 mm, in Oil	8.0	kV/mm	
Dielectric Constant (1 MHz)	3.60		ASTM D150, IEC 60250
Dissipation Factor (1 MHz)	0.012		ASTM D150, IEC 60250
Comparative Tracking Index (CTI)	PLC 2		UL 746
Comparative Tracking Index	425	V	IEC 60112
High Amp Arc Ignition (HAI)	PLC 0		UL 746
Hot-wire Ignition (HWI)	PLC 0		UL 746
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
1.50 mm	V-0		
3.00 mm	5VA		
Glow Wire Flammability Index (2.25 mm)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature			IEC 60695-2-13
1.00 mm	750	°C	
2.00 mm	775	°C	
3.00 mm	825	°C	
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (260°C, 1500 sec ⁻¹)	155	Pa·s	ISO 11443
Injection	Nominal Value	Unit	
Drying Temperature	110 to 120	°C	
Drying Time	4.0 to 6.0	hr	

Suggested Max Moisture	0.020	%
Hopper Temperature	40.0 to 60.0	°C
Rear Temperature	240 to 260	°C
Middle Temperature	255 to 280	°C
Front Temperature	260 to 280	°C
Nozzle Temperature	265 to 275	°C
Processing (Melt) Temp	260 to 285	°C
Mold Temperature	60.0 to 110	°C

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.	1.3 mm/min
10.	1.3 mm/min
11.	2 mm/min
12.	80*10*4 sp=62mm
13.	80*10*4
14.	80*10*4
15.	80*10*4
16.	80*10*4
17.	80*10*4
18.	80*10*4 mm
19.	80*10*4 mm
20.	Rate A (50°C/h), Loading 2 (50 N)
21.	Rate B (120°C/h), Loading 2 (50 N)

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