

VALOX™ 830 resin

Polybutylene Terephthalate

SABIC Innovative Plastics

Message:

VALOX 830 is a 30% glass fibre reinforced PBT+PET blend with excellent surface finish. Applications: hot air gun housing assemblies, industrial glue guns, appliance housings and handles.

General Information			
UL YellowCard	E45329-236633		
Filler / Reinforcement	Glass fiber reinforced material, 30% filler by weight		
Features	Excellent appearance		
Uses	Handle		
	Industrial application		
	Home appliance components		
	Shell		
RoHS Compliance	RoHS compliance		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.55	g/cm ³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR)			ASTM D1238
265°C/2.16 kg	16	g/10 min	ASTM D1238
265°C/5.0 kg	45	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR)			ISO 1133
250°C/5.0 kg	23.0	cm ³ /10min	ISO 1133
265°C/2.16 kg	14.0	cm ³ /10min	ISO 1133
265°C/5.0 kg	35.0	cm ³ /10min	ISO 1133
Molding Shrinkage			Internal method
Flow ¹	0.40 - 0.80	%	Internal method
Flow: 3.20mm	0.20 - 1.0	%	Internal method
Transverse flow ²	0.60 - 1.0	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	0.15	%	ISO 62
Equilibrium, 23°C, 50% RH	0.060	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	123		ISO 2039-2
Ball Indentation Hardness (H 358/30)	174	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ³	10500	MPa	ASTM D638

--	10500	MPa	ISO 527-2/1
Tensile Strength			
Yield ⁴	140	MPa	ASTM D638
Yield	140	MPa	ISO 527-2/5
Fracture ⁵	140	MPa	ASTM D638
Fracture	140	MPa	ISO 527-2/5
Tensile Elongation			
Yield ⁶	3.0	%	ASTM D638
Yield	3.0	%	ISO 527-2/5
Fracture ⁷	3.0	%	ASTM D638
Fracture	3.0	%	ISO 527-2/5
Flexural Modulus			
50.0mm span ⁸	7400	MPa	ASTM D790
-- ⁹	8800	MPa	ISO 178
Flexural Stress			
--	215	MPa	ISO 178
--	200	MPa	ISO 178
Yield, 50.0mm span ¹⁰	205	MPa	ASTM D790
Fracture, 50.0mm span ¹¹	205	MPa	ASTM D790
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	30.0	mg	Internal method
Flexural Strain at Break ¹²	3.0	%	ISO 178
Filler Content	30	%	ASTM D229
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			
-30°C ¹³	9.0	kJ/m ²	ISO 179/1eA
-30°C	10	kJ/m ²	ISO 179/2C
23°C ¹⁴	9.0	kJ/m ²	ISO 179/1eA
23°C	10	kJ/m ²	ISO 179/2C
Charpy Unnotched Impact Strength			
-30°C ¹⁵	50	kJ/m ²	ISO 179/1eU
-30°C	55	kJ/m ²	ISO 179/2U
23°C ¹⁶	60	kJ/m ²	ISO 179/1eU, ISO 179/2U
Notched Izod Impact			
-30°C	90	J/m	ASTM D256
0°C	90	J/m	ASTM D256
23°C	90	J/m	ASTM D256
-30°C ¹⁷	9.0	kJ/m ²	ISO 180/1A
0°C ¹⁸	9.0	kJ/m ²	ISO 180/1A
23°C ¹⁹	10	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
-30°C	800	J/m	ASTM D4812

23°C	800	J/m	ASTM D4812
-30°C ²⁰	50	kJ/m ²	ISO 180/1U
23°C ²¹	50	kJ/m ²	ISO 180/1U
Instrumented Dart Impact (23°C, Total Energy)	3.50	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, unannealed, 3.20mm	220	°C	ASTM D648
0.45 MPa, unannealed, 100 mm span ²²	220	°C	ISO 75-2/Be
0.45 MPa, unannealed, 64.0mm span ²³	220	°C	ISO 75-2/Bf
1.8 MPa, unannealed, 3.20mm	200	°C	ASTM D648
1.8 MPa, unannealed, 6.40mm	208	°C	ASTM D648
1.8 MPa, unannealed, 100 mm span ²⁴	202	°C	ISO 75-2/Ae
1.8 MPa, unannealed, 64.0mm span ²⁵	200	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	208	°C	ASTM D1525, ISO 306/B50, ISO 306/B120 ²⁶
--	220	°C	ASTM D1525, ISO 306/A50 16 ²⁷
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
Linear thermal expansion coefficient			
Flow: -40 to 40°C	2.7E-5	cm/cm/°C	ASTM E831
Flow: -40 to 40°C	2.0E-5	cm/cm/°C	ISO 11359-2
Flow: 23 to 80°C	2.5E-5	cm/cm/°C	ISO 11359-2
Flow: 23 to 150°C	1.5E-5	cm/cm/°C	ISO 11359-2
Lateral: -40 to 40°C	7.8E-5	cm/cm/°C	ASTM E831
Lateral: -40 to 40°C	6.6E-5	cm/cm/°C	ISO 11359-2
Lateral: 23 to 80°C	8.1E-5	cm/cm/°C	ISO 11359-2
Horizontal: 23 to 150°C	1.4E-4	cm/cm/°C	ISO 11359-2
RTI Elec	120	°C	UL 746
RTI	120	°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			
0.800 mm, in Oil	27	kV/mm	ASTM D149
1.60 mm, in Oil	23	kV/mm	ASTM D149
3.20 mm, in Oil	15	kV/mm	ASTM D149
0.800mm, in oil	27	kV/mm	IEC 60243-1
1.60mm, in oil	23	kV/mm	IEC 60243-1
3.20mm, in oil	15	kV/mm	IEC 60243-1
Dielectric Constant			
1 MHz	3.20		ASTM D150, IEC 60250

50 Hz	3.30		IEC 60250
60 Hz	3.30		IEC 60250
100 Hz	3.60		IEC 60250
Dissipation Factor			
1 MHz	0.013		ASTM D150, IEC 60250
50 Hz	8.0E-4		IEC 60250
60 Hz	8.0E-4		IEC 60250
100 Hz	2.0E-3		IEC 60250
Arc Resistance ²⁸	PLC 6		ASTM D495
Comparative Tracking Index (CTI)	PLC 2		UL 746
Comparative Tracking Index			IEC 60112
--	325	V	IEC 60112
Solution B	150	V	IEC 60112
High Amp Arc Ignition (HAI)	PLC 3		UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 2		UL 746
Hot-wire Ignition (HWI)	PLC 0		UL 746
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
1.50 mm	HB		UL 94
3.00 mm	HB		UL 94
Glow Wire Flammability Index (1.00 mm)	750	°C	IEC 60695-2-12
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (260°C, 1500 sec ⁻¹)	208	Pa · s	ISO 11443
Injection	Nominal Value	Unit	
Drying Temperature	110 - 120	°C	
Drying Time	4.0 - 6.0	hr	
Suggested Max Moisture	0.020	%	
Hopper Temperature	40.0 - 60.0	°C	
Rear Temperature	240 - 260	°C	
Middle Temperature	255 - 280	°C	
Front Temperature	260 - 280	°C	
Nozzle Temperature	265 - 275	°C	
Processing (Melt) Temp	260 - 285	°C	
Mold Temperature	60.0 - 110	°C	
NOTE			
1.	Tensile Bar		
2.	Tensile Bar		
3.	5.0 mm/min		
4.	Type 1, 5.0 mm/min		
5.	Type 1, 5.0 mm/min		
6.	Type 1, 5.0 mm/min		
7.	Type 1, 5.0 mm/min		

8.	1.3 mm/min
9.	2.0 mm/min
10.	1.3 mm/min
11.	1.3 mm/min
12.	2 mm/min
13.	80*10*4 sp=62mm
14.	80*10*4 sp=62mm
15.	80*10*4 sp=62mm
16.	80*10*4 sp=62mm
17.	80*10*4
18.	80*10*4
19.	80*10*4
20.	80*10*4
21.	80*10*4
22.	120*10*4 mm
23.	80*10*4 mm
24.	120*10*4 mm
25.	80*10*4 mm
26.	标准 B (120°C/h), 载荷2 (50N)
27.	速率 A (50°C/h), 载荷2 (50N)
28.	Tungsten electrode

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