

VALOX™ 815 resin

Polybutylene Terephthalate + PET

SABIC Innovative Plastics

Message:

VALOX 815 is a 15% glass reinforced PBT+PET blend with excellent surface finish. Applications: hot air gun housings assemblies, industrial glue guns, appliance housings and handles.

General Information			
UL YellowCard	E45329-236632		
Filler / Reinforcement	Glass fiber reinforced material, 15% 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	1.43	g/cm ³	ASTM D792, ISO 1183
Specific Volume	0.700	cm ³ /g	ASTM D792
Flexural Strain at Break ¹	4.0	%	ISO 178
Melt Mass-Flow Rate (MFR)			ASTM D1238
250°C/5.0 kg	20	g/10 min	ASTM D1238
265°C/5.0 kg	60	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR)			ISO 1133
265°C/1.2 kg	12.0	cm ³ /10min	ISO 1133
265°C/5.0 kg	50.0	cm ³ /10min	ISO 1133
Molding Shrinkage			Internal method
Flow ²	0.40 - 0.60	%	Internal method
Flow ³	0.60 - 0.90	%	Internal method
Flow ⁴	0.40 - 0.80	%	Internal method
Transverse flow ⁵	0.50 - 0.80	%	Internal method
Transverse flow ⁶	0.80 - 1.1	%	Internal method
Transverse flow ⁷	0.60 - 1.0	%	Internal method
Water Absorption			
24 hr	0.060	%	ASTM D570
Saturated, 23°C	0.26	%	ISO 62
Equilibrium, 23°C, 50% RH	0.060	%	ISO 62
Hardness	Nominal Value	Unit	Test Method

Rockwell Hardness			
Class r	120		ASTM D785
R scale	120		ISO 2039-2
Ball Indentation Hardness (H 358/30)	102	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ⁸	6200	MPa	ASTM D638
--	6200	MPa	ISO 527-2/1
Tensile Strength			
Yield ⁹	100	MPa	ASTM D638
Yield	100	MPa	ISO 527-2/5
Fracture ¹⁰	100	MPa	ASTM D638
Fracture	100	MPa	ISO 527-2/5
Tensile Elongation			
Yield ¹¹	3.0	%	ASTM D638
Yield	3.0	%	ISO 527-2/5
Fracture ¹²	3.0	%	ASTM D638
Fracture	3.0	%	ISO 527-2/5
Flexural Modulus			
50.0mm span ¹³	5000	MPa	ASTM D790
-- ¹⁴	5200	MPa	ISO 178
Flexural Stress			
--	150	MPa	ISO 178
--	145	MPa	ISO 178
Yield, 50.0mm span ¹⁵	155	MPa	ASTM D790
Fracture, 50.0mm span ¹⁶	155	MPa	ASTM D790
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	17.0	mg	Internal method
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			
-30°C ¹⁷	4.0	kJ/m ²	ISO 179/1eA
-20°C	7.0	kJ/m ²	ISO 179/2C
23°C ¹⁸	5.0	kJ/m ²	ISO 179/1eA
23°C	7.0	kJ/m ²	ISO 179/2C
Charpy Unnotched Impact Strength ¹⁹			ISO 179/1eU, ISO 179/2U
-30°C	30	kJ/m ²	ISO 179/1eU, ISO 179/2U
23°C	30	kJ/m ²	ISO 179/1eU, ISO 179/2U
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 ²⁰	6.0	kJ/m ²	ISO 180/1A

0°C ²¹	6.0	kJ/m ²	ISO 180/1A
23°C ²²	6.0	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
-30°C	390	J/m	ASTM D4812
23°C	390	J/m	ASTM D4812
-30°C ²³	25	kJ/m ²	ISO 180/1U
23°C ²⁴	30	kJ/m ²	ISO 180/1U
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, unannealed, 6.40mm	210	°C	ASTM D648
0.45 MPa, unannealed, 100 mm span ²⁵	210	°C	ISO 75-2/Be
0.45 MPa, unannealed, 64.0mm span ²⁶	210	°C	ISO 75-2/Bf
1.8 MPa, unannealed, 6.40mm	160	°C	ASTM D648
1.8 MPa, unannealed, 100 mm span ²⁷	175	°C	ISO 75-2/Ae
1.8 MPa, unannealed, 64.0mm span ²⁸	167	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	204	°C	ASTM D1525, ISO 306/B50 19 ²⁹
--	220	°C	ASTM D1525, ISO 306/A50 20 ³⁰
--	200	°C	ISO 306/B120
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
Linear thermal expansion coefficient			
Flow: -40 to 40°C	4.5E-5	cm/cm/°C	ASTM E831
Flow: 60 to 138°C	5.4E-5	cm/cm/°C	ASTM E831
Flow: -40 to 40°C	3.2E-5	cm/cm/°C	ISO 11359-2
Flow: 23 to 80°C	5.5E-5	cm/cm/°C	ISO 11359-2
Flow: 23 to 150°C	2.4E-5	cm/cm/°C	ISO 11359-2
Lateral: -40 to 40°C	9.3E-5	cm/cm/°C	ASTM E831
Lateral: -40 to 40°C	7.2E-5	cm/cm/°C	ISO 11359-2
Lateral: 23 to 80°C	8.5E-5	cm/cm/°C	ISO 11359-2
Horizontal: 23 to 150°C	1.8E-4	cm/cm/°C	ISO 11359-2
Thermal Conductivity	0.19	W/m/K	ISO 8302
RTI Elec	125	°C	UL 746
RTI Imp	110	°C	UL 746
RTI	125	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity			
--	5.6E+16	ohms · cm	ASTM D257
--	> 1.0E+15	ohms · cm	IEC 60093
Dielectric Strength			
1.60 mm, in Oil	24	kV/mm	ASTM D149

3.20 mm, in Air	22	kV/mm	ASTM D149
0.800mm, in oil	30	kV/mm	IEC 60243-1
1.00 mm ³¹	18	kV/mm	IEC 60243-1
1.60mm, in oil	24	kV/mm	IEC 60243-1
3.20mm, in oil	16	kV/mm	IEC 60243-1
Dielectric Constant			
100 Hz	3.60		ASTM D150, IEC 60250
1 MHz	3.50		ASTM D150
50 Hz	3.00		IEC 60250
60 Hz	3.00		IEC 60250
1 MHz	2.90		IEC 60250
Dissipation Factor			
100 Hz	2.0E-3		ASTM D150, IEC 60250
50 Hz	1.0E-3		IEC 60250
60 Hz	1.0E-3		IEC 60250
1 MHz	0.014		IEC 60250
Arc Resistance ³²	PLC 5		ASTM D495
Comparative Tracking Index (CTI)	PLC 2		UL 746
Comparative Tracking Index			IEC 60112
--	325	V	IEC 60112
Solution B	175	V	IEC 60112
High Amp Arc Ignition (HAI)	PLC 2		UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 1		UL 746
Hot-wire Ignition (HWI)	PLC 2		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)	155	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.	2 mm/min
2.	1.5 to 3.2 mm
3.	3.2 to 4.6 mm
4.	Tensile Bar
5.	1.5 to 3.2 mm
6.	3.2-4.6 mm
7.	Tensile Bar
8.	5.0 mm/min
9.	Type 1, 5.0 mm/min
10.	Type 1, 5.0 mm/min
11.	Type 1, 50mm/min
12.	Type 1, 50mm/min
13.	1.3 mm/min
14.	2.0 mm/min
15.	1.3 mm/min
16.	1.3 mm/min
17.	80*10*4 sp=62mm
18.	80*10*4 sp=62mm
19.	80*10*4 sp=62mm
20.	80*10*4
21.	80*10*4
22.	80*10*4
23.	80*10*4
24.	80*10*4
25.	120*10*4 mm
26.	80*10*4 mm
27.	120*10*4 mm
28.	80*10*4 mm
29.	标准 B (120°C/h), 载荷2 (50N)
30.	速率 A (50°C/h), 载荷2 (50N)
31.	Short-Time
32.	Tungsten electrode

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