

VALOX™ DR51 resin

Polybutylene Terephthalate

SABIC Innovative Plastics

Message:

15% GR polyester, excellent mechanical, thermal and electrical performance. Non-flame retardant. Spotlights, appliance housings, handles, connectors

General Information			
UL YellowCard	E121562-220811		
Filler / Reinforcement	Glass Fiber,15% Filler by Weight		
Features	Good Electrical Properties		
Uses	Appliances		
	Connectors		
	Handles		
	Housings		
Processing Method	Injection Molding		
Multi-Point Data	Coefficient of Thermal Expansion vs. Temperature (ASTM E831)		
	Compressive Stress vs. Strain (ASTM D695)		
	Elastic Modulus vs Temperature (ASTM D4065)		
	Flexural DMA (ASTM D4065)		
	Pressure-Volume-Temperature (PVT - Zoller Method)		
	Shear DMA (ASTM D4065)		
	Specific Heat vs. Temperature (ASTM D3417)		
	Tensile Creep (ASTM D2990)		
	Tensile Fatigue		
	Tensile Stress vs. Strain (ASTM D638)		
	Thermal Conductivity vs. Temperature (ASTM E1530)		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.41	g/cm ³	ASTM D792
Specific Volume	0.712	cm ³ /g	ASTM D792
Molding Shrinkage			Internal Method
Flow ¹	0.40 to 0.60	%	
Flow ²	0.60 to 0.90	%	
Across Flow ³	0.50 to 0.80	%	
Across Flow ⁴	0.80 to 1.1	%	
Water Absorption (24 hr)	0.070	%	ASTM D570
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	118		ASTM D785
Mechanical	Nominal Value	Unit	Test Method

Tensile Strength ⁵ (Break)	93.1	MPa	ASTM D638
Tensile Elongation ⁶ (Break)	5.0	%	ASTM D638
Flexural Modulus ⁷ (50.0 mm Span)	4830	MPa	ASTM D790
Flexural Strength ⁸ (Break, 50.0 mm Span)	145	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (23°C)	53	J/m	ASTM D256
Unnotched Izod Impact (23°C)	530	J/m	ASTM D4812
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed, 6.40 mm	210	°C	
1.8 MPa, Unannealed, 6.40 mm	191	°C	
CLTE - Flow			ASTM E831
-40 to 40°C	2.2E-5	cm/cm/°C	
60 to 138°C	2.2E-5	cm/cm/°C	
RTI Elec	130	°C	UL 746
RTI Imp	130	°C	UL 746
RTI Str	140	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	3.3E+16	ohms · cm	ASTM D257
Dielectric Strength			ASTM D149
1.60 mm, in Oil	23	kV/mm	
3.20 mm, in Air	20	kV/mm	
Dielectric Constant			ASTM D150
100 Hz	3.60		
1 MHz	3.40		
Dissipation Factor			ASTM D150
100 Hz	2.0E-3		
1 MHz	0.020		
Arc Resistance ⁹	PLC 5		ASTM D495
Comparative Tracking Index (CTI)	PLC 2		UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 1		UL 746
Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.711 mm)	HB		UL 94
Injection	Nominal Value	Unit	
Drying Temperature	121	°C	
Drying Time	3.0 to 4.0	hr	
Drying Time, Maximum	12	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	40 to 80	%	
Rear Temperature	238 to 254	°C	
Middle Temperature	243 to 260	°C	
Front Temperature	249 to 266	°C	

Nozzle Temperature	243 to 260	°C
Processing (Melt) Temp	249 to 266	°C
Mold Temperature	65.6 to 87.8	°C
Back Pressure	0.345 to 0.689	MPa
Screw Speed	50 to 80	rpm
Vent Depth	0.025 to 0.038	mm

NOTE

1.	1.5 to 3.2 mm
2.	3.2 to 4.6 mm
3.	1.5 to 3.2 mm
4.	3.2-4.6 mm
5.	Type I, 5.0 mm/min
6.	Type I, 5.0 mm/min
7.	1.3 mm/min
8.	1.3 mm/min
9.	Tungsten Electrode

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Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

