

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	E45587-236794	E207780-100164507	
Filler / Reinforcement	Glass fiber reinforced material, 15% filler by weight		
Features	Good electrical performance		
Uses	Handle		
	Electrical appliances		
	Connector		
	Shell		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.41	g/cm³	ASTM D792
Specific Volume	0.712	cm³/g	ASTM D792
Molding Shrinkage			Internal method
Flow ¹	0.40 - 0.60	%	Internal method
Flow ²	0.60 - 0.90	%	Internal method
Transverse flow ³	0.50 - 0.80	%	Internal method
Transverse flow ⁴	0.80 - 1.1	%	Internal method
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, 6.40mm	210	°C	ASTM D648
1.8 MPa, unannealed, 6.40mm	191	°C	ASTM D648
CLTE - Flow			ASTM E831

-40 to 40°C	2.2E-5	cm/cm/°C	ASTM E831
60 to 138°C	2.2E-5	cm/cm/°C	ASTM E831
RTI Elec	130	°C	UL 746
RTI Imp	130	°C	UL 746
RTI	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	ASTM D149
3.20 mm, in Air	20	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
100 Hz	3.60		ASTM D150
1 MHz	3.40		ASTM D150
Dissipation Factor			ASTM D150
100 Hz	2.0E-3		ASTM D150
1 MHz	0.020		ASTM D150
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 - 4.0	hr	
Drying Time, Maximum	12	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	40 - 80	%	
Rear Temperature	238 - 254	°C	
Middle Temperature	243 - 260	°C	
Front Temperature	249 - 266	°C	
Nozzle Temperature	243 - 260	°C	
Processing (Melt) Temp	249 - 266	°C	
Mold Temperature	65.6 - 87.8	°C	
Back Pressure	0.345 - 0.689	MPa	
Screw Speed	50 - 80	rpm	
Vent Depth	0.025 - 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 1, 5.0 mm/min		

6.	Type 1, 5.0 mm/min
7.	1.3 mm/min
8.	1.3 mm/min
9.	Tungsten electrode

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