

VALOX™ FR RESINS DR48

REGION AMERICAS

DESCRIPTION

VALOX DR48 is a 17% glass filled, flame retardant Polybutyleneterephthalate (PBT) injection moldable grade with excellent chemical resistance. It has a UL94V0@0.90mm and 5VA@3.0mm flame rating. This is a good candidate for a variety of applications in the electrical industry including connectors, bobbins, and switches.

TYPICAL PROPERTY VALUES

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, brk, Type I, 5 mm/min	93	MPa	ASTM D638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	140	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	5200	MPa	ASTM D790
Hardness, Rockwell R	118	-	ASTM D785
IMPACT			
Izod Impact, unnotched, 23°C	500	J/m	ASTM D4812
Izod Impact, notched, 23°C	49	J/m	ASTM D256
THERMAL			
HDT, 0.45 MPa, 6.4 mm, unannealed	210	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	182	°C	ASTM D648
CTE, -40°C to 40°C, flow	1.98E-05	1/°C	ASTM E831
CTE, 60°C to 138°C, flow	1.98E-05	1/°C	ASTM E831
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Relative Temp Index, Elec	120	°C	UL 746B
Relative Temp Index, Mech w/impact	120	°C	UL 746B
Relative Temp Index, Mech w/o impact	140	°C	UL 746B
PHYSICAL			
Specific Gravity	1.53	-	ASTM D792
Specific Volume	0.65	cm³/g	ASTM D792
Water Absorption, (23°C/24hrs)	0.07	%	ASTM D570
Mold Shrinkage, flow, 1.5-3.2 mm	0.4 – 0.6	%	SABIC method
Mold Shrinkage, flow, 3.2-4.6 mm	0.6 – 0.9	%	SABIC method
Mold Shrinkage, xflow, 1.5-3.2 mm	0.5 – 0.8	%	SABIC method
Mold Shrinkage, xflow, 3.2-4.6 mm	0.8 – 1.1	%	SABIC method
ELECTRICAL			
Volume Resistivity	1.0E+15	Ω.cm	ASTM D257
Dielectric Strength, in air, 3.2 mm	18.8	kV/mm	ASTM D149
Dielectric Strength, in oil, 1.6 mm	25	kV/mm	ASTM D149
Relative Permittivity, 100 Hz	3.6	-	ASTM D150
Relative Permittivity, 1 MHz	3.4	-	ASTM D150
Dissipation Factor, 100 Hz	0.002	-	ASTM D150
Dissipation Factor, 1 MHz	0.016	-	ASTM D150
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D495

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Hot Wire Ignition {PLC}	3	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	0	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
FLAME CHARACTERISTICS			
UL Yellow Card Link	<u>E121562-103019052</u>	-	-
UL Yellow Card Link 2	<u>E121562-220810</u>	-	-
UL Recognized, 94V-0 Flame Class Rating	0.9	mm	UL 94
UL Recognized, 94-5VA Flame Class Rating	3.0	mm	UL 94
Oxygen Index (LOI)	29	%	ASTM D2863
Glow Wire Flammability Index 960°C, passes at	1	mm	IEC 60695-2-12
Glow Wire Flammability Index 960°C, passes at, by VDE	3	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.0 mm	700	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	725	°C	IEC 60695-2-13
INJECTION MOLDING			
Drying Temperature	120	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	12	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	250 – 265	°C	
Nozzle Temperature	245 – 260	°C	
Front - Zone 3 Temperature	250 – 265	°C	
Middle - Zone 2 Temperature	245 – 260	°C	
Rear - Zone 1 Temperature	240 – 255	°C	
Mold Temperature	65 – 90	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	50 – 80	rpm	
Shot to Cylinder Size	40 – 80	%	
Vent Depth	0.025 – 0.038	mm	