

VALOX™ FR RESIN 357U

REGION AMERICAS

DESCRIPTION

VALOX 357U Polycarbonate/Polybutylene Terephthalate (PC/PBT) resin is a non-reinforced, impact modified, UV stabilized, injection moldable grade. This brominated flame retardant PC/PBT has a UL V0 and 5VA rating. VALOX 357U resin is a general purpose resin that is an excellent candidate for a wide variety of applications including bobbins, switches and enclosures.

TYPICAL PROPERTY VALUES

Revision 20180608

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Modulus, 50 mm/min	2050	MPa	ASTM D 638
Tensile Stress, yld, Type I, 50 mm/min	48	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	48	MPa	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	110	%	ASTM D 638
Tensile Strain, yield, 50 mm/min	5.28	%	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	82	MPa	ASTM D 790
Flexural Stress, brk, 1.3 mm/min, 50 mm span	82	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2060	MPa	ASTM D 790
Hardness, Rockwell R	117	-	ASTM D 785
IMPACT			
Izod Impact, unnotched, 23°C	3204	J/m	ASTM D 4812
Izod Impact, notched, 23°C	534	J/m	ASTM D 256
Gardner, 23°C	43	J	ASTM D 3029
Modified Gardner, 23°C	43	J	ASTM D 3029
THERMAL			
HDT, 0.45 MPa, 6.4 mm, unannealed	137	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	98	°C	ASTM D 648
CTE, -40°C to 40°C, flow	9.18E-05	1/°C	ASTM E 831
CTE, 60°C to 138°C, flow	1.24E-04	1/°C	ASTM E 831
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	1.34	-	ASTM D 792
Specific Volume	0.75	cm ³ /g	ASTM D 792

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Water Absorption, 24 hours	0.08	%	ASTM D 570
Mold Shrinkage, flow, 0.75-2.3 mm (5)	0.8 – 1.1	%	SABIC method
Mold Shrinkage, flow, 2.3-4.6 mm (5)	1 – 1.4	%	SABIC method
Mold Shrinkage, xflow, 0.75-2.3 mm (5)	0.9 – 1.3	%	SABIC method
Mold Shrinkage, xflow, 2.3-4.6 mm (5)	1.2 – 1.6	%	SABIC method
Melt Volume Rate, MVR at 250°C/5.0 kg	8	cm ³ /10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	>1.2E+16	Ohm-cm	ASTM D 257
Dielectric Strength, in air, 3.2 mm	18.5	kV/mm	ASTM D 149
Dielectric Strength, in oil, 1.6 mm	25.2	kV/mm	ASTM D 149
Dielectric Strength, in oil, 3.2 mm	18.5	kV/mm	ASTM D 149
Relative Permittivity, 100 Hz	3.2	-	ASTM D 150
Relative Permittivity, 1 MHz	3.2	-	ASTM D 150
Dissipation Factor, 100 Hz	0.003	-	ASTM D 150
Dissipation Factor, 1 MHz	0.03	-	ASTM D 150
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
Hot Wire Ignition {PLC}	2	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	3	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	3	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	2	PLC Code	UL 746A
FLAME CHARACTERISTICS			
UL Recognized, 94HB Flame Class Rating (3)	0.46	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating (3)	0.64	mm	UL 94
UL Recognized, 94-5VA Rating (3)	3	mm	UL 94
Oxygen Index (LOI)	30	%	ASTM D 2863
UV-light, water exposure/immersion	F1	-	UL 746C
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	50 – 75	°C	
Back Pressure	0.3 – 0.7	MPa	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Screw Speed	50 – 100	rpm	
Shot to Cylinder Size	40 – 80	%	
Vent Depth	0.025 – 0.038	mm	

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