VALOX™ FR RESINS 357

REGION ASIA

DESCRIPTION

VALOX 357 is an unreinforced, impact modified flame retardant Polybutylene Terephthalate/Polycarbonate (PBT/PC) injection moldable grade. It has excellent chemical resistance and a UL94V0@0.63mm and 5VA@3.0mm flame rating. This is a good candidate for applications in the electrical industry including bobbins, switches, and enclosures.

TYPICAL PROPERTY VALUES

Revision 20260603

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	48	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	45	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	5	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	110	%	ASTM D638
Tensile Modulus, 5 mm/min	2020	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	83	MPa	ASTM D790
Flexural Stress, brk, 1.3 mm/min, 50 mm span	83	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2060	MPa	ASTM D790
Hardness, Rockwell R	117	-	ASTM D785
IMPACT			
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812
Izod Impact, notched, 23°C	534	J/m	ASTM D256
Izod Impact, notched, -30°C	153	J/m	ASTM D256
Gardner, 23°C	43	J	ASTM D3029
Modified Gardner, 23°C	43	J	ASTM D3029
Instrumented Dart Impact Total Energy, 23°C	35	J	ASTM D3763
Izod Impact, notched 80*10*4 +23°C	45	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	10	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	NB	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	45	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate B/50	134	°C	ASTM D1525
HDT, 0.45 MPa, 6.4 mm, unannealed	138	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	99	°C	ASTM D648
CTE			
-40°C to 40°C, flow	9.18E-05	1/°C	ASTM E831
-40°C to 40°C, xflow	8.4E-05	1/°C	ASTM E831
60°C to 138°C, flow	1.24E-04	1/°C	ISO 11359-2
-40°C to 40°C, flow	7.2E-05	1/°C	ISO 11359-2
-40°C to 40°C, xflow	8.4E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	145	°C	ISO 306
Vicat Softening Temp, Rate B/120	150	°C	ISO 306

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HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	84	°C	ISO 75/Af
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	125	°C	ISO 75/Bf
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 D792
Specific Volume	0.75	cm³/g	ASTM D792
Water Absorption, (23°C/24hrs)	0.08	%	ASTM D570
Moisture Absorption, (23°C/50% RH/24 hrs)	0.08	%	ASTM D570
Mold Shrinkage, flow, 3.2 mm	1 – 1.4	%	SABIC method
Mold Shrinkage, flow, 0.75-2.3 mm	0.8 – 1.1	%	SABIC method
Mold Shrinkage, flow, 2.3-4.6 mm	1 – 1.4	%	SABIC method
Mold Shrinkage, xflow, 0.75-2.3 mm	0.9 – 1.3	%	SABIC method
Mold Shrinkage, xflow, 2.3-4.6 mm	1.2 – 1.6	%	SABIC method
Melt Flow Rate, 250°C/5.0 kgf	9.6	g/10 min	ASTM D1238
Density	1.34	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	0.5	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.15	%	ISO 62
Melt Volume Rate, MVR at 250°C/5.0 kg	8	cm³/10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	>1.2E+16	Ω.cm	ASTM D257
Dielectric Strength, in air, 3.2 mm	18.5	kV/mm	ASTM D149
Dielectric Strength, in oil, 1.6 mm	25.2	kV/mm	ASTM D149
Dielectric Strength, in oil, 3.2 mm	18.5	kV/mm	ASTM D149
Relative Permittivity, 100 Hz	3.2	-	ASTM D150
Relative Permittivity, 1 MHz	3.2	-	ASTM D150
Dissipation Factor, 100 Hz	0.003	-	ASTM D150
Dissipation Factor, 1 MHz	0.03	-	ASTM D150
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D495
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 Yellow Card Link	E207780-100434202	-	-
UL Yellow Card Link 2	E207780-643583	-	-
UL Yellow Card Link 3	E45587-236811	-	-
UL Recognized, 94HB Flame Class Rating	0.46	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	0.63	mm	UL 94
UL Recognized, 94-5VA Flame Class Rating	3	mm	UL 94
Oxygen Index (LOI)	30	%	ASTM D2863
UV-light, water exposure/immersion	F2	-	UL 746C
INJECTION MOLDING			
Drying Temperature	120	°C	

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

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