

VALOXTM RESIN VIC4311

REGION AMERICAS

DESCRIPTION

VALOX VIC4311 is a 30% glass filled, impact modified PBT with excellent epoxy adhesion. Automotive underhood applications such as ignition coil housings.

TYPICAL PROPERTY VALUES

Revision 20181012

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	83	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	84	MPa	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	3	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	4	%	ASTM D 638
Tensile Modulus, 5 mm/min	8360	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	129	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	6080	MPa	ASTM D 790
Tensile Stress, yield, 5 mm/min	86	MPa	ISO 527
Tensile Stress, break, 5 mm/min	84	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	3	%	ISO 527
Tensile Strain, break, 5 mm/min	4	%	ISO 527
Tensile Modulus, 1 mm/min	7370	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	139	MPa	ISO 178
Flexural Modulus, 2 mm/min	6180	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	137	J/m	ASTM D 256
Izod Impact, notched, -30°C	97	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	13	J	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	12	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	9	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	16	kJ/m ²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	180	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	220	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	205	°C	ASTM D 648
CTE, -40°C to 40°C, flow	2.3E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	1.14E-04	1/°C	ASTM E 831
CTE, -30°C to 30°C	3.E-05	1/°C	TMA
CTE, -40°C to 40°C, flow	2.3E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	1.14E-04	1/°C	ISO 11359-2
Ball Pressure Test, 75°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	175	°C	ISO 306
Vicat Softening Temp, Rate B/120	170	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	175	°C	ISO 75/Af

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
PHYSICAL			
Specific Gravity	1.42	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.2 – 0.4	%	SABIC method
Mold Shrinkage, flow, 6.4 mm	0.6 – 0.8	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	0.6 – 0.8	%	SABIC method
Melt Flow Rate, 250°C/5.0 kgf	19	g/10 min	ASTM D 1238
Density	1.42	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	0.09	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.07	%	ISO 62
Melt Volume Rate, MVR at 250°C/5.0 kg	15	cm ³ /10 min	ISO 1133
ELECTRICAL			
Surface Resistivity	1.E+16	Ohm	ASTM D 257
Relative Permittivity, 50/60 Hz	3	-	ASTM D 150
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	

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