SABIC Innovative Plastics™

Valox* Resin VIC4311

Americas: COMMERCIAL

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

Property

TYPICAL PROPERTIES (1)			
MECHANICAL	Value	Unit	Standard
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	Value	Unit	Standard
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/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	9	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	16	kJ/m²	ISO 179/1eA
THERMAL	Value	Unit	Standard
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
PHYSICAL	Value	Unit	Standard
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/cm³	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	cm³/10 min	ISO 1133
ELECTRICAL	Value	Unit	Standard
Surface Resistivity	1.E+16	Ohm	ASTM D 257
Relative Permittivity, 50/60 Hz	3	-	ASTM D 150

Source GMD, last updated:10/13/2004

Processing

Parameter Injection Molding	Value	Unit
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

Source GMD, last updated:10/13/2004

THESE PROPERTY VALUES ARE NOT INTENDED FOR SPECIFICATION PURPOSES.

PLEASE CHECK WITH YOUR (LOCAL SALES OFFICE) FOR AVAILABILITY IN YOUR REGION

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.
(2) Only typical data for selection purposes. Not to be used for part or tool design.
(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.
(4) Internal measurements according to UL standards.

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