

VALOX™ Resin VX5011 - Europe

Polybutylene Terephthalate

SABIC

PROSPECTOR®

www.ulprospector.com

Technical Data

Product Description

VALOX VX5011 is a 10% glass fibre reinforced PBT+PC blend with low warpage characteristics.

General

Material Status	• Commercial: Active
Search for UL Yellow Card	• SABIC • VALOX™ Resin
Availability	• Europe
Uses	• Appliances • Automotive Interior Parts • Automotive Under the Hood • Electrical Parts • Electrical/Electronic Applications • Electronic Displays

Physical	Nominal Value Unit	Test Method
Density / Specific Gravity	1.31 g/cm ³	ASTM D792 ISO 1183
Melt Mass-Flow Rate (MFR)		ASTM D1238
200°C/3.8 kg	18 g/10 min	
265°C/5.0 kg	85 g/10 min	
266°C/5.0 kg	85 g/10 min	
Melt Volume-Flow Rate (MVR)		ISO 1133
250°C/2.16 kg	18 cm ³ /10min	
250°C/5.0 kg	50 cm ³ /10min	
265°C/5.0 kg	75 cm ³ /10min	
Molding Shrinkage		Internal Method
Across Flow ²	0.50 to 0.90 %	
Flow ²	0.30 to 0.80 %	
Flow : 3.20 mm	0.40 to 0.60 %	
Water Absorption		ISO 62
Saturation, 23°C	0.15 %	
Equilibrium, 23°C, 50% RH	0.10 %	

Mechanical	Nominal Value Unit	Test Method
Tensile Modulus		
-- ³	4600 MPa	ASTM D638
--	4700 MPa	ISO 527-1/1
Tensile Strength		
Yield ⁴	90.0 MPa	ASTM D638
Yield	95.0 MPa	ISO 527-2/5
Break ⁴	90.0 MPa	ASTM D638
Break	95.0 MPa	ISO 527-2/5
Tensile Elongation		
Yield ⁴	3.0 %	ASTM D638
Yield	3.0 %	ISO 527-2/5
Break ⁴	3.0 %	ASTM D638
Break	3.0 %	ISO 527-2/5
Flexural Modulus		
50.0 mm Span ⁵	3600 MPa	ASTM D790
-- ⁶	4000 MPa	ISO 178
Flexural Stress		
-- ^{6, 7}	140 MPa	ISO 178
-- ^{6, 8}	130 MPa	ISO 178
Yield, 50.0 mm Span ⁵	126 MPa	ASTM D790
Flexural Strain - at Break ⁹	5.0 %	ISO 178



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Mechanical	Nominal Value Unit	Test Method
Taber Abrasion Resistance 1000 Cycles, 1000 g, CS-17 Wheel	54.0 mg	Internal Method
Impact	Nominal Value Unit	Test Method
Charpy Notched Impact Strength		
-30°C ¹⁰	4.0 kJ/m ²	ISO 179/1eA
-30°C	6.0 kJ/m ²	ISO 179/2C
23°C ¹⁰	4.0 kJ/m ²	ISO 179/1eA
23°C	6.0 kJ/m ²	ISO 179/2C
Charpy Unnotched Impact Strength		
-30°C ¹⁰	30 kJ/m ²	ISO 179/1eU
-30°C	40 kJ/m ²	ISO 179/2U
23°C ¹⁰	40 kJ/m ²	ISO 179/1eU ISO 179/2U
Notched Izod Impact		
-30°C	47 J/m	ASTM D256
0°C	47 J/m	ASTM D256
23°C	47 J/m	ASTM D256
-30°C ¹¹	5.0 kJ/m ²	ISO 180/1A
0°C ¹¹	5.0 kJ/m ²	ISO 180/1A
23°C ¹¹	6.0 kJ/m ²	ISO 180/1A
Unnotched Izod Impact		
-30°C	470 J/m	ASTM D4812
23°C	480 J/m	ASTM D4812
-30°C ¹¹	30 kJ/m ²	ISO 180/1U
23°C ¹¹	40 kJ/m ²	ISO 180/1U
Instrumented Dart Impact 23°C, Total Energy	37.0 J	ASTM D3763
Hardness	Nominal Value Unit	Test Method
Rockwell Hardness (R-Scale)	122	ISO 2039-2
Ball Indentation Hardness (H 358/30)	165 MPa	ISO 2039-1
Thermal	Nominal Value Unit	Test Method
Deflection Temperature Under Load		
0.45 MPa, Unannealed, 3.20 mm	175 °C	ASTM D648
0.45 MPa, Unannealed, 4.00 mm, 64.0 mm Span ¹¹	135 °C	ISO 75-2/Bf
1.8 MPa, Unannealed, 3.20 mm	115 °C	ASTM D648
1.8 MPa, Unannealed, 4.00 mm, 64.0 mm Span ¹¹	115 °C	ISO 75-2/Af
Vicat Softening Temperature		
--	205 °C	ASTM D1525 ¹² ISO 306/A50 ¹²
--	145 °C	ASTM D1525 ¹³
Ball Pressure Test (123 to 127°C)	Pass	IEC 60695-10-2
CLTE		
Flow : -40 to 40°C	4.0E-5 cm/cm/°C	ASTM E831
Flow : -40 to 40°C	3.7E-5 cm/cm/°C	ISO 11359-2
Flow : 23 to 80°C	4.0E-5 cm/cm/°C	ISO 11359-2
Flow : 23 to 150°C	3.9E-5 cm/cm/°C	ISO 11359-2
Transverse : -40 to 40°C	9.0E-5 cm/cm/°C	ASTM E831
Transverse : -40 to 40°C	7.0E-5 cm/cm/°C	ISO 11359-2
Transverse : 23 to 80°C	9.0E-5 cm/cm/°C	ISO 11359-2
Transverse : 23 to 150°C	1.5E-4 cm/cm/°C	ISO 11359-2
Electrical	Nominal Value Unit	Test Method
Surface Resistivity	> 1.0E+15 ohms	IEC 60093



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Electrical	Nominal Value Unit	Test Method
Volume Resistivity	> 1.0E+15 ohms·cm	ASTM D257 IEC 60093
Dielectric Strength		ASTM D149 IEC 60243-1
0.800 mm, in Oil	29 kV/mm	
1.60 mm, in Oil	25 kV/mm	
3.20 mm, in Oil	18 kV/mm	
Dielectric Constant		
1 MHz	3.10	ASTM D150 IEC 60250
50 Hz	3.00	IEC 60250
60 Hz	3.00	IEC 60250
100 Hz	3.20	IEC 60250
Dissipation Factor		
1 MHz	0.014	ASTM D150 IEC 60250
50 Hz	9.0E-3	IEC 60250
60 Hz	9.0E-3	IEC 60250
100 Hz	0.016	IEC 60250
Comparative Tracking Index		IEC 60112
--	200 V	
Solution B	100 V	
High Amp Arc Ignition (HAI) ¹⁴	PLC 0	UL 746A
Hot-wire Ignition (HWI)	PLC 0	UL 746A
Flammability	Nominal Value Unit	Test Method
Flame Rating (1.6 mm, Testing by SABIC)	HB	UL 94
Glow Wire Flammability Index		IEC 60695-2-12
1.0 mm	750 °C	
3.0 mm	850 °C	
Oxygen Index	21 %	ISO 4589-2
Fill Analysis	Nominal Value Unit	Test Method
Melt Viscosity (260 °C, 1500 sec ⁻¹)	145 Pa·s	ISO 11443
Additional Information	Nominal Value Unit	Test Method
Filler Content	10 %	ASTM D229
Injection	Nominal Value Unit	
Drying Temperature	110 to 120 °C	
Drying Time	2.0 to 4.0 hr	
Suggested Max Moisture	0.020 %	
Hopper Temperature	40 to 60 °C	
Rear Temperature	230 to 245 °C	
Middle Temperature	240 to 255 °C	
Front Temperature	245 to 265 °C	
Nozzle Temperature	240 to 260 °C	
Processing (Melt) Temp	250 to 270 °C	
Mold Temperature	40 to 100 °C	



Notes

¹ Typical properties: these are not to be construed as specifications.

² Tensile Bar

³ 5.0 mm/min

⁴ Type I, 5.0 mm/min

⁵ 1.3 mm/min

⁶ 2.0 mm/min

⁷ at Yield

⁸ at Break

⁹ 2 mm/min

¹⁰ 80*10*4 sp=62mm

¹¹ 80*10*4 mm

¹² Rate A (50°C/h), Loading 1 (10 N)

¹³ Rate A (50°C/h), Loading 2 (50 N)

¹⁴ Surface



Where to Buy**Supplier****SABIC**Web: <http://www.sabic.com/>**Distributor****AECTRA**

Telephone: +33-4-72-54-36-42

Web: <https://www.aectra.fr/>

Availability: Bulgaria, Romania

AGI-Augusto Guimarães & Irmão

Telephone: +351-22753-7400

Web: <https://www.agi.pt/en/>

Availability: Portugal

GRÄSSLIN

Telephone: +49-7721-4040-261

Web: <https://www.graesslin-kunststoffe.de>

Availability: Germany

Guzmán Polymers

Telephone: +34-963-992-400

Web: <https://www.guzmanglobal.com/en/productos/plastics/>

Availability: Italy, Spain, Turkey

Lenorplastics

Telephone: +41-61-706-11-11

Web: <https://www.lenorplastics.ch>

Availability: Switzerland

Plastoplan

Telephone: +43-1-25040-0

Web: <https://www.plastoplan.com/>

Availability: Austria, Czech Republic, Hungary, Poland, Slovakia

POLYMIX*POLYMIX is a Pan European distribution company. Contact POLYMIX for availability of individual products by country.*

Telephone: +33-3-8920-1380

Web: <http://www.polymix.eu/>

Availability: France

RESINEX Group*RESINEX is a Pan European distribution company. Contact RESINEX for availability of individual products by country.*

Telephone: +32-14-672511

Web: <http://www.resinex.com/>

Availability: Europe

Ultrapolymers*Ultrapolymers is a Pan European distribution company. Contact Ultrapolymers for availability of individual products by country.*

Telephone: +32-11-57-95-57

Web: <http://www.ultrapolymers.com/>

Availability: Belgium, Netherlands, South Africa

