SABIC Innovative Plastics™

سابك sabic

Valox* Resin V3900WX

Asia Pacific: COMMERCIAL

PBT/PC blend - Unreinforced - Flame Retardant. This is a UV-stabilized grade designed for outdoor enclosure applications requiring UL 746C F1 weatherability performance.

TYPICAL PROPERTIES [1]	TYPICAL VALUE	UNIT	STANDARD
MECHANICAL			
Tensile Stress, yield	48	MPa	SABIC - Japan Method
Tensile Stress, yld, Type I, 50 mm/min	53	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	43	MPa	ASTM D 638
Tensile Strain, break	250	%	SABIC - Japan Method
Tensile Strain, yld, Type I, 50 mm/min	5	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	50	%	ASTM D 638
Tensile Modulus, 5 mm/min	2200	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	80	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2200	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	51	MPa	ISO 527
Tensile Stress, break, 50 mm/min	40	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4	%	ISO 527
Tensile Strain, break, 50 mm/min	42	%	ISO 527
Tensile Modulus, 1 mm/min	2090	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	73	MPa	ISO 178
Flexural Modulus, 2 mm/min	2130	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	800	J/m	ASTM D 256
Izod Impact, notched, -30°C	110	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	50	J	ASTM D 3763
Instrumented Impact Total Energy, -40°C	50	J	ASTM D 3673
Izod Impact, notched 80*10*4 +23°C	41	kJ/m²	ISO 180/1A

1) Typical values only. Variations within normal tolerances are possible for variose colours.All values are measured at least after 48 hours storage at 230C/50% relative humidity.
All properties, expect the melt volume rate are measured on injection moulded samples.
All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose.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) Own measurement according to UL.

Source, GMD, Last Update:08/28/2006

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TYPICAL PROPERTIES [1]	TYPICAL VALUE	UNIT	STANDARD
IMPACT			
Izod Impact, notched 80*10*4 -30°C	8	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	52	kJ/m²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	105	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	75	°C	ASTM D 648
HDT, 0.45 MPa, 6.4 mm, unannealed	119	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	96	°C	ASTM D 648
CTE, -40°C to 40°C, flow	8.84E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	8.97E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	8.84E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	8.97E-05	1/°C	ISO 11359-2
Ball Pressure Test, 75°C +/- 2°C	pass	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	121	°C	ISO 306
Vicat Softening Temp, Rate B/120	123	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	77	°C	ISO 75/Af
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	120	°C	UL 746B
PHYSICAL			
Specific Gravity	1.3	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.7 - 1	%	SABIC Method
Melt Flow Rate, 266°C/5.0 kgf	35	g/10 min	ASTM D 1238
Density	1.3	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.1	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.03	%	ISO 62

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Asia Pacific: COMMERCIAL

TYPICAL PROPERTIES [1]	TYPICAL VALUE	UNIT	STANDARD
PHYSICAL			
Melt Volume Rate, MVR at 265°C/2.16 kg	11	cm^3/10 min	ISO 1133
FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating (3)	1.5	mm	UL 94
UL Recognized, 94-5VA Rating (3)	3	mm	UL 94
UV-light, water exposure/immersion	F1	-	UL 746C

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PROCESSING PARAMETERS	TYPICAL VALUE	UNIT
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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Component - Plastics **E207780**

SABIC INNOVATIVE PLASTICS JAPAN L L C

PACIFIC GRADES - RESIN, 2-2 KINUGAOKA, MOKA-SHI TOCHIGI-KEN 321-4392 JP

V3900WX (GG)(f1)(IA), V3901WX (GG)(f1)(IA)

Polybutylene Terephthalate/Polycarbonate (PBT/PC), "Valox", furnished as pellets

Color	Min Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
ALL	1.5	V-0	3	0	120	120	120
	3.0	V-0, 5VA	-	-	120	120	120

Comparative Tracking Index (CTI): **2**

Inclined Plane Tracking (IPT): **60 min at 1kV**

Dielectric Strength (kV/mm): **33**

Volume Resistivity (10^x ohm-cm) : **14**

High-Voltage Arc Tracking Rate (HVTR): **-**

High Volt, Low Current Arc Resis (D495): **-**

Dimensional Stability (%): -

(GG) - Denotes a global grade formulation previously in File E161759.

(f1) - Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.

IA - Inclined Plane Tracking per UL746A, average time to track at 1.0 kV is 60+ minutes.

NOTE - Material designation may be followed by a color nomenclature consisiting of either an alpha/numeric or numeric/alpha combination.

ANSI/UL 94 small-scale test data does not pertain to building materials, furnishings and related contents. ANSI/UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

Report Date:2005-06-08
Last Revised:2012-06-23

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IEC and ISO Test Methods

Test Name	Test Method	Units	Thickness Tested (mm)	Value
Flammability	IEC 60695-11-10, IEC 60695-11-20	Class (color)	1.5	V-0 (ALL)
			3.0	V-0, 5VA (ALL)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	C	-	-
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	C	3.0	725
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
IEC Ball Pressure	IEC 60695-10-2	C	-	-
ISO Heat Deflection (1.80 MPa)	ISO 75-2	C	-	-
ISO Tensile Strength	ISO 527-2	MPa	-	-
ISO Flexural Strength	ISO 178	MPa	-	-
ISO Tensile Impact	ISO 8256	kJ/m^2	4.0	165
ISO Izod Impact	ISO 180	kJ/m^2	-	-
ISO Charpy Impact	ISO 179-2	kJ/m^2	-	-

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