

VALOX™ FR RESINS V3900WX

REGION EUROPE

DESCRIPTION

VALOX V3900WX is an unreinforced, UV stabilized, weatherable, impact modified flame retardant Polybutylene Terephthalate/Polycarbonate (PBT) injection moldable grade. It has excellent chemical resistance and a UL94V0@1.5mm and 5VA@3.0mm flame rating. This is an excellent candidate for a wide variety of applications including outdoor enclosures requiring UL746C F1 weatherability performance.

TYPICAL PROPERTY VALUES

Revision 20190628

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	53	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	43	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	5	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	50	%	ASTM D638
Tensile Modulus, 5 mm/min	2200	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	80	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2200	MPa	ASTM D790
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	>40	%	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 D256
Izod Impact, notched, -30°C	110	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	50	J	ASTM D3763
Izod Impact, notched 80*10*4 +23°C	45	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 0°C	15	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	8	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	52	kJ/m ²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	105	°C	ASTM D1525
HDT, 1.82 MPa, 3.2mm, unannealed	75	°C	ASTM D648
CTE, -40°C to 40°C, flow	8.84E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	8.97E-05	1/°C	ASTM E831
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, 125°C +/- 2°C	PASSES	-	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

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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 D792
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/saturated)	0.1	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.03	%	ISO 62
Melt Volume Rate, MVR at 265°C/2.16 kg	11	cm³/ 10 min	ISO 1133
Melt Viscosity, 260°C, 1500 sec-1	260	Pa-s	ISO 11443
FLAME CHARACTERISTICS			
UL Compliant, 94V-0 Flame Class Rating	1.5	mm	UL 94 by SABIC-IP
UL Compliant, 94-5VA Rating	3	mm	UL 94 by SABIC-IP
UL Recognized, 94V-0 Flame Class Rating	1.5	mm	UL 94
UL Recognized, 94-5VA Flame Class Rating	3	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	1	mm	IEC 60695-2-12
Glow Wire Flammability Index 960°C, passes at, by VDE	3	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.0 mm	825	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	725	°C	IEC 60695-2-13
UV-light, water exposure/immersion	F1	-	UL 746C
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	

DISCLAIMER

Any sale by SABIC, its subsidiaries and affiliates (each a "seller"), is made exclusively under seller's standard conditions of sale (available upon request) unless agreed otherwise in writing and signed on behalf of the seller. While the information contained herein is given in good faith, SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND NONINFRINGEMENT OF INTELLECTUAL PROPERTY, NOR ASSUMES ANY LIABILITY, DIRECT OR INDIRECT, WITH RESPECT TO THE PERFORMANCE, SUITABILITY OR FITNESS FOR INTENDED USE OR PURPOSE OF THESE PRODUCTS IN ANY APPLICATION. Each customer must determine the suitability of seller materials for the customer's particular use through appropriate testing and analysis. No statement by seller concerning a possible use of any product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right.