

# VALOX<sup>TM</sup> RESIN 176

REGION AMERICAS

## DESCRIPTION

Unreinforced, neat PBT resin for fibers. Natural Color Only, Not intended for injection molding.

## TYPICAL PROPERTY VALUES

Revision 20181012

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 50 mm/min	50	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	50	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	2	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	2	%	ASTM D 638
Tensile Modulus, 5 mm/min	2500	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	84	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2390	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	45	MPa	ISO 527
Tensile Stress, break, 50 mm/min	45	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	1.8	%	ISO 527
Tensile Strain, break, 50 mm/min	1.8	%	ISO 527
Tensile Modulus, 1 mm/min	2600	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	81	MPa	ISO 178
Flexural Modulus, 2 mm/min	2290	MPa	ISO 178
<b>IMPACT</b>			
Izod Impact, unnotched, 23°C	890	J/m	ASTM D 4812
Izod Impact, notched, 23°C	28	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	5	J	ASTM D 3763
Izod Impact, unnotched 80°10'4 +23°C	35	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, notched 80°10'4 +23°C	2	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80°10'4 sp=62mm	7	kJ/m <sup>2</sup>	ISO 179/1eA
<b>THERMAL</b>			
HDT, 0.45 MPa, 3.2 mm, unannealed	104	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	48	°C	ASTM D 648
CTE, -40°C to 40°C, flow	8.5E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	8.5E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	178	°C	ISO 306
Vicat Softening Temp, Rate B/120	177	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80°10'4 sp=64mm	113	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80°10'4 sp=64mm	51	°C	ISO 75/Af
<b>PHYSICAL</b>			
Specific Gravity	1.32	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	1.5 – 1.8	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	1.6 – 2	%	SABIC method

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Melt Flow Rate, 250°C/1.2 kgf	127	g/10 min	ASTM D 1238
Melt Viscosity	0	Pa-s	SABIC method
Density	1.31	g/cm <sup>3</sup>	ISO 1183
Water Absorption, (23°C/sat)	0.08	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.07	%	ISO 62
Melt Volume Rate, MVR at 250°C/1.2 kg	127	cm <sup>3</sup> /10 min	ISO 1133
Melt Volume Rate, MVR at 250°C/2.16 kg	231	cm <sup>3</sup> /10 min	ISO 1133
<b>COMPOUNDING EXTRUSION</b>			
Drying Temperature	110 – 120	°C	
Drying Time	4 – 6	hrs	
Drying Time (Cumulative)	8	hrs	
Maximum Moisture Content	0	%	
Melt Temperature	245 – 260	°C	
Barrel - Zone 1 Temperature	200 – 230	°C	
Barrel - Zone 2 Temperature	240 – 255	°C	
Barrel - Zone 3 Temperature	240 – 275	°C	
Barrel - Zone 4 Temperature	240 – 275	°C	
Adapter Temperature	240 – 275	°C	
Die Temperature	240 – 275	°C	
Waterbath Temperature	25 – 35	°C	

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