

VALOX™ RESIN 176

REGION AMERICAS

DESCRIPTION

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

TYPICAL PROPERTY VALUES

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	50	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	50	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	2	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	2	%	ASTM D638
Tensile Modulus, 5 mm/min	2500	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	84	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2390	MPa	ASTM D790
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
IMPACT			
Izod Impact, unnotched, 23°C	890	J/m	ASTM D4812
Izod Impact, notched, 23°C	28	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	5	J	ASTM D3763
Izod Impact, unnotched 80°10°4 +23°C	35	kJ/m²	ISO 180/1U
Izod Impact, notched 80°10°4 +23°C	2	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80°10°4 sp=62mm	7	kJ/m²	ISO 179/1eA
THERMAL			
HDT, 0.45 MPa, 3.2 mm, unannealed	104	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	48	°C	ASTM D648
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
PHYSICAL			
Specific Gravity	1.32	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm	1.5 – 1.8	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	1.6 – 2	%	SABIC method
Melt Flow Rate, 250°C/1.2 kgf	127	g/10 min	ASTM D1238

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Density	1.31	g/cm ³	ISO 1183
Water Absorption, (23°C/saturated)	0.08	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.07	%	ISO 62
Melt Volume Rate, MVR at 250°C/ 1.2 kg	127	cm ³ /10 min	ISO 1133
Melt Volume Rate, MVR at 250°C/2.16 kg	231	cm ³ /10 min	ISO 1133
COMPOUNDING EXTRUSION			
Drying Temperature	110 – 120	°C	
Drying Time	4 – 6	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.02	%	
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	