

# VALOX™ RESIN HX215HP

REGION AMERICAS

## DESCRIPTION

Unreinforced PBT with mold release. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO 10993 OR USP Class VI), US FDA food contact compliant, gamma, e-beam, EtO sterilizable. Available in limited colors.

## TYPICAL PROPERTY VALUES

Revision 20180906

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 50 mm/min	60	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	26	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	3.7	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	10	%	ASTM D 638
Tensile Modulus, 5 mm/min	2700	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	89	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2500	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	50	MPa	ISO 527
Tensile Stress, break, 50 mm/min	49	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	3.2	%	ISO 527
Tensile Strain, break, 50 mm/min	10	%	ISO 527
Tensile Modulus, 1 mm/min	2600	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	80	MPa	ISO 178
Flexural Modulus, 2 mm/min	2260	MPa	ISO 178
<b>IMPACT</b>			
Izod Impact, notched, 23°C	30	J/m	ASTM D 256
Izod Impact, notched, -30°C	30	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	20	J	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	2	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	2	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	6	kJ/m <sup>2</sup>	ISO 179/1eA
<b>THERMAL</b>			
Vicat Softening Temp, Rate B/50	180	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	150	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	54	°C	ASTM D 648
CTE, -40°C to 40°C, flow	7.6E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.8E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	7.6E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.8E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	183	°C	ISO 306
Vicat Softening Temp, Rate B/120	180	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	49	°C	ISO 75/Af
<b>PHYSICAL</b>			
Specific Gravity	1.31	-	ASTM D 792

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Mold Shrinkage, flow, 3.2 mm	1.5 – 2	%	SABIC method
Melt Flow Rate, 250°C/2.16 kgf	80	g/10 min	ASTM D 1238
Density	1.31	g/cm <sup>3</sup>	ISO 1183
Water Absorption, (23°C/sat)	0.34	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.08	%	ISO 62
Melt Volume Rate, MVR at 250°C/2.16 kg	70	cm <sup>3</sup> /10 min	ISO 1133
<b>INJECTION MOLDING</b>			
Drying Temperature	120	°C	
Drying Time	3 – 4	hrs	
Drying Time (Cumulative)	12	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	245 – 260	°C	
Nozzle Temperature	240 – 255	°C	
Front - Zone 3 Temperature	245 – 260	°C	
Middle - Zone 2 Temperature	240 – 255	°C	
Rear - Zone 1 Temperature	230 – 250	°C	
Mold Temperature	50 – 75	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	50 – 100	rpm	
Shot to Cylinder Size	40 – 80	%	
Vent Depth	0.013 – 0.025	mm	
<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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