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VALOX™ FR RESINS V4860HR

REGION AMERICAS

DESCRIPTION

VALOX V4860HR is a 30% glass filled, impact modified, hydrolytically stable flame retardant Polybutylene Terephthalate (PBT) injection moldable grade. It has excellent chemical resistance and a UL94V0@0.80 flame rating. This is a good candidate for a variety of applications needing a hydrostable FR PBT solution.

TYPICAL PROPERTY VALUES

Revision 20260509

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	116	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	114	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	2.2	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	2.3	%	ASTM D638
Tensile Modulus, 5 mm/min	9750	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	174	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	6740	MPa	ASTM D790
Tensile Stress, yield, 5 mm/min	111	MPa	ISO 527
Tensile Stress, break, 5 mm/min	110	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	2.1	%	ISO 527
Tensile Strain, break, 5 mm/min	2.1	%	ISO 527
Tensile Modulus, 1 mm/min	9440	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	183	MPa	ISO 178
Flexural Stress, break, 2 mm/min	182	MPa	ISO 178
Flexural Strain, break, 2 mm/min	2.9	%	ISO 178
Flexural Modulus, 2 mm/min	7870	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	90	J/m	ASTM D256
Izod Impact, notched, -30°C	74	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	13	J	ASTM D3763
Izod Impact, notched 80*10*4 +23°C	10	kJ/m²	ISO 180/1A
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	10	kJ/m²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	176	°C	ASTM D1525
HDT, 1.82 MPa, 3.2mm, unannealed	197	°C	ASTM D648
HDT, 0.45 MPa, 6.4 mm, unannealed	221	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	205	°C	ASTM D648
CTE, -40°C to 95°C, flow	2.35E-05	1/°C	ASTM E831
CTE, -40°C to 95°C, xflow	1.14E-04	1/°C	ASTM E831
CTE, 23°C to 80°C, flow	2.28E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	1.19E-04	1/°C	ISO 11359-2
Ball Pressure Test, approximate maximum	125	°C	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	176	°C	ISO 306

CHEMISTRY THAT MATTERS™

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Vicat Softening Temp, Rate B/120	175	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	188	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.64	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm	0.18 – 0.21	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	0.75 – 0.94	%	SABIC method
Melt Flow Rate, 250°C/5.0 kgf	17.8	g/10 min	ASTM D1238
Density	1.64	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	0.19	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.06	%	ISO 62
Melt Volume Rate, MVR at 250°C/5.0 kg	12	cm³/10 min	ISO 1133
FLAME CHARACTERISTICS			
UL Compliant, 94V-0 Flame Class Rating	0.8	mm	UL 94 by SABIC-IP
INJECTION MOLDING			
Drying Temperature	120	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	12	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	230 – 260	°C	
Nozzle Temperature	240 – 260	°C	
Front - Zone 3 Temperature	240 – 260	°C	
Middle - Zone 2 Temperature	230 – 250	°C	
Rear - Zone 1 Temperature	220 – 240	°C	
Mold Temperature	60 – 120	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	20 – 100	rpm	
Shot to Cylinder Size	30 – 70	%	
Vent Depth	0.025 – 0.038	mm	