VALOX™ FR RESIN ENH3500

REGION ASIA

DESCRIPTION

VALOX ENH3500 is an unreinforced, non-chlorinated/brominated flame retardant Polybutylene Terephthalate (PBT) injection moldable grade with excellent chemical resistance. It has a UL94V0@0.80mm flame rating. This is a good candidate for a variety of applications needing a sustainable FR PBT solution.

TYPICAL PROPERTY VALUES

Revision 20181019

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	44	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	42	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	3	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	10	%	ASTM D 638
Tensile Modulus, 5 mm/min	3150	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	77	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2750	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	39	MPa	ISO 527
Tensile Stress, break, 50 mm/min	38	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	3	%	ISO 527
Tensile Strain, break, 50 mm/min	8	%	ISO 527
Tensile Modulus, 1 mm/min	3200	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	70	MPa	ISO 178
Flexural Modulus, 2 mm/min	2700	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	40	J/m	ASTM D 256
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D 4812
Izod Impact, notched 80*10*4 +23°C	5	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	5	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	NB	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	6	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m²	ISO 179/1eU
THERMAL			
HDT, 1.82 MPa, 3.2mm, unannealed	60	°C	ASTM D 648
HDT, 0.45 MPa, 3.2 mm, unannealed	160	°C	ASTM D 648
Vicat Softening Temp, Rate B/50	170	°C	ASTM D 1525
CTE, -40°C to 95°C, flow	8.00E-05	1/°C	ASTM E 831
CTE, -40°C to 95°C, xflow	8.00E-05	1/°C	ASTM E 831
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	60	°C	ISO 75/Af
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	160	°C	ISO 75/Bf
Vicat Softening Temp, Rate B/50	170	°C	ISO 306
Vicat Softening Temp, Rate B/120	170	°C	ISO 306

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
PHYSICAL			
Specific Gravity	1.31	-	ASTM D 792
Moisture Absorption, 50% RH, 24 hrs	0.08	%	ASTM D 570
Water Absorption, 24 hours	0.35	%	ASTM D 570
Mold Shrinkage on Tensile Bar, flow	1.8 – 2.8	%	SABIC method
Density	1.31	g/cm³	ISO 1183
Melt Volume Rate, MVR at 250°C/2.16 kg	20	cm³/10 min	ISO 1133
Moisture Absorption (23°C / 50% RH)	0.08	%	ISO 62
Water Absorption, (23°C/sat)	0.35	%	ISO 62
ELECTRICAL			
Comparative Tracking Index (UL) {PLC}	0	PLC Code	UL 746A
Comparative Tracking Index	600	V	IEC 60112
FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating	0.8	mm	UL 94
Oxygen Index (LOI)	31	%	ASTM D 2863
Oxygen Index (LOI)	31	%	ISO 4589
INJECTION MOLDING			
Drying Temperature	110 – 120	°C	
Drying Time	2 – 4	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	245 – 260	°C	
Nozzle Temperature	230 – 255	°C	
Front - Zone 3 Temperature	240 – 260	°C	
Middle - Zone 2 Temperature	235 – 250	°C	
Rear - Zone 1 Temperature	230 – 240	°C	
Hopper Temperature	40 – 60	°C	
Mold Temperature	40 – 100	°C	

DISCLAIMER