+135-3858-6433 (GuangDong)
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VALOX™ Resin ENH4560

Asia Pacific: COMMERCIAL

VALOX ENH4560 resin is a non-brominated/non-chlorinated flame retardant product based on VALOX PBT resin.

TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	1070	kgf/cm²	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	1070	kgf/cm²	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	2	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	2	%	ASTM D 638
Tensile Modulus, 5 mm/min	112100	kgf/cm²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	1680	kgf/cm²	ASTM D 790
Flexural Stress, brk, 1.3 mm/min, 50 mm span	1680	kgf/cm²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	97800	kgf/cm²	ASTM D 790
Tensile Stress, yield, 5 mm/min	108	MPa	ISO 527
Tensile Stress, break, 5 mm/min	108	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	2	%	ISO 527
Tensile Strain, break, 5 mm/min	2	%	ISO 527
Tensile Modulus, 1 mm/min	11000	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	175	MPa	ISO 178
Flexural Stress, break, 2 mm/min	175	MPa	ISO 178
Flexural Modulus, 2 mm/min	10000	MPa	ISO 178
IMPACT			
Izod Impact, unnotched, 23°C	58	cm-kgf/cm	ASTM D 4812
Izod Impact, notched, 23°C	7	cm-kgf/cm	ASTM D 256
Izod Impact, notched, -30°C	5	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	66	cm-kgf	ASTM D 3763
Izod Impact, unnotched 80*10*4 +23°C	37	kJ/m²	ISO 180/1U

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TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
IMPACT			
Izod Impact, notched 80*10*4 +23°C	7	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	6	kJ/m²	ISO 180/1A
THERMAL			
Vicat Softening Temp, Rate B/50	195	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	200	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	210	°C	ASTM D 648
CTE, -40°C to 40°C, flow	2.4E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	8.E-05	1/°C	ASTM E 831
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	195	°C	ISO 306
Vicat Softening Temp, Rate B/120	205	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	205	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.56	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.28	%	SABIC Method
Mold Shrinkage, xflow, 3.2 mm (5)	0.57	%	SABIC Method
Density	1.56	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.23	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.09	%	ISO 62
Melt Volume Rate, MVR at 250°C/5.0 kg	16	cm³/10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	1.5E+01	Ohm-cm	ASTM D 257
Hot Wire Ignition {PLC}	0	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	0	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	0	PLC Code	UL 746A
Comparative Tracking Index	600	V	IEC 60112

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FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating (3)	0.8	mm	UL 94
UL Recognized, 94-5VB Rating (3)	3	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	1	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 3.0 mm	800	°C	IEC 60695-2-13

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
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