VALOX™ FR Resin ENH4550 - Asia

PBT-GF25 — Saudi Basic Industries Corporation (SABIC)

Product Texts

VALOX ENH4550 is a 25% glass reinforced, non-chlorinated/brominated flame retardant Polybutylene Terephthalate (PBT) injection moldable grade with excellent chemical resistance. It has a UL94V0@0.30mm and 5VA@2.0mm flame rating. This is a good candidate for a variety of applications needing a sustainable FR PBT solution.

UL Yellow Card Link E207780-101458997

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	**18**	cm³/10min	ISO 1133
Temperature	**265**	°C	-
Load	**5**	kg	-
Density of melt	**1330**	kg/m³	-
Thermal conductivity of melt	**0.26**	W/(m K)	-
Spec. heat capacity of melt	**1700**	J/(kg K)	-
Ejection temperature	**170**	°C	-
ASTM Data			
Melt Flow Index, MFI	**27**	g/10min	ASTM D 1238
Temperature	**265**	°C	-
Load	**5**	kg	-

Mechanical properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	**10400**	MPa	ISO 527
Yield stress	**112**	MPa	ISO 527
Yield strain	**2**	%	ISO 527
Stress at break	**112**	MPa	ISO 527
Strain at break	**2**	%	ISO 527
Flexural modulus	**9200**	MPa	ISO 178
Charpy notched impact strength, +23°C	**5**	kJ/m²	ISO 179/1eA
Izod impact strength, +23°C, 4mm	**40**	kJ/m²	ISO 180/1U
Izod impact strength, -30°C, 4mm	**35**	kJ/m²	ISO 180/1U
Izod notched impact strength, +23°C, 4mm	**8**	kJ/m²	ISO 180/1A
Izod notched impact strength, -30°C, 4mm	**8**	kJ/m²	ISO 180/1A
Rockwell hardness	**R 124**	-	ISO 2039-2
Ball indentation hardness	**174**	MPa	ISO 2039-1
ASTM Data			
Tensile Modulus	**10300**	MPa	ASTM D 638
Tensile Strength at Yield	**115**	MPa	ASTM D 638
Tensile Strength at Break	**115**	MPa	ASTM D 638
Elongation at Yield	**2**	%	ASTM D 638
Elongation at Break	**2**	%	ASTM D 638
Flexural Modulus	**8800**	MPa	ASTM D 790
Izod Impact notched, 1/8 in	**70**	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	**65**	J/m	ASTM D 256
Temperature	**-30**	°C	-
Izod Impact unnotched, 1/8 in	**550**	J/m	ASTM D 256

Thermal properties	Value	Unit	Test Standard
ISO Data			
Temp. of deflection under load, 1.80 MPa	**207**	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	**220**	°C	ISO 75-1/-2
Vicat softening temperature, A	**220**	°C	ISO 306
Vicat softening temperature, B	**207**	°C	ISO 306
Vicat softening temperature, 120°C/h 50N	**208**	°C	ISO 306
Coeff. of linear therm. expansion, parallel	**27.5**	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	**154**	E-6/K	ISO 11359-1/-2
Burning behav. at thickness h	**V-0**	class	IEC 60695-11-10
Thickness tested	**0.3**	mm	-
Burning behav. 5V at thickness h	**5VA**	class	IEC 60695-11-20

Thickness tested	**2.0**	mm	-
Glow Wire Flammability Index (GWFI)	**960**	°C	IEC 60695-2-12
Glow Wire Flammability Index (GWFI)	**960**	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (GWIT)	**775**	°C	IEC 60695-2-13
GWIT - thickness tested (1)	**1**	mm	-
Glow Wire Ignition Temperature (GWIT)	**775**	°C	IEC 60695-2-13
GWIT - thickness tested (3)	**3**	mm	-
ASTM Data			
DTUL @ 66 psi	**220**	°C	ASTM D 648
DTUL @ 264 psi	**205**	°C	ASTM D 648
Vicat Temperature	**205**	°C	ASTM D 1525

Electrical properties	**Value**	**Unit**	**Test Standard**
ISO Data			
Relative permittivity, 1MHz	**3.4**	-	IEC 62631-2-1
Dissipation factor, 1MHz	**1200**	E-4	IEC 62631-2-1
Volume resistivity	**1E13**	Ohm*m	IEC 62631-3-1
Surface resistivity	**>1E15**	Ohm	IEC 62631-3-2
Electric strength	**30**	kV/mm	IEC 60243-1
Comparative tracking index	**300**	-	IEC 60112
ASTM Data			
Dielectric Strength, Short Time	**20**	kV/mm	ASTM D 149
Dissipation Factor, 1 MHz	**0.12**	-	ASTM D 150
Dielectric Constant, 1 MHz	**3.4**	-	ASTM D 150
Volume Resistivity	**1E15**	Ohm*cm	ASTM D 257

Other properties	**Value**	**Unit**	**Test Standard**
Water absorption	**0.23**	%	Sim. to ISO 62
Humidity absorption	**0.06**	%	Sim. to ISO 62
Density	**1520**	kg/m³	ISO 1183
Density	**1520**	kg/m³	ASTM D 792

Processing Recommendation Injection Molding	**Value**	**Unit**	**Test Standard**
Pre-drying - Temperature	**110 - 120**	°C	-
Pre-drying - Time	**2 - 4**	h	-
Processing humidity	**≤0.02**	%	-
Melt temperature	**245 - 260**	°C	-
Mold temperature	**40 - 100**	°C	-
Feed temperature	**40 - 60**	°C	-
Zone 1	**230 - 240**	°C	-
Zone 2	**235 - 250**	°C	-
Zone 3	**240 - 260**	°C	-

Characteristics

Processing
Injection Molding

Additives
Flame retarding agent

Special Characteristics
Flame retardant

Chemical Resistance
General Chemical Resistance

Regional Availability
Asia Pacific