

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 [F45329-101458636](https://www.ul.com/yellow-card/F45329-101458636)

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	18	cm ³ /10min	ISO 1133
Temperature	265	°C	-
Load	5	kg	-
Density of melt	1330	kg/m ³	-
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/m ²	ISO 179/1eA
Izod impact strength, +23°C, 4mm	40	kJ/m ²	ISO 180/1U
Izod impact strength, -30°C, 4mm	35	kJ/m ²	ISO 180/1U
Izod notched impact strength, +23°C, 4mm	8	kJ/m ²	ISO 180/1A
Izod notched impact strength, -30°C, 4mm	8	kJ/m ²	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

VALOX™ FR Resin ENH4550 - Europe

PBT-GF25

Saudi Basic Industries Corporation (SABIC)

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/m ³	ISO 1183
Density	1520	kg/m ³	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

Europe