

VALOX* IQNH4550 Resin

General Information

Product Description

Valox* iQNH4550 resin is a non-brominated/non-chlorinated flame retardant product based on an environmentally sustainable Valox iQ* PBT resin. Post-consumer recycle (PCR) usage is 31% based on EPEAT (Electronic Product Environmental Assessment Tool) method.

General

Recycled Content	• Yes, 31%		
Features	• Bromine Free	• Chlorine Free	• Flame Retardant
Processing Method	• Injection Molding		

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.53	g/cm³	ASTM D792
Density	1.52	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR) (250°C/5.0 kg)	20	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (250°C/5.0 kg)	15.0	cm³/10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.40 to 0.90	%	Internal Method
Molding Shrinkage - Across Flow (3.20 mm)	0.80 to 1.3	%	Internal Method
Water Absorption (Saturation, 23°C)	0.25	%	ISO 62
Water Absorption (Equilibrium, 23°C, 50% RH)	0.070	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus ²	11000	MPa	ASTM D638
Tensile Modulus	10400	MPa	ISO 527-2/1
Tensile Strength ³ (Yield)	104	MPa	ASTM D638
Tensile Stress (Yield)	105	MPa	ISO 527-2/5
Tensile Strength ³ (Break)	104	MPa	ASTM D638
Tensile Stress (Break)	105	MPa	ISO 527-2/5
Tensile Elongation ³ (Yield)	2.0	%	ASTM D638
Tensile Strain (Yield)	2.0	%	ISO 527-2/5
Tensile Elongation ³ (Break)	2.0	%	ASTM D638
Tensile Strain (Break)	2.0	%	ISO 527-2/5
Flexural Modulus ⁴ (50.0 mm Span)	9370	MPa	ASTM D790
Flexural Modulus ⁵	9350	MPa	ISO 178
Flexural Strength ^{5, 6}	159	MPa	ISO 178
Flexural Strength ⁴ (Yield, 50.0 mm Span)	157	MPa	ASTM D790

VALOX* IQNH4550 Resin

SABIC Innovative Plastics - Polybutylene Terephthalate

Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁷ (23°C)	5.0	kJ/m ²	ISO 179/1eA
Notched Izod Impact			ASTM D256
-30°C	46	J/m	
23°C	49	J/m	
Notched Izod Impact Strength ⁸			ISO 180/1A
-30°C	5.0	kJ/m ²	
23°C	6.0	kJ/m ²	
Unnotched Izod Impact Strength			ISO 180/1U
-30°C ⁸	32	kJ/m ²	
23°C ⁹	35	kJ/m ²	
Instrumented Dart Impact (23°C, Total Energy)	6.50	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Unannealed, 3.20 mm	190	°C	
Heat Deflection Temperature ¹⁰			ISO 75-2/Af
1.8 MPa, Unannealed, 64.0 mm Span	190	°C	
Vicat Softening Temperature	200	°C	ASTM D1525 ¹¹
Vicat Softening Temperature			
--	200	°C	ISO 306/B50
--	200	°C	ISO 306/B120
CLTE - Flow (-40 to 150°C)	0.000023	cm/cm/°C	ASTM E831
CLTE - Flow (-30 to 80°C)	0.000028	cm/cm/°C	ISO 11359-2
CLTE - Transverse (-40 to 150°C)	0.000078	cm/cm/°C	ASTM E831
CLTE - Transverse (-30 to 80°C)	0.00011	cm/cm/°C	ISO 11359-2
Electrical	Nominal Value	Unit	Test Method
Comparative Tracking Index	275	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating - UL			UL 94
0.800 mm	V-0		
3.00 mm	5VA		
Glow Wire Flammability Index (0.800 mm)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (3.00 mm)	800	°C	IEC 60695-2-13
UL	Nominal Value	Unit	Test Method
Comparative Tracking Index (CTI) (PLC)	PLC 2		UL 746
Hot-wire Ignition (HWI) (PLC)	PLC 0		UL 746
High Amp Arc Ignition (HAI) (PLC)	PLC 0		UL 746

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	110 to 120	°C
Drying Time	2.0 to 4.0	hr
Suggested Max Moisture	0.020	%

VALOX* IQNH4550 Resin

SABIC Innovative Plastics - Polybutylene Terephthalate

Injection	Nominal Value	Unit
Hopper Temperature	40.0 to 60.0	°C
Rear Temperature	230 to 240	°C
Middle Temperature	235 to 250	°C
Front Temperature	240 to 260	°C
Nozzle Temperature	230 to 255	°C
Processing (Melt) Temp	245 to 260	°C
Mold Temperature	40.0 to 100	°C