SABIC Innovative Plastics™

Valox* Resin IQNH4550

Americas: COMMERCIAL

Valox* iQNH4550 resin is a non-brominated/non-chlorinated flame retardant product based on an environmentally sustainable Valox iQ* PBT resin. Post-consumer usage - Each 1kg of VALOX iQNH4550 resin is made from approximately 0.51 kg of post-consumer content based on EPEAT (Electronic Product Environmental Assessment Tool) method.

Property

TYPICAL PROPERTIES (1)			
MECHANICAL	Value	Unit	Standard
Tensile Stress, yld, Type I, 5 mm/min	104	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	104	MPa	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	11000	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	157	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	9370	MPa	ASTM D 790
Tensile Stress, yield, 5 mm/min	105	MPa	ISO 527
Tensile Stress, break, 5 mm/min	105	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	10420	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	159	MPa	ISO 178
Flexural Modulus, 2 mm/min	9350	MPa	ISO 178
IMPACT	Value	Unit	Standard
Izod Impact, notched, 23°C	49	J/m	ASTM D 256
Izod Impact, notched, -30°C	46	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	6	J	ASTM D 3763
Izod Impact, unnotched 80*10*3 +23°C	35	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	32	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	6	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	5	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	5	kJ/m²	ISO 179/1eA
THERMAL	Value	Unit	Standard
Vicat Softening Temp, Rate B/50	200	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	190	°C	ASTM D 648
CTE, -40°C to 150°C, flow	2.3E+01	1/°C	ASTM E 831
CTE, -40°C to 150°C, xflow	7.8E+01	1/°C	ASTM E 831
CTE, -30°C to 80°C, flow	2.8E+01	1/°C	ISO 11359-2
CTE, -30°C to 80°C, xflow	1.05E+02	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	200	°C	ISO 306
Vicat Softening Temp, Rate B/120	200	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	190	°C	ISO 75/Af
PHYSICAL	Value	Unit	Standard
Specific Gravity	1.53	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.4 - 0.9	%	SABIC Method
Mold Shrinkage, xflow, 3.2 mm	0.8 - 1.3	%	SABIC Method

Melt Flow Rate, 250°C/5.0 kgf	20	g/10 min	ASTM D 1238
Density	1.52	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.25	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.07	%	ISO 62
Melt Volume Rate, MVR at 250°C/5.0 kg	15	cm³/10 min	ISO 1133
ELECTRICAL	Value	Unit	Standard
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}	2	PLC Code	UL 746A
Comparative Tracking Index	275	V	IEC 60112
FLAME CHARACTERISTICS	Value	Unit	Standard
UL Recognized, 94V-0 Flame Class Rating (3)	0.8	mm	UL 94
UL Recognized, 94-5VA Rating (3)	3	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	0.8	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 3.0 mm	800	°C	IEC 60695-2-13

Source GMD, last updated:12/01/2008

Processing

Parameter Injection Molding	Value	Unit
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

Source GMD, last updated:12/01/2008

THESE PROPERTY VALUES ARE NOT INTENDED FOR SPECIFICATION PURPOSES.

PLEASE CHECK WITH YOUR (LOCAL SALES OFFICE) FOR AVAILABILITY IN YOUR REGION

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.
(2) Only typical data for selection purposes. Not to be used for part or tool design.
(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.
(4) Internal measurements according to UL standards.

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