SABIC Innovative Plastics™

Valox* Resin IQ4860HR

Americas: COMMERCIAL

Valox iQ* Resin iQ4860HR: Environmentally responsible iQ* PBT resin with 30% Glass reinforcement + UL94 V-0. Hydrolytically stable and impact modified.

Property

TYPICAL PROPERTIES (1)			
MECHANICAL	Value	Unit	Standard
Tensile Stress, yld, Type I, 5 mm/min	108	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	108	MPa	ASTM D 638
Tensile Stress, brk, Type I, 10 mm/min	119	MPa	SABIC - Japan Method
Tensile Strain, yld, Type I, 5 mm/min	1.7	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	1.7	%	ASTM D 638
Tensile Strain, brk, Type I, 10 mm/min	8	%	SABIC - Japan Method
Tensile Modulus, 5 mm/min	11100	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	180	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	8970	MPa	ASTM D 790
Tensile Stress, yield, 5 mm/min	97	MPa	ISO 527
Tensile Stress, break, 5 mm/min	97	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	1	%	ISO 527
Tensile Strain, break, 5 mm/min	1	%	ISO 527
Tensile Modulus, 1 mm/min	10700	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	180	MPa	ISO 178
Flexural Modulus, 2 mm/min	9180	MPa	ISO 178
IMPACT	Value	Unit	Standard
Izod Impact, unnotched, 23°C	794	J/m	ASTM D 4812
Izod Impact, notched, 23°C	92	J/m	ASTM D 256
Izod Impact, notched, -30°C	75	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	10	J	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	9	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	8	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	21	kJ/m²	ISO 179/1eA
THERMAL	Value	Unit	Standard
Vicat Softening Temp, Rate B/50	157	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	192	°C	ASTM D 648
CTE, -40°C to 40°C, flow	2.03E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	1.02E-04	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	2.03E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	1.02E-04	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	157	°C	ISO 306
Vicat Softening Temp, Rate B/120	157	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	209	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	187	°C	ISO 75/Af
PHYSICAL	Value	Unit	Standard
Specific Gravity	1.65	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.4 - 0.6	%	SABIC Method

Mold Shrinkage, xflow, 3.2 mm	0.4 - 0.8	%	SABIC Method
Melt Flow Rate, 250°C/5.0 kgf	40	g/10 min	ASTM D 1238
Density	1.65	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.19	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.06	%	ISO 62
Melt Volume Rate, MVR at 220°C/5.0 kg	27	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 250°C/5.0 kg	27	cm³/10 min	ISO 1133
ELECTRICAL	Value	Unit	Standard
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	0	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
Dielectric Strength, in oil, 3.2 mm	20	kV/mm	IEC 60243-1
FLAME CHARACTERISTICS	Value	Unit	Standard
UL Compliant, 94V-0 Flame Class Rating (3)(4)	0.8	mm	UL 94 by GE
UL Compliant, 94-5VA Rating (3)(4)	2	mm	UL 94 by GE

Source GMD, last updated:11/01/2007

Processing

Parameter Injection Molding	Value	Unit
Drying Temperature	120	°C
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	12	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	230 - 260	°C
Nozzle Temperature	240 - 260	°C
Front - Zone 3 Temperature	240 - 260	°C
Middle - Zone 2 Temperature	230 - 250	°C
Rear - Zone 1 Temperature	220 - 240	°C
Mold Temperature	60 - 120	°C
Back Pressure	5 - 10	MPa
Screw Speed	20 - 100	rpm
Shot to Cylinder Size	30 - 70	%
Vent Depth	0.025 - 0.038	mm

Source GMD, last updated:11/01/2007

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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