

Valox* Resin IQ420HP

Americas: COMMERCIAL

Environmentally responsible, low carbon footprint Valox iQ* resin - Valox* iQ420HP resin is made using iQ-PBT resin and 30% glass fiber reinforcement. Valox* iQ420HP may be used for the production of food contact articles intended for repeat use (and not for single use) in contact with all food types, and under all conditions of use per FDA table of food types, with the exception of irradiation and cooking/baking at temperatures above 250 degrees F. This includes microwaving within these same temperature constraints. If colorants are added to the resin, these must be evaluated separately for their appropriateness for food contact applications.

Property

TYPICAL PROPERTIES ⁽¹⁾			
MECHANICAL	Value	Unit	Standard
Tensile Stress, yld, Type I, 5 mm/min	114	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	114	MPa	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	2.2	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	2.2	%	ASTM D 638
Tensile Modulus, 5 mm/min	11800	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	210	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	9100	MPa	ASTM D 790
Tensile Stress, yield, 5 mm/min	139	MPa	ISO 527
Tensile Stress, break, 5 mm/min	139	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	1.6	%	ISO 527
Tensile Strain, break, 5 mm/min	1.6	%	ISO 527
Tensile Modulus, 1 mm/min	10700	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	210	MPa	ISO 178
Flexural Modulus, 2 mm/min	9100	MPa	ISO 178
IMPACT	Value	Unit	Standard
Izod Impact, unnotched, 23°C	770	J/m	ASTM D 4812
Izod Impact, notched, 23°C	82	J/m	ASTM D 256
Izod Impact, notched, -30°C	83	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	7	J	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	8	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	8	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	14	kJ/m ²	ISO 179/1eA
THERMAL	Value	Unit	Standard
Vicat Softening Temp, Rate B/50	206	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	203	°C	ASTM D 648
CTE, -40°C to 40°C, flow	2.5E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	8.9E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	2.5E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	8.9E-05	1/°C	ISO 11359-2
Ball Pressure Test, approximate maximum	200	°C	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	206	°C	ISO 306
Vicat Softening Temp, Rate B/120	206	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	205	°C	ISO 75/Af
PHYSICAL	Value	Unit	Standard
Specific Gravity	1.54	-	ASTM D 792

Mold Shrinkage, flow, 3.2 mm	0.5 - 0.7	%	SABIC Method
Melt Flow Rate, 250°C/5.0 kgf	52	g/10 min	ASTM D 1238
Density	1.54	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	0.09	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.1	%	ISO 62
Melt Volume Rate, MVR at 250°C/5.0 kg	38	cm ³ /10 min	ISO 1133

Source GMD, last updated:11/19/2008

Processing

Parameter	Value	Unit
Injection Molding		
Drying Temperature	120	°C
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	12	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	250 - 265	°C
Nozzle Temperature	245 - 260	°C
Front - Zone 3 Temperature	250 - 265	°C
Middle - Zone 2 Temperature	245 - 260	°C
Rear - Zone 1 Temperature	240 - 255	°C
Mold Temperature	65 - 90	°C
Back Pressure	0.3 - 0.7	MPa
Screw Speed	50 - 80	rpm
Shot to Cylinder Size	40 - 80	%
Vent Depth	0.025 - 0.038	mm

Source GMD, last updated:11/19/2008

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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