

## Valox\* Resin 451E

Americas: COMMERCIAL

20% GR. Easy flow version of VALOX 451.

### Property

TYPICAL PROPERTIES <sup>(1)</sup>			
MECHANICAL	Value	Unit	Standard
Tensile Stress, brk, Type I, 5 mm/min	96	MPa	ASTM D 638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	151	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	5510	MPa	ASTM D 790
IMPACT	Value	Unit	Standard
Izod Impact, notched, 23°C	48	J/m	ASTM D 256
THERMAL	Value	Unit	Standard
HDT, 0.45 MPa, 6.4 mm, unannealed	212	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	196	°C	ASTM D 648
Relative Temp Index, Elec	120	°C	UL 746B
Relative Temp Index, Mech w/impact	120	°C	UL 746B
Relative Temp Index, Mech w/o impact	140	°C	UL 746B
PHYSICAL	Value	Unit	Standard
Specific Gravity	1.53	-	ASTM D 792
Specific Volume	0.65	cm <sup>3</sup> /g	ASTM D 792
Mold Shrinkage, flow, 1.5-3.2 mm	0.4 - 0.6	%	SABIC Method
Mold Shrinkage, flow, 3.2-4.6 mm	0.6 - 0.9	%	SABIC Method
Mold Shrinkage, xflow, 1.5-3.2 mm	0.4 - 0.8	%	SABIC Method
Mold Shrinkage, xflow, 3.2-4.6 mm	0.8 - 1.1	%	SABIC Method
ELECTRICAL	Value	Unit	Standard
Arc Resistance, Tungsten {PLC}	7	PLC Code	ASTM D 495
Hot Wire Ignition {PLC}	3	PLC Code	UL 746A
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
FLAME CHARACTERISTICS	Value	Unit	Standard
UL Recognized, 94V-0 Flame Class Rating (3)	0.71	mm	UL 94
UL Recognized, 94-5VA Rating (3)	2.99	mm	UL 94

Source GMD, last updated:12/29/1999

### 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:12/29/1999

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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