



VALOX™ Resin 451E
Americas: COMMERCIAL

20% GR. Easy flow version of VALOX 451.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, brk, Type I, 5 mm/min	980	kgf/cm ²	ASTM D 638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	1540	kgf/cm ²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	56200	kgf/cm ²	ASTM D 790
IMPACT			
Izod Impact, notched, 23°C	4	cm-kgf/cm	ASTM D 256
THERMAL			
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			
Specific Gravity	1.53	-	ASTM D 792
Specific Volume	0.65	cm ³ /g	ASTM D 792
Mold Shrinkage, flow, 1.5-3.2 mm (5)	0.4 - 0.6	%	SABIC Method
Mold Shrinkage, flow, 3.2-4.6 mm (5)	0.6 - 0.9	%	SABIC Method
Mold Shrinkage, xflow, 1.5-3.2 mm (5)	0.4 - 0.8	%	SABIC Method
Mold Shrinkage, xflow, 3.2-4.6 mm (5)	0.8 - 1.1	%	SABIC Method
ELECTRICAL			
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			
UL Recognized, 94V-0 Flame Class Rating (3)	0.71	mm	UL 94



VALOX™ Resin 451E
Americas: COMMERCIAL

TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
FLAME CHARACTERISTICS UL Recognized, 94-5VA Rating (3)	2.99	mm	UL 94



VALOX™ Resin 451E
Americas: COMMERCIAL

PROCESSING PARAMETERS	TYPICAL 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