



VALOX® 451E

Asia Pacific: COMMERCIAL

Thermoplastic Polyester Resin

20% GR. Easy flow version of VALOX 451.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	UNIT	STANDARD
MECHANICAL			
Tensile Str, brk, Type I, 5 mm/min	97	MPa	ASTM D 638
Flex Stress, brk, 1.3 mm/min, 50 mm span	152	MPa	ASTM D 790
Flex Mod, 1.3 mm/min, 50 mm span	5520	MPa	ASTM D 790
IMPACT			
Izod Impact, notched, 23°C	48	J/m	ASTM D 256
THERMAL			
HDT, 0.45 MPa, 6.4 mm, unannealed	213	°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	0.66	cm ³ /g	ASTM D 792
Mold Shrinkage, flow, 1.5-3.2 mm	0.4 - 0.6	%	ASTM D 955
Mold Shrinkage, flow, 3.2-4.6 mm	0.6 - 0.9	%	ASTM D 955
Mold Shrinkage, xflow, 1.5-3.2 mm	0.4 - 0.8	%	ASTM D 955
Mold Shrinkage, xflow, 3.2-4.6 mm	0.8 - 1.1	%	ASTM D 955
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)	0.7	mm	UL 94
UL Recognized, 94-5VA Rating (3)	3	mm	UL 94

1) Typical values only. Variations within normal tolerances are possible for various colours. All values are measured at least after 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume rate are measured on injection moulded samples. All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose. 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) Own measurement according to UL.

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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

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