



VALOX™ Resin 457
Americas: COMMERCIAL

6.5% GR PBT, UL94 V-0/5V.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, brk, Type I, 5 mm/min	800	kgf/cm ²	ASTM D 638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	1260	kgf/cm ²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	35800	kgf/cm ²	ASTM D 790
Hardness, Rockwell R	121	-	ASTM D 785
IMPACT			
Izod Impact, unnotched, 23°C	27	cm-kgf/cm	ASTM D 4812
Izod Impact, notched, 23°C	3	cm-kgf/cm	ASTM D 256
THERMAL			
HDT, 0.45 MPa, 6.4 mm, unannealed	204	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	151	°C	ASTM D 648
CTE, -40°C to 40°C, flow	6.66E-05	1/°C	ASTM E 831
CTE, 60°C to 138°C, flow	6.66E-05	1/°C	ASTM E 831
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
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	1.44	-	ASTM D 792
Specific Volume	0.69	cm ³ /g	ASTM D 792
Water Absorption, 24 hours	0.06	%	ASTM D 570
Mold Shrinkage, flow, 1.5-3.2 mm (5)	0.6 - 0.8	%	SABIC Method
Mold Shrinkage, flow, 3.2-4.6 mm (5)	0.8 - 1	%	SABIC Method
Mold Shrinkage, xflow, 1.5-3.2 mm (5)	0.7 - 0.9	%	SABIC Method
Mold Shrinkage, xflow, 3.2-4.6 mm (5)	0.9 - 1.2	%	SABIC Method



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ELECTRICAL			
Volume Resistivity	>5.5E+16	Ohm-cm	ASTM D 257
Dielectric Strength, in air, 3.2 mm	17.7	kV/mm	ASTM D 149
Dielectric Strength, in oil, 1.6 mm	23.6	kV/mm	ASTM D 149
Relative Permittivity, 100 Hz	3.5	-	ASTM D 150
Relative Permittivity, 1 MHz	3.4	-	ASTM D 150
Dissipation Factor, 100 Hz	0.002	-	ASTM D 150
Dissipation Factor, 1 MHz	0.02	-	ASTM D 150
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}	3	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
UL Recognized, 94-5VA Rating (3)	2.99	mm	UL 94
Oxygen Index (LOI)	31.5	%	ASTM D 2863
Glow Wire Flammability Index 960°C, passes at	1	mm	IEC 60695-2-12
Glow Wire Flammability Index 960°C, passes at, by VDE	3	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.0 mm	750	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	725	°C	IEC 60695-2-13



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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