

# VALOX™ FR RESIN 553

REGION AMERICAS

## DESCRIPTION

30% GR PBT+PC, UL94 V-0. Reduced warpage characteristics. Applications; appliance handles, spotlights, electric motors, pump housings, etc.

## TYPICAL PROPERTY VALUES

Revision 20170913

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
Tensile Stress, brk, Type I, 5 mm/min	110	MPa	ASTM D 638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	179	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	9400	MPa	ASTM D 790
Hardness, Rockwell R	118	-	ASTM D 785
<b>IMPACT</b>			
Izod Impact, unnotched, 23°C	640	J/m	ASTM D 4812
Izod Impact, notched, 23°C	85	J/m	ASTM D 256
<b>THERMAL</b>			
HDT, 0.45 MPa, 6.4 mm, unannealed	204	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	160	°C	ASTM D 648
CTE, -40°C to 40°C, flow	2.16E-05	1/°C	ASTM E 831
CTE, 60°C to 138°C, flow	2.16E-05	1/°C	ASTM E 831
Relative Temp Index, Elec	125	°C	UL 746B
Relative Temp Index, Mech w/impact	110	°C	UL 746B
Relative Temp Index, Mech w/o impact	125	°C	UL 746B
<b>PHYSICAL</b>			
Specific Gravity	1.59	-	ASTM D 792
Specific Volume	0.64	cm <sup>3</sup> /g	ASTM D 792
Water Absorption, 24 hours	0.07	%	ASTM D 570
Mold Shrinkage, flow, 1.5-3.2 mm (5)	0.3 – 0.5	%	SABIC method
Mold Shrinkage, flow, 3.2-4.6 mm (5)	0.5 – 0.8	%	SABIC method
Mold Shrinkage, xflow, 1.5-3.2 mm (5)	0.4 – 0.6	%	SABIC method
Mold Shrinkage, xflow, 3.2-4.6 mm (5)	0.6 – 0.9	%	SABIC method
<b>ELECTRICAL</b>			
Volume Resistivity	4.3E+16	Ohm-cm	ASTM D 257
Dielectric Strength, in air, 3.2 mm	18.9	kV/mm	ASTM D 149

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Dielectric Strength, in oil, 1.6 mm	25.6	kV/mm	ASTM D 149
Relative Permittivity, 100 Hz	3.8	-	ASTM D 150
Relative Permittivity, 1 MHz	3.7	-	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}	6	PLC Code	ASTM D 495
Hot Wire Ignition {PLC}	1	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	3	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
<b>FLAME CHARACTERISTICS</b>			
UL Recognized, 94V-0 Flame Class Rating (3)	0.86	mm	UL 94
UL Recognized, 94-5VA Rating (3)	2.31	mm	UL 94
Oxygen Index (LOI)	37.1	%	ASTM D 2863
UV-light, water exposure/immersion	F1	-	UL 746C
<b>INJECTION MOLDING</b>			
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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