



**VALOX™ Resin DR48**  
**Asia Pacific: COMMERCIAL**

17% glass reinforced, flame retardant grade UL-94 rated V-0/5VA.

TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>MECHANICAL</b>			
Tensile Stress, brk, Type I, 5 mm/min	940	kgf/cm <sup>2</sup>	ASTM D 638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	1470	kgf/cm <sup>2</sup>	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	51300	kgf/cm <sup>2</sup>	ASTM D 790
Hardness, Rockwell R	118	-	ASTM D 785
<b>IMPACT</b>			
Izod Impact, unnotched, 23°C	54	cm-kgf/cm	ASTM D 4812
Izod Impact, notched, 23°C	5	cm-kgf/cm	ASTM D 256
<b>THERMAL</b>			
HDT, 0.45 MPa, 6.4 mm, unannealed	210	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	182	°C	ASTM D 648
CTE, -40°C to 40°C, flow	1.98E-05	1/°C	ASTM E 831
CTE, 60°C to 138°C, flow	1.98E-05	1/°C	ASTM E 831
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
<b>PHYSICAL</b>			
Specific Gravity	1.53	-	ASTM D 792
Specific Volume	0.65	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)	0.4 - 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)	0.5 - 0.8	%	SABIC Method
Mold Shrinkage, xflow, 3.2-4.6 mm (5)	0.8 - 1.1	%	SABIC Method
<b>ELECTRICAL</b>			
Volume Resistivity	3.6E+16	Ohm-cm	ASTM D 257

(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.

(5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(6) Needs hard coat to consistently pass 60 sec Vertical Burn.

Source GMD, last updated:

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TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>ELECTRICAL</b>			
Dielectric Strength, in air, 3.2 mm	18.8	kV/mm	ASTM D 149
Dielectric Strength, in oil, 1.6 mm	25.5	kV/mm	ASTM D 149
Relative Permittivity, 100 Hz	3.6	-	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}	6	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
<b>FLAME CHARACTERISTICS</b>			
UL Recognized, 94V-0 Flame Class Rating (3)	0.88	mm	UL 94
UL Recognized, 94-5VA Rating (3)	2.99	mm	UL 94
Oxygen Index (LOI)	29	%	ASTM D 2863

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
<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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