VALOX® *310*

Asia Pacific: COMMERCIAL — *Thermoplastic Polyester Resin*

Unreinforced, general purpose. Typical viscosity 5000-7000.

TYPICAL PROPERTIES [1]	TYPICAL VALUE	UNIT	STANDARD
MECHANICAL			
Tensile Str, yld, Type I, 50 mm/min	52	MPa	ASTM D 638
Tensile Str, brk, Type I, 50 mm/min	52	MPa	ASTM D 638
Tensile Elong, brk, Type I, 50 mm/min	300	%	ASTM D 638
Flex Stress, yld, 1.3 mm/min, 50 mm span	83	MPa	ASTM D 790
Flex Stress, brk, 1.3 mm/min, 50 mm span	83	MPa	ASTM D 790
Flex Mod, 1.3 mm/min, 50 mm span	2340	MPa	ASTM D 790
Hardness, Rockwell R	117	-	ASTM D 785
IMPACT			
Izod Impact, unnotched, 23°C	1602	J/m	ASTM D 4812
Izod Impact, notched, 23°C	53	J/m	ASTM D 256
Gardner, 23°C	41	J	ASTM D 3029
Modified Gardner, 23°C	41	J	ASTM D 3029
THERMAL			
HDT, 0.45 MPa, 6.4 mm, unannealed	154	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	54	°C	ASTM D 648
CTE, -40°C to 40°C, flow	8.1E-05	1/°C	ASTM E 831
CTE, 60°C to 138°C, flow	1.39E-04	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
PHYSICAL			
Specific Gravity	1.31	-	ASTM D 792
Specific Volume	0.77	cm^3/g	ASTM D 792
Water Absorption, 24 hours	0.08	%	ASTM D 570
Mold Shrinkage, flow, 0.75-2.3 mm	0.9 - 1.6	%	ASTM D 955
Mold Shrinkage, flow, 2.3-4.6 mm	1.5 - 2.3	%	ASTM D 955
Mold Shrinkage, xflow, 0.75-2.3 mm	1 - 1.7	%	ASTM D 955
Mold Shrinkage, xflow, 2.3-4.6 mm	1.6 - 2.4	%	ASTM D 955
Melt Viscosity	600	Pa-s	GE Method
ELECTRICAL			
Volume Resistivity	>4.E+16	Ohm-cm	ASTM D 257

1) Typical values only. Variations within normal tolerances are possible for variose colours.All values are measured at least after 48 hours storage at 23°C/50% relative humidity.
All properties, expect 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.

VALOX® 310

Asia Pacific: COMMERCIAL *Thermoplastic Polyester Resin*

TYPICAL PROPERTIES [1]	TYPICAL VALUE	UNIT	STANDARD
Dielectric Strength, in air, 1.6 mm	23.2	kV/mm	ASTM D 149
Dielectric Strength, in air, 3.2 mm	15.7	kV/mm	ASTM D 149
Dielectric Strength, in oil, 1.6 mm	23.2	kV/mm	ASTM D 149
Dielectric Strength, in oil, 3.2 mm	15.7	kV/mm	ASTM D 149
Relative Permittivity, 100 Hz	3.3	-	ASTM D 150
Relative Permittivity, 1 MHz	3.1	-	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}	5	PLC Code	ASTM D 495
High Voltage Arc Track Rate {PLC}	1	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	0	PLC Code	UL 746A
FLAME CHARACTERISTICS			
UL Recognized, 94HB Flame Class Rating (3)	1.5	mm	UL 94

1) Typical values only. Variations within normal tolerances are possible for variose colours.All values are measured at least after 48 hours storage at 23°C/50% relative humidity.
All properties, expect 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.

VALOX*® *310

Asia Pacific: COMMERCIAL *Thermoplastic Polyester Resin*

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	245 - 260	°C
Nozzle Temperature	240 - 255	°C
Front - Zone 3 Temperature	245 - 260	°C
Middle - Zone 2 Temperature	240 - 255	°C
Rear - Zone 1 Temperature	230 - 250	°C
Mold Temperature	50 - 75	°C
Back Pressure	0.3 - 0.7	MPa
Screw Speed	50 - 100	rpm
Shot to Cylinder Size	40 - 80	%
Vent Depth	0.013 - 0.025	mm

1) Typical values only. Variations within normal tolerances are possible for variose colours.All values are measured at least after 48 hours storage at 23°C/50% relative humidity.
All properties, expect 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.