



Valox* Resin 4512

Europe-Africa-Middle East: COMMERCIAL

VALOX 4512 is a 10% glass reinforced PBT, flame retarded, impact modified PBT injection moulding resin. Applications: electrical/lighting applications.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	UNIT	STANDARD
MECHANICAL			
Tensile Stress, break, 5 mm/min	80	MPa	ISO 527
Tensile Strain, break, 5 mm/min	3	%	ISO 527
Tensile Modulus, 1 mm/min	4000	MPa	ISO 527
Flexural Stress, break, 2 mm/min	115	MPa	ISO 178
Flexural Modulus, 2 mm/min	3800	MPa	ISO 178
IMPACT			
Izod Impact, unnotched 80*10*4 +23°C	38	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	25	kJ/m ²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	6	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	4	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	7	kJ/m ²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	5	kJ/m ²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	40	kJ/m ²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	35	kJ/m ²	ISO 179/1eU
THERMAL			
CTE, 23°C to 80°C, flow	6.E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	8.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate A/50	210	°C	ISO 306
Vicat Softening Temp, Rate B/50	159	°C	ISO 306
Vicat Softening Temp, Rate B/120	157	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	200	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	125	°C	ISO 75/Ae



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THERMAL			
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			
Mold Shrinkage on Tensile Bar, flow (2)	0.6 - 0.9	%	SABIC Method
Mold Shrinkage on Tensile Bar, xflow (2)	0.7 - 1	%	SABIC Method
Density	1.42	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	0.2	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.07	%	ISO 62
Melt Volume Rate, MVR at 250°C/2.16 kg	8	cm ³ /10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	>1.E+15	Ohm-cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ohm	IEC 60093
Dielectric Strength, in oil, 1.6 mm	20	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 3.2 mm	15	kV/mm	IEC 60243-1
Relative Permittivity, 50/60 Hz	3.3	-	IEC 60250
Relative Permittivity, 1 MHz	3.3	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.001	-	IEC 60250
Dissipation Factor, 1 MHz	0.01	-	IEC 60250
Comparative Tracking Index	175	V	IEC 60112
FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating (3)	0.75	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	1.6	mm	IEC 60695-2-12



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PROCESSING PARAMETERS	TYPICAL VALUE	UNIT
Injection Molding		
Drying Temperature	110 - 120	°C
Drying Time	2 - 4	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	250 - 270	°C
Nozzle Temperature	240 - 260	°C
Front - Zone 3 Temperature	245 - 265	°C
Middle - Zone 2 Temperature	240 - 255	°C
Rear - Zone 1 Temperature	230 - 245	°C
Hopper Temperature	40 - 60	°C
Mold Temperature	40 - 100	°C



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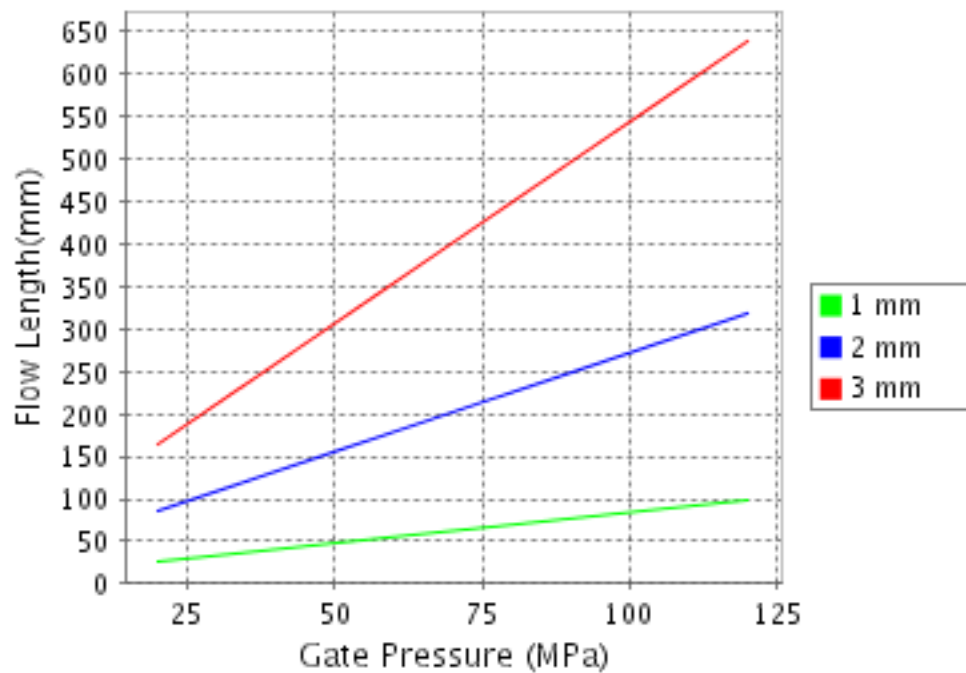
CALCULATED FLOW LENGTH INDICATION

Moldflow® Radial Flow Analysis

Valox* 4512

Melt Temperature : 260°C

Mold Temperature : 70°C



Note: Technical support is recommended if Gate Pressure is greater than 80 MPa. Contact your local representative.

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