VALOX™ RESIN 815

REGION EUROPE

DESCRIPTION

15% GR PBT+ PET, excellent surface finish. Typical applications are hot air gun housing assemblies, industrial glue guns, appliance housings and handles.

TYPICAL PROPERTY VALUES

Revision 20190814

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	100	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	100	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	3	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	3	%	ASTM D638
Tensile Modulus, 5 mm/min	6200	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	155	MPa	ASTM D790
Flexural Stress, brk, 1.3 mm/min, 50 mm span	155	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	5000	MPa	ASTM D790
Hardness, Rockwell R	120	-	ASTM D785
Taber Abrasion, CS-17, 1 kg	17	mg/1000cy	SABIC method
Tensile Stress, yield, 5 mm/min	100	MPa	ISO 527
Tensile Stress, break, 5 mm/min	100	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	3	%	ISO 527
Tensile Strain, break, 5 mm/min	3	%	ISO 527
Tensile Modulus, 1 mm/min	6200	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	150	MPa	ISO 178
Flexural Stress, break, 2 mm/min	145	MPa	ISO 178
Flexural Strain, break, 2 mm/min	4	%	ISO 178
Flexural Modulus, 2 mm/min	5200	MPa	ISO 178
Ball Indentation Hardness, H358/30	102	MPa	ISO 2039-1
Hardness, Rockwell R	120	-	ISO 2039-2
IMPACT			
Charpy Impact, unnotched, 23°C	30	kJ/m²	ISO 179/2C
Charpy Impact, unnotched, -30°C	30	kJ/m²	ISO 179/2C
Izod Impact, unnotched, 23°C	390	J/m	ASTM D4812
Izod Impact, unnotched, -30°C	390	J/m	ASTM D4812
Izod Impact, notched, 23°C	60	J/m	ASTM D256
Izod Impact, notched, 0°C	60	J/m	ASTM D256
Izod Impact, notched, -30°C	60	J/m	ASTM D256
Izod Impact, unnotched 80*10*4 +23°C	30	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	25	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	6	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 0°C	6	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	6	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	5	kJ/m²	ISO 179/1eA

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Charpy Impact, notched, 23°C	7	kJ/m²	ISO 179/2C
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	4	kJ/m²	ISO 179/1eA
Charpy Impact, notched, -20°C	7	kJ/m²	ISO 179/2C
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	30	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	30	kJ/m²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate A/50	220	°C	ASTM D1525
Vicat Softening Temp, Rate B/50	204	°C	ASTM D1525
HDT, 0.45 MPa, 6.4 mm, unannealed	210	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	160	°C	ASTM D648
CTE, -40°C to 40°C, flow	4.5E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	9.32E-05	1/°C	ASTM E831
CTE, 60°C to 138°C, flow	5.4E-05	1/°C	ASTM E831
Thermal Conductivity	0.19	W/m·°C	ISO 8302
CTE, -40°C to 40°C, flow	3.23E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.2E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, flow	5.5E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	8.5E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, flow	2.41E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, xflow	1.76E-04	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate A/50	220	°C	ISO 306
Vicat Softening Temp, Rate B/50	204	°C	ISO 306
Vicat Softening Temp, Rate B/120	200	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	210	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	175	°C	ISO 75/Ae
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	210	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	167	°C	ISO 75/Af
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
PHYSICAL			
Specific Gravity	1.43	-	ASTM D792
Specific Volume	0.7	cm³/g	ASTM D792
Water Absorption, (23°C/24hrs)	0.06	%	ASTM D570
Mold Shrinkage on Tensile Bar, flow	0.4 – 0.8	%	SABIC method
Mold Shrinkage, flow, 1.5-3.2 mm	0.4 – 0.6	%	SABIC method
Mold Shrinkage, flow, 3.2-4.6 mm	0.6 – 0.9	%	SABIC method
Mold Shrinkage on Tensile Bar, xflow	0.6 – 1	%	SABIC method
Mold Shrinkage, xflow, 1.5-3.2 mm	0.5 – 0.8	%	SABIC method
Mold Shrinkage, xflow, 3.2-4.6 mm	0.8 – 1.1	%	SABIC method
Melt Flow Rate, 250°C/5.0 kgf	20	g/10 min	ASTM D1238
Melt Flow Rate, 265°C/5.0 kgf	60	g/10 min	ASTM D1238
Density	1.43	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	0.26	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.06	%	ISO 62

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Melt Volume Rate, MVR at 265°C/1.2 kg	12	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 265°C/5.0 kg	50	cm³/10 min	ISO 1133
Melt Viscosity, 260°C, 1500 sec-1	155	Pa-s	ISO 11443
ELECTRICAL			
Volume Resistivity	5.6E+16	Ω.cm	ASTM D257
Dielectric Strength, in air, 3.2 mm	22	kV/mm	ASTM D149
Dielectric Strength, in oil, 1.6 mm	23.6	kV/mm	ASTM D149
Relative Permittivity, 100 Hz	3.6	-	ASTM D150
Relative Permittivity, 1 MHz	3.5	-	ASTM D150
Dissipation Factor, 100 Hz	0.002	-	ASTM D150
Arc Resistance, Tungsten {PLC}	5	PLC Code	ASTM D495
Hot Wire Ignition {PLC}	2	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	1	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	2	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	2	PLC Code	UL 746A
Volume Resistivity	>1.E+15	Ω.cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ω	IEC 60093
Dielectric Strength, shorttime, 1.0mm	18	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 0.8 mm	30	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 1.6 mm	24	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 3.2 mm	16	kV/mm	IEC 60243-1
Relative Permittivity, 100 Hz	3.6	-	IEC 60250
Relative Permittivity, 1 MHz	2.9	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.001	-	IEC 60250
Dissipation Factor, 100 Hz	0.002	-	IEC 60250
Dissipation Factor, 1 MHz	0.02	-	IEC 60250
Comparative Tracking Index	325	V	IEC 60112
Comparative Tracking Index, M	175	V	IEC 60112
Relative Permittivity, 50/60 Hz	3	-	IEC 60250
FLAME CHARACTERISTICS			
UL Yellow Card Link	E45329-236632	-	-
UL Recognized, 94HB Flame Class Rating	1.5	mm	UL 94
UL Recognized, 94HB Flame Class Rating 2nd value	3	mm	UL 94
Glow Wire Flammability Index 750°C, passes at	1	mm	IEC 60695-2-12
INJECTION MOLDING			
Drying Temperature	110 – 120	°C	
Drying Time	4 – 6	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	260 – 285	°C	
Nozzle Temperature	265 – 275	°C	
Front - Zone 3 Temperature	260 – 280	°C	
Middle - Zone 2 Temperature	255 – 280	°C	
Rear - Zone 1 Temperature	240 – 260	°C	
Hopper Temperature	40 – 60	°C	
Mold Temperature	60 – 110	°C	

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