

Valox* Resin 420SE0

Asia Pacific: COMMERCIAL

30% GR, UL94V-0/5V rated. Numerous applications; edge trimmers, food mixer motor stator and commutator, cooling fan, connectors, bobbins, switches etc

| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | UNIT | STANDARD |
|--|---------------|---------------------|--------------|
| MECHANICAL | | | |
| Tensile Stress, brk, Type I, 5 mm/min | 1190 | kgf/cm ² | ASTM D 638 |
| Flexural Stress, brk, 1.3 mm/min, 50 mm span | 1890 | kgf/cm ² | ASTM D 790 |
| Flexural Modulus, 1.3 mm/min, 50 mm span | 77300 | kgf/cm ² | ASTM D 790 |
| Hardness, Rockwell R | 119 | - | ASTM D 785 |
| IMPACT | | | |
| Izod Impact, unnotched, 23°C | 65 | cm-kgf/cm | ASTM D 4812 |
| Izod Impact, notched, 23°C | 7 | cm-kgf/cm | ASTM D 256 |
| THERMAL | | | |
| HDT, 0.45 MPa, 3.2 mm, unannealed | 212 | °C | ASTM D 648 |
| HDT, 1.82 MPa, 3.2mm, unannealed | 190 | °C | ASTM D 648 |
| HDT, 0.45 MPa, 6.4 mm, unannealed | 215 | °C | ASTM D 648 |
| HDT, 1.82 MPa, 6.4 mm, unannealed | 204 | °C | ASTM D 648 |
| CTE, -40°C to 40°C, flow | 2.52E-05 | 1/°C | ASTM E 831 |
| CTE, 60°C to 138°C, flow | 2.52E-05 | 1/°C | ASTM E 831 |
| Relative Temp Index, Elec | 130 | °C | UL 746B |
| Relative Temp Index, Mech w/impact | 130 | °C | UL 746B |
| Relative Temp Index, Mech w/o impact | 140 | °C | UL 746B |
| PHYSICAL | | | |
| Specific Gravity | 1.58 | - | ASTM D 792 |
| Specific Volume | 0.62 | cm ³ /g | ASTM D 792 |
| Water Absorption, 24 hours | 0.06 | % | ASTM D 570 |
| Mold Shrinkage, flow, 1.5-3.2 mm | 0.3 - 0.5 | % | SABIC Method |
| Mold Shrinkage, flow, 3.2-4.6 mm | 0.5 - 0.8 | % | SABIC Method |
| Mold Shrinkage, xflow, 1.5-3.2 mm | 0.4 - 0.6 | % | SABIC Method |

1) Typical values only. Variations within normal tolerances are possible for various colours. All values are measured at least after 48 hours storage at 23°C/50% relative humidity. All properties, except 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 this or any other material under actual fire conditions.

4) Own measurement according to UL.

Source, GMD, Last Update:04/14/2003

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| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | UNIT | STANDARD |
|---|---------------|----------|--------------|
| PHYSICAL | | | |
| Mold Shrinkage, xflow, 3.2-4.6 mm | 0.6 - 0.9 | % | SABIC Method |
| ELECTRICAL | | | |
| Volume Resistivity | >3.4E+16 | Ohm-cm | ASTM D 257 |
| Dielectric Strength, in air, 3.2 mm | 19.2 | kV/mm | ASTM D 149 |
| Dielectric Strength, in oil, 1.6 mm | 24 | 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} | 2 | 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 |
| FLAME CHARACTERISTICS | | | |
| UL Recognized, 94V-0 Flame Class Rating (3) | 0.73 | mm | UL 94 |
| UL Recognized, 94-5VA Rating (3) | 2 | mm | UL 94 |
| CSA (See File for complete listing) | LS88480 | File No. | CSA LISTED |
| Oxygen Index (LOI) | 32 | % | ASTM D 2863 |
| UV-light, water exposure/immersion | F2 | - | UL 746C |

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| 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 | 255 - 275 | °C |
| Nozzle Temperature | 250 - 270 | °C |
| Front - Zone 3 Temperature | 255 - 275 | °C |
| Middle - Zone 2 Temperature | 250 - 270 | °C |
| Rear - Zone 1 Temperature | 245 - 265 | °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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