



**VALOX™ Resin 325**  
**Americas: COMMERCIAL**

General purpose, unreinforced, improved processing. Applications like sprinklers and nozzles, pumps, door handle, tank covers, pens, pencils etc.

| TYPICAL PROPERTIES <sup>1</sup>              | TYPICAL VALUE | Unit                | Standard     |
|--|---------------|---------------------|--------------|
| <b>MECHANICAL</b>                            |               |                     |              |
| Tensile Stress, yld, Type I, 50 mm/min       | 520           | kgf/cm <sup>2</sup> | ASTM D 638   |
| Tensile Strain, brk, Type I, 50 mm/min       | 200           | %                   | ASTM D 638   |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 840           | kgf/cm <sup>2</sup> | ASTM D 790   |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 23900         | kgf/cm <sup>2</sup> | ASTM D 790   |
| Hardness, Rockwell R                         | 117           | -                   | ASTM D 785   |
| <b>IMPACT</b>                                |               |                     |              |
| Izod Impact, unnotched, 23°C                 | 163           | cm-kgf/cm           | ASTM D 4812  |
| Izod Impact, notched, 23°C                   | 5             | cm-kgf/cm           | ASTM D 256   |
| Modified Gardner, 23°C                       | 414           | cm-kgf              | ASTM D 3029  |
| <b>THERMAL</b>                               |               |                     |              |
| 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      |
| <b>PHYSICAL</b>                              |               |                     |              |
| Specific Gravity                             | 1.31          | -                   | ASTM D 792   |
| Specific Volume                              | 0.76          | cm <sup>3</sup> /g  | ASTM D 792   |
| Water Absorption, 24 hours                   | 0.08          | %                   | ASTM D 570   |
| Water Absorption, equilibrium, 23C           | 0.34          | %                   | ASTM D 570   |
| Mold Shrinkage, flow, 0.75-2.3 mm (5)        | 0.9 - 1.6     | %                   | SABIC Method |
| Mold Shrinkage, flow, 2.3-4.6 mm (5)         | 1.5 - 2.3     | %                   | SABIC Method |

(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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|--|---------------|----------|--------------|
| <b>PHYSICAL</b>                            |               |          |              |
| Mold Shrinkage, xflow, 0.75-2.3 mm (5)     | 1 - 1.7       | %        | SABIC Method |
| Mold Shrinkage, xflow, 2.3-4.6 mm (5)      | 1.6 - 2.4     | %        | SABIC Method |
| <b>ELECTRICAL</b>                          |               |          |              |
| Volume Resistivity                         | >4.E+16       | Ohm-cm   | ASTM D 257   |
| 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}             | 4             | PLC Code | ASTM D 495   |
| Hot Wire Ignition {PLC}                    | 3             | PLC Code | UL 746A      |
| High Voltage Arc Track Rate {PLC}          | 1             | PLC Code | UL 746A      |
| High Ampere Arc Ign, surface {PLC}         | 0             | PLC Code | UL 746A      |
| Comparative Tracking Index (UL) {PLC}      | 0             | PLC Code | UL 746A      |
| <b>FLAME CHARACTERISTICS</b>               |               |          |              |
| UL Recognized, 94HB Flame Class Rating (3) | 0.83          | mm       | UL 94        |
| UV-light, water exposure/immersion         | F1            | -        | UL 746C      |

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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            | 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   |

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