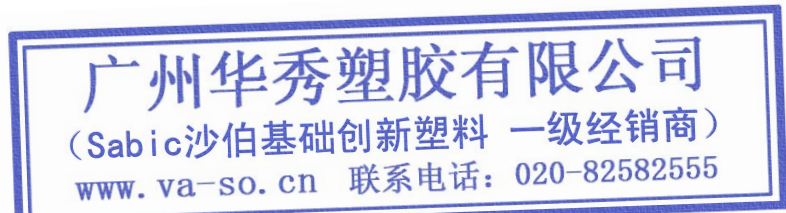




NORYL™ Resin LTA6020
Asia Pacific: COMMERCIAL

| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | Unit | Standard |
|---|---------------|---------------------|-------------|
| MECHANICAL | | | |
| Tensile Stress, yld, Type I, 50 mm/min | 730 | kgf/cm ² | ASTM D 638 |
| Tensile Strain, yld, Type I, 50 mm/min | 6 | % | ASTM D 638 |
| Flexural Stress, yld, 2.6 mm/min, 100 mm span | 1070 | kgf/cm ² | ASTM D 790 |
| Flexural Modulus, 2.6 mm/min, 100 mm span | 26300 | kgf/cm ² | ASTM D 790 |
| Tensile Stress, yield, 50 mm/min | 71 | MPa | ISO 527 |
| Tensile Stress, break, 50 mm/min | 57 | MPa | ISO 527 |
| Tensile Strain, yield, 50 mm/min | 4 | % | ISO 527 |
| Tensile Strain, break, 50 mm/min | 8 | % | ISO 527 |
| Tensile Modulus, 1 mm/min | 2680 | MPa | ISO 527 |
| Flexural Stress, yield, 2 mm/min | 105 | MPa | ISO 178 |
| Flexural Modulus, 2 mm/min | 2600 | MPa | ISO 178 |
| IMPACT | | | |
| Charpy Impact, unnotched, 23°C | 18 | kJ/m ² | ISO 179/2C |
| Izod Impact, notched, 23°C | 22 | cm-kgf/cm | ASTM D 256 |
| Izod Impact, notched 80*10*4 +23°C | 16 | kJ/m ² | ISO 180/1A |
| Izod Impact, notched 80*10*4 0°C | 12 | kJ/m ² | ISO 180/1A |
| Izod Impact, notched 80*10*4 -10°C | 11 | kJ/m ² | ISO 180/1A |
| Izod Impact, notched 80*10*4 -20°C | 10 | kJ/m ² | ISO 180/1A |
| Izod Impact, notched 80*10*4 -30°C | 8 | kJ/m ² | ISO 180/1A |
| Izod Impact, notched 80*10*4 -40°C | 8 | kJ/m ² | ISO 180/1A |
| THERMAL | | | |
| HDT, 1.82 MPa, 6.4 mm, unannealed | 126 | °C | ASTM D 648 |
| CTE, -40°C to 40°C, flow | 8.E-05 | 1/°C | ISO 11359-2 |



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(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.

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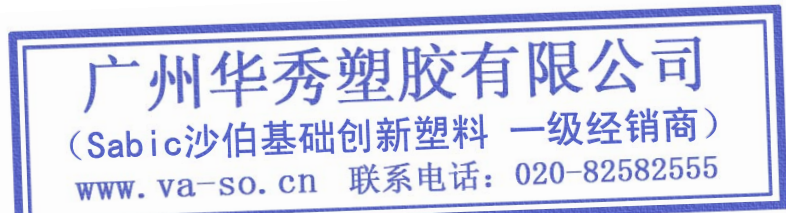
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| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | Unit | Standard |
|---|---------------|-------------------------|----------------|
| THERMAL | | | |
| CTE, -40°C to 40°C, xflow | 8.E-05 | 1/°C | ISO 11359-2 |
| Vicat Softening Temp, Rate A/120 | 155 | °C | ISO 306 |
| Vicat Softening Temp, Rate B/120 | 144 | °C | ISO 306 |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm | 136 | °C | ISO 75/Bf |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm | 123 | °C | ISO 75/Af |
| PHYSICAL | | | |
| Specific Gravity | 1.13 | - | ASTM D 792 |
| Melt Flow Rate, 250°C/10.0 kgf | 4 | g/10 min | ASTM D 1238 |
| Density | 1.13 | g/cm ³ | ISO 1183 |
| Melt Volume Rate, MVR at 280°C/5.0 kg | 8 | cm ³ /10 min | ISO 1133 |
| Melt Volume Rate, MVR at 300°C/5.0 kg | 20 | cm ³ /10 min | ISO 1133 |
| ELECTRICAL | | | |
| Comparative Tracking Index (UL) {PLC} | 2 | PLC Code | UL 746A |
| FLAME CHARACTERISTICS | | | |
| UL Recognized, 94V-1 Flame Class Rating (3) | 1 | mm | UL 94 |
| UL Recognized, 94V-0 Flame Class Rating (3) | 1.5 | mm | UL 94 |
| UL Recognized, 94-5VA Rating (3) | 2.5 | mm | UL 94 |
| Glow Wire Flammability Index 960°C, passes at | 1 | mm | IEC 60695-2-12 |
| Glow Wire Ignitability Temperature, 1.0 mm | 825 | °C | IEC 60695-2-13 |
| Glow Wire Ignitability Temperature, 1.5 mm | 825 | °C | IEC 60695-2-13 |
| Glow Wire Ignitability Temperature, 2.0 mm | 825 | °C | IEC 60695-2-13 |
| Glow Wire Ignitability Temperature, 3.0 mm | 825 | °C | IEC 60695-2-13 |



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| PROCESSING PARAMETERS | TYPICAL VALUE | Unit |
|-----------------------------|---------------|------|
| Injection Molding | | |
| Drying Temperature | 105 | °C |
| Drying Time | 3 - 4 | hrs |
| Maximum Moisture Content | 0.02 | % |
| Melt Temperature | 280 - 300 | °C |
| Front - Zone 3 Temperature | 270 - 290 | °C |
| Middle - Zone 2 Temperature | 280 - 300 | °C |
| Rear - Zone 1 Temperature | 260 - 280 | °C |
| Hopper Temperature | 60 - 80 | °C |
| Mold Temperature | 80 - 100 | °C |



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