



## Cycolac\* Resin FR30U

### Americas: COMMERCIAL

Flame retardant ABS. Good indoor UV properties. Excellent moldability with no bloom. V-1/V-0/5VB rated.

| TYPICAL PROPERTIES <sup>1</sup>              | TYPICAL VALUE | UNIT                | STANDARD    |
|----------------------------------------------|---------------|---------------------|-------------|
| <b>MECHANICAL</b>                            |               |                     |             |
| Tensile Stress, yld, Type I, 5 mm/min        | 400           | kgf/cm <sup>2</sup> | ASTM D 638  |
| Tensile Stress, brk, Type I, 5 mm/min        | 330           | kgf/cm <sup>2</sup> | ASTM D 638  |
| Tensile Strain, yld, Type I, 5 mm/min        | 2.3           | %                   | ASTM D 638  |
| Tensile Strain, brk, Type I, 5 mm/min        | 10            | %                   | ASTM D 638  |
| Tensile Modulus, 5 mm/min                    | 22400         | kgf/cm <sup>2</sup> | ASTM D 638  |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 690           | kgf/cm <sup>2</sup> | ASTM D 790  |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 24700         | kgf/cm <sup>2</sup> | ASTM D 790  |
| <b>IMPACT</b>                                |               |                     |             |
| Izod Impact, notched, 23°C                   | 32            | cm-kgf/cm           | ASTM D 256  |
| Instrumented Impact Total Energy, 23°C       | 407           | cm-kgf              | ASTM D 3763 |
| <b>THERMAL</b>                               |               |                     |             |
| Vicat Softening Temp, Rate B/50              | 94            | °C                  | ASTM D 1525 |
| HDT, 0.45 MPa, 3.2 mm, unannealed            | 88            | °C                  | ASTM D 648  |
| HDT, 1.82 MPa, 3.2mm, unannealed             | 75            | °C                  | ASTM D 648  |
| CTE, -40°C to 40°C, flow                     | 8.46E-05      | 1/°C                | ASTM E 831  |
| CTE, -40°C to 40°C, xflow                    | 8.82E-05      | 1/°C                | ASTM E 831  |
| Relative Temp Index, Elec                    | 60            | °C                  | UL 746B     |
| Relative Temp Index, Mech w/impact           | 60            | °C                  | UL 746B     |
| Relative Temp Index, Mech w/o impact         | 60            | °C                  | UL 746B     |
| <b>PHYSICAL</b>                              |               |                     |             |
| Specific Gravity                             | 1.17          | -                   | ASTM D 792  |
| Mold Shrinkage, flow, 3.2 mm                 | 0.5 - 0.8     | %                   | GE Method   |
| Melt Flow Rate, 230°C/3.8 kgf                | 5.3           | g/10 min            | ASTM D 1238 |
| Melt Viscosity, 200°C, 1000 sec-1            | 3500          | poise               | ASTM D 3825 |
| Melt Flow Rate, 220°C/5.0 kg                 | 7             | g/10 min            | ISO 1133    |



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|---------------------------------------------|---------------|------------|----------|
| <b>PHYSICAL</b>                             |               |            |          |
| Melt Flow Rate, 220°C/5.0 kg                | 7             | g/10 min   | ISO 1133 |
| Melt Volume Rate, MVR at 220°C/10.0 kg      | 28            | cm³/10 min | ISO 1133 |
| <b>FLAME CHARACTERISTICS</b>                |               |            |          |
| UL Recognized, 94V-1 Flame Class Rating (3) | 2.31          | mm         | UL 94    |
| UL Recognized, 94V-0 Flame Class Rating (3) | 2.99          | mm         | UL 94    |
| UL Recognized, 94-5VB Rating (3)            | 2.31          | mm         | UL 94    |



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| PROCESSING PARAMETERS       | TYPICAL VALUE | UNIT |
|-----------------------------|---------------|------|
| <b>Injection Molding</b>    |               |      |
| Drying Temperature          | 80            | °C   |
| Drying Time                 | 2 - 4         | hrs  |
| Drying Time (Cumulative)    | 8             | hrs  |
| Maximum Moisture Content    | 0.01          | %    |
| Melt Temperature            | 205 - 245     | °C   |
| Nozzle Temperature          | 205 - 245     | °C   |
| Front - Zone 3 Temperature  | 205 - 225     | °C   |
| Middle - Zone 2 Temperature | 200 - 215     | °C   |
| Rear - Zone 1 Temperature   | 170 - 180     | °C   |
| Mold Temperature            | 50 - 60       | °C   |
| Back Pressure               | 0.3 - 0.7     | MPa  |
| Screw Speed                 | 30 - 60       | rpm  |
| Shot to Cylinder Size       | 50 - 70       | %    |
| Vent Depth                  | 0.038 - 0.051 | mm   |