

## LNP\* Lubricomp\* Compound YL003C

### Asia Pacific: COMMERCIAL

LUBRICOMP\* YL-4030 CCS is a PTFE Lubricated Compound based on Polyester Elastomer resin which has low ionic and low outgassing performance for the Semicon and Internal Hard Disk Drive applications.

| TYPICAL PROPERTIES <sup>1</sup>        | TYPICAL VALUE | UNIT                | STANDARD    |
|----------------------------------------|---------------|---------------------|-------------|
| <b>MECHANICAL</b>                      |               |                     |             |
| Tensile Stress, break                  | 220           | kgf/cm <sup>2</sup> | ASTM D 638  |
| Tensile Strain, break                  | 90            | %                   | ASTM D 638  |
| Tensile Modulus, 50 mm/min             | 2800          | kgf/cm <sup>2</sup> | ASTM D 638  |
| Flexural Stress                        | 190           | kgf/cm <sup>2</sup> | ASTM D 790  |
| Flexural Modulus                       | 2900          | kgf/cm <sup>2</sup> | ASTM D 790  |
| Hardness, Shore D                      | 56            | -                   | ASTM D 2240 |
| Tensile Strain, break, 50 mm/min       | >450          | %                   | ISO 527     |
| Tensile Modulus, 1 mm/min              | 260           | MPa                 | ISO 527     |
| Flexural Stress                        | 12            | MPa                 | ISO 178     |
| Flexural Modulus                       | 280           | MPa                 | ISO 178     |
| <b>IMPACT</b>                          |               |                     |             |
| Izod Impact, unnotched, 23°C           | 59            | cm-kgf/cm           | ASTM D 4812 |
| Izod Impact, notched, 23°C             | 15            | cm-kgf/cm           | ASTM D 256  |
| Izod Impact, unnotched 80*10*3 +23°C   | 48            | kJ/m <sup>2</sup>   | ISO 180/1U  |
| Izod Impact, unnotched 80*10*4 +23°C   | 23            | kJ/m <sup>2</sup>   | ISO 180/1U  |
| <b>THERMAL</b>                         |               |                     |             |
| HDT, 0.45 MPa, 6.4 mm, unannealed      | 85            | °C                  | ASTM D 648  |
| HDT, 1.82 MPa, 6.4 mm, unannealed      | 54            | °C                  | ASTM D 648  |
| CTE, -40°C to 40°C, flow               | 1.1E-04       | 1/°C                | ASTM E 831  |
| CTE, -40°C to 40°C, xflow              | 1.8E-04       | 1/°C                | ASTM E 831  |
| CTE, -40°C to 40°C, flow               | 1.1E-04       | 1/°C                | ISO 11359-2 |
| CTE, -40°C to 40°C, xflow              | 1.8E-04       | 1/°C                | ISO 11359-2 |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm | 88            | °C                  | ISO 75/Bf   |

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| TYPICAL PROPERTIES <sup>1</sup>            | TYPICAL VALUE | UNIT              | STANDARD   |
|--------------------------------------------|---------------|-------------------|------------|
| <b>THERMAL</b>                             |               |                   |            |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm      | 57            | °C                | ISO 75/Af  |
| <b>PHYSICAL</b>                            |               |                   |            |
| Density                                    | 1.27          | g/cm <sup>3</sup> | ASTM D 792 |
| Water Absorption, 23°C/48hrs               | 0.2           | %                 | ASTM D 570 |
| Mold Shrinkage, flow, 24 hrs               | 1.5 - 1.7     | %                 | ASTM D 955 |
| Mold Shrinkage, xflow, 24 hrs              | 1.7 - 1.9     | %                 | ASTM D 955 |
| Mold Shrinkage, flow, 24 hrs               | 1.6           | %                 | ISO 294    |
| Mold Shrinkage, xflow, 24 hrs              | 1.8           | %                 | ISO 294    |
| Density                                    | 1.27          | g/cm <sup>3</sup> | ISO 1183   |
| Water Absorption, (23°C/sat)               | 0.5           | %                 | ISO 62     |
| <b>FLAME CHARACTERISTICS</b>               |               |                   |            |
| UL Recognized, 94HB Flame Class Rating (3) | 1             | mm                | UL 94      |

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| PROCESSING PARAMETERS       | TYPICAL VALUE | UNIT |
|-----------------------------|---------------|------|
| <b>Injection Molding</b>    |               |      |
| Drying Temperature          | 80            | °C   |
| Drying Time                 | 4             | hrs  |
| Maximum Moisture Content    | 0.1           | %    |
| Melt Temperature            | 215 - 240     | °C   |
| Front - Zone 3 Temperature  | 225 - 240     | °C   |
| Middle - Zone 2 Temperature | 205 - 215     | °C   |
| Rear - Zone 1 Temperature   | 180 - 195     | °C   |
| Mold Temperature            | 25 - 55       | °C   |
| Back Pressure               | 0.2 - 0.3     | MPa  |
| Screw Speed                 | 30 - 60       | rpm  |