# LNP™ LUBRICOMP™ COMPOUND 5CL23

FP-VCL-4023

## DESCRIPTION

LNP LUBRICOMP 5CL23 compound is based on Polyvinylidene Fluoride (PVDF) resin containing 15% carbon fiber, 10% PTFE. Added features of this grade include: Wear Resistant, Electrically Conductive.

| GENERAL INFORMATION | |
|---|---|
| **Features** | Electrically Conductive, Wear resistant, High stiffness/Strength |
| **Fillers** | Carbon Fiber, PTFE |
| **Polymer Types** | Polyvinylidene Fluoride (PVDF) |
| **Processing Techniques** | Injection Molding |

| INDUSTRY | SUB INDUSTRY |
|---|---|
| Electrical and Electronics | Energy Management, Electronic Components |
| Industrial | Material Handling |

## TYPICAL PROPERTY VALUES

Revision 20231109

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| MECHANICAL [1] | | | |
| **Tensile Stress, brk, Type I, 5 mm/min** | 84 | MPa | ASTM D638 |
| **Tensile Strain, brk, Type I, 5 mm/min** | 0.8 | % | ASTM D638 |
| **Tensile Modulus, 5 mm/min** | 15780 | MPa | ASTM D638 |
| **Flexural Stress, yld, 1.3 mm/min, 50 mm span** | 108 | MPa | ASTM D790 |
| **Flexural Modulus, 1.3 mm/min, 50 mm span** | 12500 | MPa | ASTM D790 |
| **Tensile Stress, break, 5 mm/min** | 77 | MPa | ISO 527 |
| **Tensile Strain, break, 5 mm/min** | 0.7 | % | ISO 527 |
| **Tensile Modulus, 1 mm/min** | 14460 | MPa | ISO 527 |
| **Flexural Stress** | 100 | MPa | ISO 178 |
| **Flexural Modulus, 2 mm/min** | 11870 | MPa | ISO 178 |
| IMPACT [1] | | | |
| **Izod Impact, unnotched, 23°C** | 201 | J/m | ASTM D4812 |
| **Izod Impact, notched, 23°C** | 55 | J/m | ASTM D256 |
| **Multiaxial Impact** | 3 | J | ISO 6603 |
| **Instrumented Dart Impact Total Energy, 23°C** | 13 | J | ASTM D3763 |
| **Izod Impact, unnotched 80*10*4 +23°C** | 13 | kJ/m² | ISO 180/1U |
| **Izod Impact, notched 80*10*4 +23°C** | 5 | kJ/m² | ISO 180/1A |
| THERMAL [1] | | | |
| **HDT, 0.45 MPa, 3.2 mm, unannealed** | 168 | °C | ASTM D648 |
| **HDT, 1.82 MPa, 3.2mm, unannealed** | 164 | °C | ASTM D648 |
| **CTE, -30°C to 30°C, flow** | 2.1E-05 | 1/°C | ASTM D696 |
| **CTE, -30°C to 30°C, xflow** | 8.4E-05 | 1/°C | ASTM D696 |

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm | 166 | °C | ISO 75/Bf |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm | 158 | °C | ISO 75/Af |
| PHYSICAL [1] | | | |
| Specific Gravity | 1.84 | - | ASTM D792 |
| Density | 1.84 | g/cm³ | ASTM D792 |
| Moisture Absorption, (23°C/50% RH/24 hrs) | 0.03 | % | ASTM D570 |
| Mold Shrinkage, flow, 24 hrs [2] | 0.3 – 0.5 | % | ASTM D955 |
| Mold Shrinkage, xflow, 24 hrs [2] | 1 – 3 | % | ASTM D955 |
| Wear Factor Washer | 5 | 10^-10 in^5-min/ft-lb-hr | ASTM D3702 Modified: Manual |
| Wear Factor Ring | 0 | 10^-10 in^5-min/ft-lb-hr | ASTM D3702 Modified: Manual |
| Dynamic COF | 0.53 | - | ASTM D3702 Modified: Manual |
| Static COF | 0.44 | - | ASTM D3702 Modified: Manual |
| Moisture Absorption (23°C / 50% RH) | 0.05 | % | ISO 62 |
| INJECTION MOLDING [3] | | | |
| Drying Temperature | 120 – 150 | °C | |
| Drying Time | 4 | Hrs | |
| Melt Temperature | 215 – 230 | °C | |
| Front - Zone 3 Temperature | 225 – 245 | °C | |
| Middle - Zone 2 Temperature | 210 – 225 | °C | |
| Rear - Zone 1 Temperature | 190 – 210 | °C | |
| Mold Temperature | 65 – 90 | °C | |
| Back Pressure | 0.2 – 0.3 | MPa | |
| Screw Speed | 30 – 60 | rpm | |

(1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) 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.

(3) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

## DISCLAIMER