

## DuPont Performance Polymers Delrin® 100AL NC010 Acetal (POM) (Unverified Data\*\*)

Category : Polymer , Thermoplastic , Acetal (POM) , Acetal Homopolymer, Unreinforced

### Material Notes:

Lubricated High Viscosity Acetal Homopolymer with Low Wear and Low Friction Delrin 100AL NC010 an unreinforced high viscosity lubricated acetal homopolymer resin containing an advanced system of lubrication for low wear and friction against metals and Information provided by DuPont Performance Polymers

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_DuPont-Performance-Polymers-Delrin-100AL-NC010-Acetal-POM-nbspUnverified-Data.php](http://www.lookpolymers.com/polymer_DuPont-Performance-Polymers-Delrin-100AL-NC010-Acetal-POM-nbspUnverified-Data.php)

| Physical Properties               | Metric                                      | English                                     | Comments       |
|-----------------------------------|---|---|----------------|
| Density                           | 1.40 g/cc                                   | 0.0506 lb/in <sup>3</sup>                   | ISO 1183       |
| Viscosity                         | 111000 cP                                   | 111000 cP                                   | ISO 11403-1 -2 |
|                                   | @Shear Rate 5000 1/s,<br>Temperature 230 °C | @Shear Rate 5000 1/s,<br>Temperature 446 °F |                |
|                                   | 129000 cP                                   | 129000 cP                                   | ISO 11403-1 -2 |
|                                   | @Shear Rate 5000 1/s,<br>Temperature 215 °C | @Shear Rate 5000 1/s,<br>Temperature 419 °F |                |
|                                   | 152000 cP                                   | 152000 cP                                   | ISO 11403-1 -2 |
|                                   | @Shear Rate 5000 1/s,<br>Temperature 200 °C | @Shear Rate 5000 1/s,<br>Temperature 392 °F |                |
| Linear Mold Shrinkage, Flow       | 432000 cP                                   | 432000 cP                                   | ISO 11403-1 -2 |
|                                   | @Shear Rate 500 1/s,<br>Temperature 230 °C  | @Shear Rate 500 1/s,<br>Temperature 446 °F  |                |
|                                   | 502000 cP                                   | 502000 cP                                   | ISO 11403-1 -2 |
| Linear Mold Shrinkage, Transverse | @Shear Rate 500 1/s,<br>Temperature 215 °C  | @Shear Rate 500 1/s,<br>Temperature 419 °F  | ISO 11403-1 -2 |
|                                   | 593000 cP                                   | 593000 cP                                   | ISO 11403-1 -2 |
| Melt Flow                         | @Shear Rate 500 1/s,<br>Temperature 200 °C  | @Shear Rate 500 1/s,<br>Temperature 392 °F  | ISO 11403-1 -2 |
|                                   | 0.020 cm/cm                                 | 0.020 in/in                                 | ISO 294-4 2577 |
|                                   | 0.018 cm/cm                                 | 0.018 in/in                                 | ISO 294-4 2577 |
|                                   | 2.5 g/10 min                                | 2.5 g/10 min                                | ISO 1133       |
|                                   | @Load 2.16 kg,<br>Temperature 190 °C        | @Load 4.76 lb,<br>Temperature 374 °F        |                |

| Mechanical Properties   | Metric                               | English                              | Comments              |
|-------------------------|--------------------------------------|--------------------------------------|-----------------------|
| Tensile Stress          | 44.9 MPa                             | 6510 psi                             | ISO 11403-1 -2        |
|                         | @Strain 2.20 %, Temperature 23.0 °C  | @Strain 2.20 %, Temperature 73.4 °F  |                       |
|                         | 57.6 MPa                             | 8350 psi                             | ISO 11403-1 -2        |
|                         | @Strain 1.80 %, Temperature -40.0 °C | @Strain 1.80 %, Temperature -40.0 °F |                       |
|                         | 64.5 MPa                             | 9350 psi                             | ISO 11403-1 -2        |
|                         | @Strain 8.00 %, Temperature 23.0 °C  | @Strain 8.00 %, Temperature 73.4 °F  |                       |
|                         | 65.6 MPa                             | 9510 psi                             | ISO 11403-1 -2        |
|                         | @Strain 15.0 %, Temperature 23.0 °C  | @Strain 15.0 %, Temperature 73.4 °F  |                       |
|                         | 94.1 MPa                             | 13600 psi                            | ISO 11403-1 -2        |
|                         | @Strain 7.00 %, Temperature -40.0 °C | @Strain 7.00 %, Temperature -40.0 °F |                       |
|                         | 96.0 MPa                             | 13900 psi                            | ISO 11403-1 -2        |
|                         | @Strain 13.0 %, Temperature -40.0 °C | @Strain 13.0 %, Temperature -40.0 °F |                       |
| Tensile Strength, Yield | 70.0 MPa                             | 10200 psi                            | ISO 527-1/-2          |
| Elongation at Break     | 45 %                                 | 45 %                                 | Nominal; ISO 527-1/-2 |
| Elongation at Yield     | 18 %                                 | 18 %                                 | ISO 527-1/-2          |
| Tensile Modulus         | 3.00 GPa                             | 435 ksi                              | ISO 527-1/-2          |
| Flexural Modulus        | 2.80 GPa                             | 406 ksi                              | ISO 178               |
| Secant Modulus          | 0.141 GPa                            | 20.4 ksi                             | ISO 11403-1 -2        |
|                         | @Strain 19.0 %, Temperature 100 °C   | @Strain 19.0 %, Temperature 212 °F   |                       |
|                         | 0.192 GPa                            | 27.8 ksi                             | ISO 11403-1 -2        |
|                         | @Strain 19.0 %, Temperature 80.0 °C  | @Strain 19.0 %, Temperature 176 °F   |                       |
|                         | 0.286 GPa                            | 41.4 ksi                             | ISO 11403-1 -2        |
|                         | @Strain 9.00 %, Temperature 100 °C   | @Strain 9.00 %, Temperature 212 °F   |                       |
|                         | 0.386 GPa                            | 56.1 ksi                             | ISO 11403-1 -2        |
|                         | @Strain 17.0 %, Temperature 23.0 °C  | @Strain 17.0 %, Temperature 73.4 °F  |                       |

| Mechanical Properties      | Metric $\mu\text{Pa}$                   | English                                 | Comments       |
|----------------------------|---|---|----------------|
|                            | @Strain 9.00 %,<br>Temperature 80.0 °C  | @Strain 9.00 %,<br>Temperature 176 °F   | ISO 11403-1 -2 |
|                            | 0.640 GPa                               | 92.8 ksi                                |                |
|                            | @Strain 15.0 %,<br>Temperature -40.0 °C | @Strain 15.0 %,<br>Temperature -40.0 °F | ISO 11403-1 -2 |
|                            | 0.80625 GPa                             | 116.94 ksi                              |                |
|                            | @Strain 8.00 %,<br>Temperature 23.0 °C  | @Strain 8.00 %,<br>Temperature 73.4 °F  | ISO 11403-1 -2 |
|                            | 0.854 GPa                               | 124 ksi                                 |                |
|                            | @Strain 2.40 %,<br>Temperature 100 °C   | @Strain 2.40 %,<br>Temperature 212 °F   | ISO 11403-1 -2 |
|                            | 1.14 GPa                                | 166 ksi                                 |                |
|                            | @Strain 2.40 %,<br>Temperature 80.0 °C  | @Strain 2.40 %,<br>Temperature 176 °F   | ISO 11403-1 -2 |
|                            | 1.34 GPa                                | 195 ksi                                 |                |
|                            | @Strain 7.00 %,<br>Temperature -40.0 °C | @Strain 7.00 %,<br>Temperature -40.0 °F | ISO 11403-1 -2 |
|                            | 2.04 GPa                                | 296 ksi                                 |                |
|                            | @Strain 2.20 %,<br>Temperature 23.0 °C  | @Strain 2.20 %,<br>Temperature 73.4 °F  | ISO 11403-1 -2 |
|                            | 3.20 GPa                                | 464 ksi                                 |                |
|                            | @Strain 1.80 %,<br>Temperature -40.0 °C | @Strain 1.80 %,<br>Temperature -40.0 °F | ISO 11403-1 -2 |
| Izod Impact, Notched (ISO) | 8.00 kJ/m <sup>2</sup>                  | 3.81 ft-lb/in <sup>2</sup>              | ISO 180/1A     |
| Charpy Impact Unnotched    | 25.0 J/cm <sup>2</sup>                  | 119 ft-lb/in <sup>2</sup>               | ISO 179/1eU    |
|                            | 17.0 J/cm <sup>2</sup>                  | 80.9 ft-lb/in <sup>2</sup>              |                |
|                            | @Temperature -30.0 °C                   | @Temperature -22.0 °F                   | ISO 179/1eU    |
| Charpy Impact, Notched     | 0.900 J/cm <sup>2</sup>                 | 4.28 ft-lb/in <sup>2</sup>              | ISO 179/1eA    |
|                            | 0.700 J/cm <sup>2</sup>                 | 3.33 ft-lb/in <sup>2</sup>              |                |
|                            | @Temperature -30.0 °C                   | @Temperature -22.0 °F                   | ISO 179/1eA    |

| Thermal Properties              | Metric                                   | English                                     | Comments       |
|---------------------------------|--|---|----------------|
| CTE, linear, Parallel to Flow   | 110 $\mu\text{m}/\text{m}\cdot\text{°C}$ | 61.1 $\mu\text{in}/\text{in}\cdot\text{°F}$ | ISO 11359-1/-2 |
| CTE, linear, Transverse to Flow | 110 $\mu\text{m}/\text{m}\cdot\text{°C}$ | 61.1 $\mu\text{in}/\text{in}\cdot\text{°F}$ | ISO 11359-1/-2 |

| <b>Melting Point</b><br>Thermal Properties  | <b>178 °C</b><br>Metric | <b>352 °F</b><br>English | <b>10°C/min: ISO 11357-1/-3</b><br>Comments |
|---|-------------------------|--------------------------|---|
| Deflection Temperature at 0.46 MPa (66 psi) | 163 °C                  | 325 °F                   | ISO 75-1/-2                                 |
| Deflection Temperature at 1.8 MPa (264 psi) | 97.0 °C                 | 207 °F                   | ISO 75-1/-2                                 |
| Flammability, UL94                          | HB                      | HB                       | IEC 60695-11-10                             |
|   | @Thickness 1.50 mm      | @Thickness 0.0591 in     |   |
|   | HB                      | HB                       | IEC 60695-11-10                             |
|   | @Thickness 0.800 mm     | @Thickness 0.0315 in     |   |

| <b>Descriptive Properties</b> | <b>Value</b>              | <b>Comments</b> |
|-------------------------------|---------------------------|-----------------|
| Additives                     | Lubricants                |                 |
|                               | Release agent             |                 |
| Delivery Form                 | Pellets                   |                 |
| Emissions                     | <8 mg/kg                  | VDA 275         |
| Part Marking Code             | >POM-S<                   | ISO 11469       |
| Processing                    | Injection Moulding        |                 |
|                               | Other Extrusion           |                 |
|                               | Profile Extrusion         |                 |
|                               | Sheet Extrusion           |                 |
| Regional Availability         | Asia Pacific              |                 |
|                               | Europe                    |                 |
|                               | Global                    |                 |
|                               | Near East/Africa          |                 |
|                               | North America             |                 |
|                               | South and Central America |                 |
| Resin Identification          | POM-S                     | ISO 1043        |
| UL recognition                | UL                        |                 |

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