

DuPont™ Delrin® PC652 NC010 (Preliminary Data)

ACETAL RESIN

Product Information

Common features of Delrin® acetal resins include mechanical and physical properties such as high mechanical strength and rigidity, excellent fatigue and impact resistance, as well as resistance to moisture, gasoline, lubricants, solvents, and many other neutral chemicals. Delrin® acetal resins also have excellent dimensional stability and good electrical insulating characteristics. They are naturally resilient, self-lubricating, and available in a variety of colors and speciality grades.

Delrin® acetal resin typically is used in demanding applications in the automotive, domestic appliances, sports, industrial engineering, electronics, and consumer goods industries.

Delrin® PC652 is a medium viscosity acetal homopolymer, with an advanced system of lubricants. It is developed for parts requiring low wear, low friction and low squeak noise for the healthcare industry.

PREMIUM CONTROL for HEALTHCARE APPLICATIONS

This product is manufactured according to Good Manufacturing Practice (GMP) principles and generally accepted in food contact applications in Europe and the USA when meeting applicable use conditions. This product is also tested against ISO 10993-5 and -11 and selected parts of USP Class VI and US FDA drug and device master files (DMF and MAF) have been established. For details, individual compliance statements are available from your DuPont representative.

| General information | Value | Unit | Test Standard |
|---|-------|------------------------|-----------------|
| Resin Identification | POM | - | ISO 1043 |
| Part Marking Code | POM | - | ISO 11469 |
| Rheological properties | Value | Unit | Test Standard |
| Melt volume-flow rate | 12 | cm ³ /10min | ISO 1133 |
| Temperature | 190 | °C | ISO 1133 |
| Load | 2.16 | kg | ISO 1133 |
| Melt mass-flow rate | 14 | g/10min | ISO 1133 |
| Molding shrinkage, parallel | 1.8 | % | ISO 294-4, 2577 |
| Molding shrinkage, normal | 1.7 | % | ISO 294-4, 2577 |
| Mechanical properties | Value | Unit | Test Standard |
| Tensile Modulus | 3000 | MPa | ISO 527-1/-2 |
| Yield stress | 65 | MPa | ISO 527-1/-2 |
| Yield strain | 11 | % | ISO 527-1/-2 |
| Nominal strain at break | 23 | % | ISO 527-1/-2 |
| Flexural Modulus | 2800 | MPa | ISO 178 |
| Tensile creep modulus | | | ISO 899-1 |
| 1h | 2400 | MPa | |
| 1000h | 1600 | MPa | |
| Charpy impact strength | | | ISO 179/1eU |
| 73°F | 160 | kJ/m ² | |
| -22°F | 130 | kJ/m ² | |
| Charpy notched impact strength | | | ISO 179/1eA |
| 73°F | 7 | kJ/m ² | |
| -22°F | 6 | kJ/m ² | |
| Izod notched impact strength | | | ISO 180/1A |
| 73°F | 6 | kJ/m ² | |
| -40°F | 5 | kJ/m ² | |
| Thermal properties | Value | Unit | Test Standard |
| Melting temperature, 18°F/min | 178 | °C | ISO 11357-1/-3 |
| Temp. of deflection under load | | | ISO 75-1/-2 |
| 260 psi | 97 | °C | |
| 65 psi | 164 | °C | |
| Coeff. of linear therm. expansion, parallel | 120 | E-6/K | ISO 11359-1/-2 |
| Coeff. of linear therm. expansion, normal | 120 | E-6/K | ISO 11359-1/-2 |
| RTI, electrical | | | UL 746B |
| 30mil | 50 | °C | |
| 60mil | 110 | °C | |
| 120mil | 110 | °C | |

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To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

North America

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Europe/Middle East/Africa

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| | | | |
|--------------------------------------|--------------|---------------------|----------------------|
| RTI, impact | | | UL 746B |
| 30mil | 50 | °C | |
| 60mil | 85 | °C | |
| 120mil | 90 | °C | |
| RTI, strength | | | UL 746B |
| 30mil | 50 | °C | |
| 60mil | 90 | °C | |
| 120mil | 95 | °C | |
| Flammability | Value | Unit | Test Standard |
| Burning Behav. at 60mil nom. thickn. | HB | class | IEC 60695-11-10 |
| Thickness tested | 1.5 | mm | IEC 60695-11-10 |
| UL recognition | yes | - | UL 94 |
| Burning Behav. at thickness h | HB | class | IEC 60695-11-10 |
| Thickness tested | 0.8 | mm | IEC 60695-11-10 |
| UL recognition | yes | - | UL 94 |
| Other properties | Value | Unit | Test Standard |
| Density | 1390 | kg/m ³ | ISO 1183 |
| VDA Properties | Value | Unit | Test Standard |
| Emissions | <8 | mg/kg | VDA 275 |
| Injection | Value | Unit | Test Standard |
| Drying Recommended | yes | - | - |
| Drying Temperature | ≥80 | °C | - |
| Drying Time, Dehumidified Dryer | 2 - 4 | h | - |
| Processing Moisture Content | ≤0.2 | % | - |
| Melt Temperature Optimum | 215 | °C | - |
| Min. melt temperature | 210 | °C | - |
| Max. melt temperature | 220 | °C | - |
| Mold Temperature Optimum | 90 | °C | - |
| Min. mold temperature | 80 | °C | - |
| Max. mold temperature | 100 | °C | - |
| Hold pressure range | 80 - 100 | MPa | - |
| Hold pressure time | 8 | s/mm | - |
| Annealing time, optional | 30 | min/mm | - |
| Annealing temperature | 160 | °C | - |
| Characteristics | | | |
| Processing | | • Injection Molding | |
| Delivery form | | • Pellets | |
| Additives | | • Lubricants | • Release agent |

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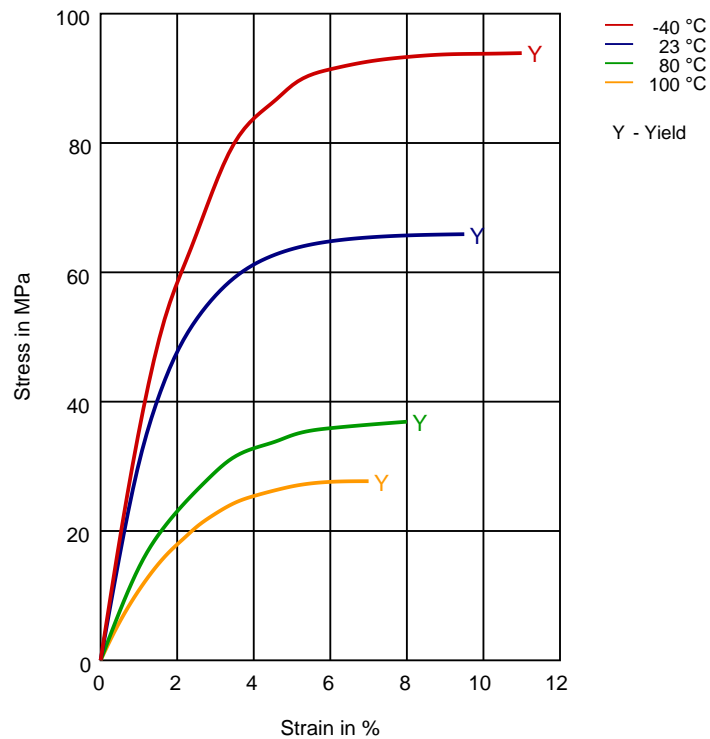


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Diagrams

Stress-strain



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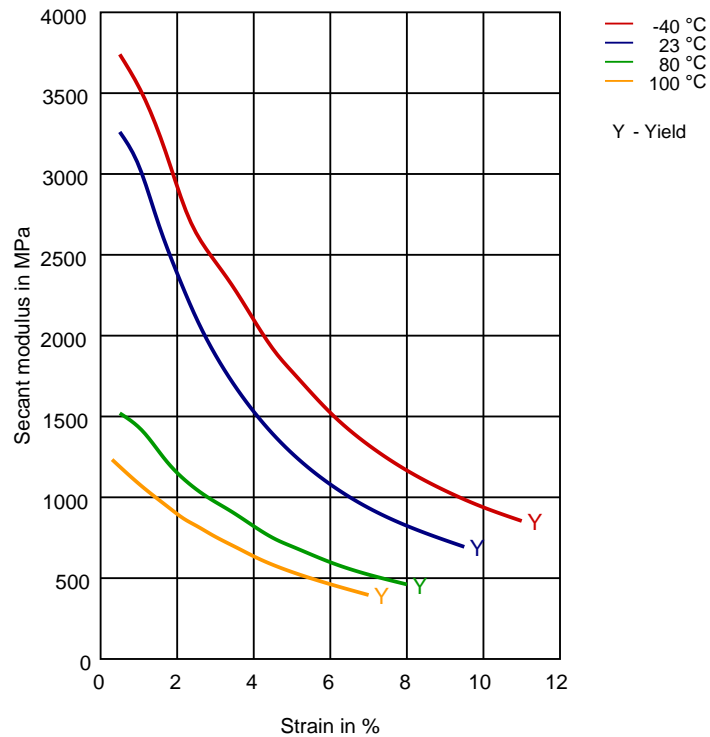
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Secant modulus-strain



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Chemical Media Resistance

Sterilization methods

✓ Ethylene Oxide

Symbols used:

✓ possibly resistant

Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).

✗ not recommended - see explanation

Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).

The above data are preliminary and are subject to change as additional data are developed on subsequent lots.

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 160 mil (Hytrel® measured at 80 mil), IEC Electrical properties measured at 80 mil, all ASTM properties measured at 120 mil, and test temperatures are 73°F unless otherwise stated.

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