# DuPont™ Delrin® 525GR NC000

## 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® 525GR is a 25% glass-reinforced acetal homopolymer for injection molding. It has very high strength, stiffness, and high deflection temperature, excellent creep resistance, and good notched impact properties.**

| General information | Value | Unit | Test Standard |
|---|---|---|---|
| Resin Identification | POM-GF25 | - | ISO 1043 |
| Part Marking Code | POM-GF25 | - | ISO 11469 |
| **Rheological properties** | **Value** | **Unit** | **Test Standard** |
| Melt volume-flow rate | 5 | cm³/10min | ISO 1133 |
| Temperature | 190 | °C | ISO 1133 |
| Load | 2.16 | kg | ISO 1133 |
| Molding shrinkage, parallel | 0.4 | % | ISO 294-4, 2577 |
| Molding shrinkage, normal | 1.2 | % | ISO 294-4, 2577 |
| **Mechanical properties** | **Value** | **Unit** | **Test Standard** |
| Tensile Modulus | 9500 | MPa | ISO 527-1/-2 |
| Stress at break | 160 | MPa | ISO 527-1/-2 |
| Strain at break | 3 | % | ISO 527-1/-2 |
| Flexural Modulus | 9150 | MPa | ISO 178 |
| Flexural Strength | 245[1] | MPa | ISO 178 |
| Tensile creep modulus | | | ISO 899-1 |
| 1h | 8500 | MPa | |
| 1000h | 6000 | MPa | |
| Charpy impact strength | | | ISO 179/1eU |
| 73°F | 60 | kJ/m² | |
| -22°F | 50 | kJ/m² | |
| Charpy notched impact strength | | | ISO 179/1eA |
| 73°F | 10 | kJ/m² | |
| -22°F | 10 | kJ/m² | |

1: Strain at break = 3.2%

| 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 | 172 | °C | |
| 65 psi | 176 | °C | |
| Coeff. of linear therm. expansion, parallel | 35 | E-6/K | ISO 11359-1/-2 |
| Coeff. of linear therm. expansion, normal | 100 | E-6/K | ISO 11359-1/-2 |
| RTI, electrical | | | UL 746B |
| 30mil | 50 | °C | |
| 60mil | 50 | °C | |
| 120mil | 50 | °C | |
| RTI, impact | | | UL 746B |
| 30mil | 50 | °C | |
| 60mil | 50 | °C | |
| 120mil | 50 | °C | |
| RTI, strength | | | UL 746B |
| 30mil | 50 | °C | |
| 60mil | 50 | °C | |
| 120mil | 50 | °C | |



**To find out more, visit DuPont Performance Polymers or contact nearest DuPont location.**

**North America**
Tel: +1 302 999-4592
Toll-Free (USA): 800 441-0575

**Asia Pacific**
Tel: +81 3 5521 8600

**Europe/Middle East/Africa**
Tel: +41 22 717 51 11

Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

# DuPont™ Delrin® 525GR NC000

## ACETAL RESIN

| 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 | 0.75 | mm | IEC 60695-11-10 |
| UL recognition | yes | - | UL 94 |
| FMVSS Class | B | - | ISO 3795 (FMVSS 302) |
| Burning rate, Thickness 1 mm | 49 | mm/min | ISO 3795 (FMVSS 302) |
| **Electrical properties** | **Value** | **Unit** | **Test Standard** |
| Relative permittivity | | | IEC 60250 |
| 100Hz | 3.7 | - | |
| 1MHz | 3.8 | - | |
| Volume resistivity | 1E12 | Ohm*m | IEC 60093 |
| **Other properties** | **Value** | **Unit** | **Test Standard** |
| Humidity absorption, 80mil | 0.17 | % | Sim. to ISO 62 |
| Water absorption, 80mil | 1.26 | % | Sim. to ISO 62 |
| Density | 1590 | kg/m³ | ISO 1183 |
| **VDA Properties** | **Value** | **Unit** | **Test Standard** |
| Emissions | <8 | mg/kg | VDA 275 |
| Fogging, G-value (condensate) | 1.2 | mg | ISO 6452 |
| **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 | • Release agent | | |
| Regional Availability | • North America<br>• Europe | • Asia Pacific<br>• South and Central America | • Near East/Africa<br>• Global |

### Processing Texts

#### Injection molding

Drying is recommended, but not necessary for newly opened packaging stored in a dry location.

Follow the drying guidelines above in the following cases:
· If moisture is above the Processing Moisture Content recommendation,
· When a resin container is damaged,
· When the material is not properly stored in a dry place at room temperature, or
· When packaging stays open for a significant time.



**To find out more, visit DuPont Performance Polymers or contact nearest DuPont location.**

**North America**
Tel: +1 302 999-4592
Toll-Free (USA): 800 441-0575

**Asia Pacific**
Tel: +81 3 5521 8600

**Europe/Middle East/Africa**
Tel: +41 22 717 51 11

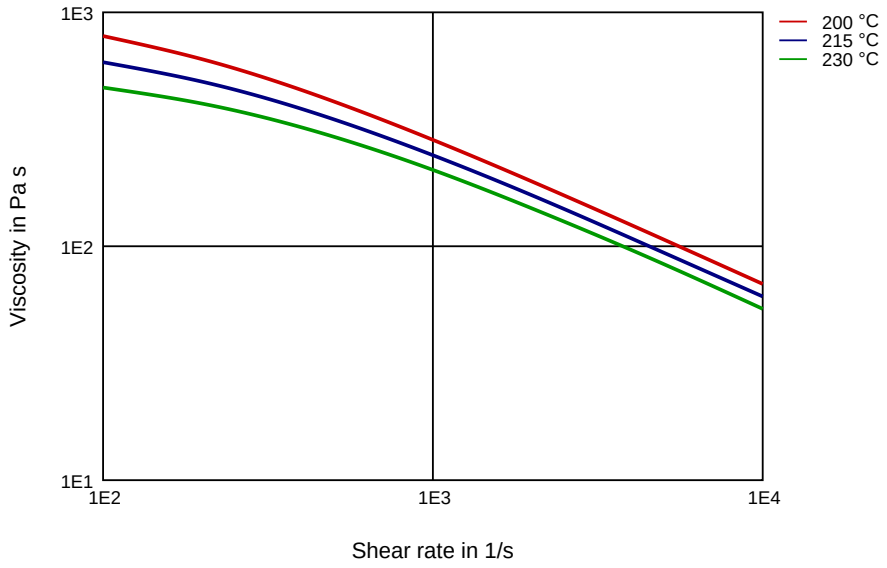
Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

# DuPont™ Delrin® 525GR NC000

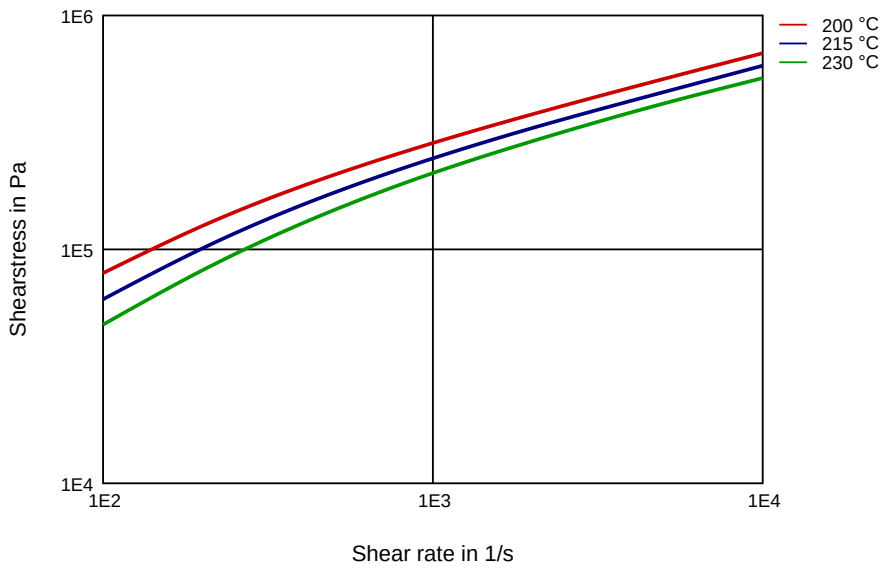
## ACETAL RESIN

### Diagrams

#### Viscosity-shear rate




#### Shearstress-shear rate






**To find out more, visit DuPont Performance Polymers or contact nearest DuPont location.**

**North America**
Tel: +1 302 999-4592
Toll-Free (USA): 800 441-0575

**Asia Pacific**
Tel: +81 3 5521 8600

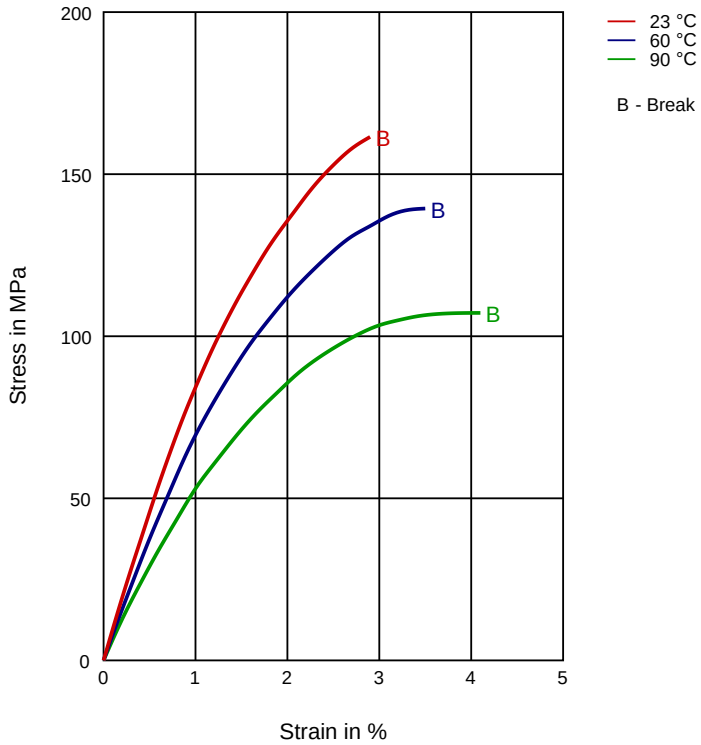
**Europe/Middle East/Africa**
Tel: +41 22 717 51 11

Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

# DuPont™ Delrin® 525GR NC000

## ACETAL RESIN

Stress-strain






**To find out more, visit DuPont Performance Polymers or contact nearest DuPont location.**

**North America**
Tel: +1 302 999-4592
Toll-Free (USA): 800 441-0575

**Asia Pacific**
Tel: +81 3 5521 8600

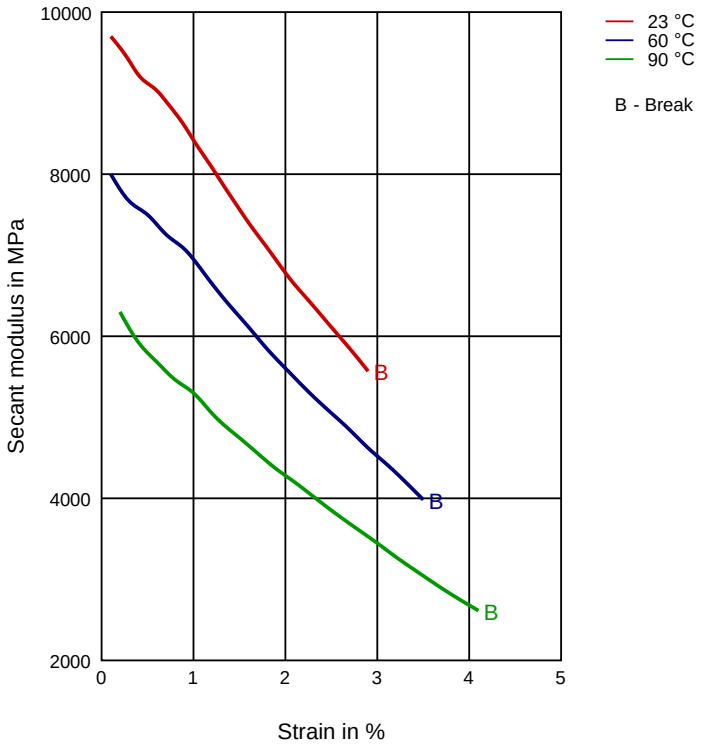
**Europe/Middle East/Africa**
Tel: +41 22 717 51 11

Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

# DuPont™ Delrin® 525GR NC000

## ACETAL RESIN

Secant modulus-strain






**To find out more, visit DuPont Performance Polymers or contact nearest DuPont location.**

**North America**
Tel: +1 302 999-4592
Toll-Free (USA): 800 441-0575

**Asia Pacific**
Tel: +81 3 5521 8600

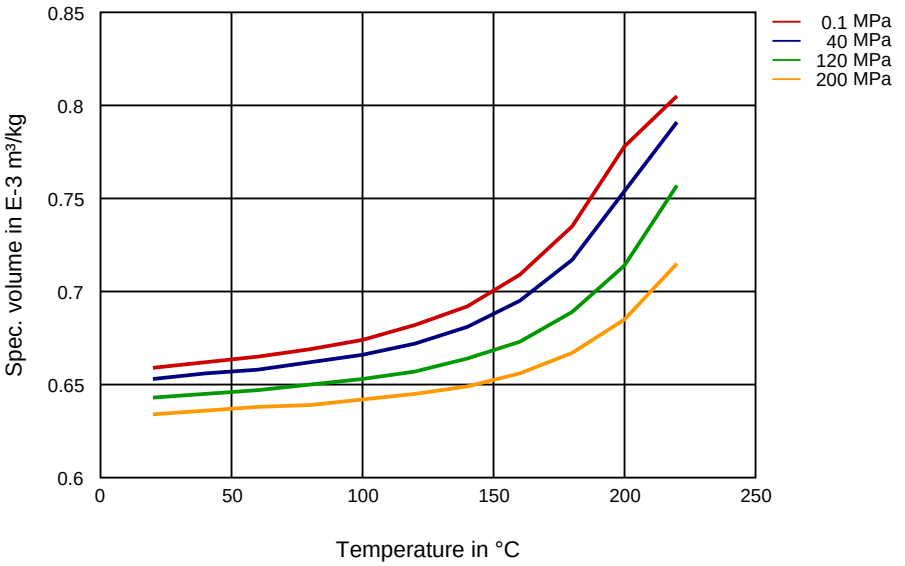
**Europe/Middle East/Africa**
Tel: +41 22 717 51 11

Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

# DuPont™ Delrin® 525GR NC000

## ACETAL RESIN

Specific volume-temperature (pvT)




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.

The information set forth herein is furnished free of charge and is based on technical data that DuPont believes to be reliable and falls within the normal range of properties. It is intended for use by persons having technical skill, at their own discretion and risk. This data should not be used to establish specification limits nor used alone as the basis of design. Handling precaution information is given with the understanding that those using it will satisfy themselves that their particular conditions of use present no health or safety hazards. Since conditions of product use and disposal are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information. As with any product, evaluation under end-use conditions prior to specification is essential. Nothing herein is to be taken as a license to operate or a recommendation to infringe on patents. Caution: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, discuss with your DuPont customer representative and read Medical Caution H-50103-5.

Copyright © 2017 DuPont or its affiliates. All Rights Reserved. The DuPont Oval Logo, DuPont™, The miracles of science™ and all products denoted with ® or ™ are registered trademarks or trademarks of E.I. du Pont de Nemours and Company or its affiliates.



**To find out more, visit DuPont Performance Polymers or contact nearest DuPont location.**

**North America**
Tel: +1 302 999-4592
Toll-Free (USA): 800 441-0575

**Asia Pacific**
Tel: +81 3 5521 8600

**Europe/Middle East/Africa**
Tel: +41 22 717 51 11

Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.