



Delrin® 300CPE NC010 (PRELIMINARY)

ACETAL RESIN

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® 300CPE (DE20732) is a medium-high viscosity acetal homopolymer with outstanding balance of ease of processing and part performance, and with very low VOC emissions. Delrin® 300CPE provides optimum mechanical performance with its excellent combination of toughness and strength with improved processing, thermal stability and productivity for injection molding.

Product information

| | | |
|----------------------|-------|-----------|
| Resin Identification | POM | ISO 1043 |
| Part Marking Code | >POM< | ISO 11469 |

Rheological properties

| | | |
|----------------------------------|--------------------------|-----------------|
| Melt volume-flow rate | 6 cm ³ /10min | ISO 1133 |
| Melt mass-flow rate | 7 g/10min | ISO 1133 |
| Temperature | 190 °C | ISO 1133 |
| Load | 2.16 kg | ISO 1133 |
| Melt mass-flow rate, Temperature | 190 °C | ISO 1133 |
| Melt mass-flow rate, Load | 2.16 kg | ISO 1133 |
| Moulding shrinkage, parallel | 2.1 % | ISO 294-4, 2577 |
| Moulding shrinkage, normal | 1.8 % | ISO 294-4, 2577 |

Typical mechanical properties

| | | |
|---------------------------------------|------------------------|--------------|
| Tensile Modulus | 3100 MPa | ISO 527-1/-2 |
| Yield stress | 71 MPa | ISO 527-1/-2 |
| Yield strain | 25 % | ISO 527-1/-2 |
| Nominal strain at break | 40 % | ISO 527-1/-2 |
| Charpy impact strength, 23°C | N kJ/m ² | ISO 179/1eU |
| Charpy impact strength, -30°C | 370 kJ/m ² | ISO 179/1eU |
| Charpy notched impact strength, 23°C | 10.5 kJ/m ² | ISO 179/1eA |
| Charpy notched impact strength, -30°C | 10 kJ/m ² | ISO 179/1eA |
| Poisson's ratio | 0.37 - | |



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Thermal properties

| | | |
|---|-----------|----------------|
| Melting temperature, 10°C/min | 178 °C | ISO 11357-1/-3 |
| Temp. of deflection under load, 1.8 MPa | 94 °C | ISO 75-1/-2 |
| Temp. of deflection under load, 0.45 MPa | 165 °C | ISO 75-1/-2 |
| Coeff. of linear therm. expansion, parallel | 110 E-6/K | ISO 11359-1/-2 |
| Coeff. of linear therm. expansion, normal | 110 E-6/K | ISO 11359-1/-2 |

Flammability

| | | |
|--------------------------------------|-----------|----------------------|
| Burning Behav. at 1.5mm 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 |
| FMVSS Class | B - | ISO 3795 (FMVSS 302) |
| Burning rate, Thickness 1 mm | 23 mm/min | ISO 3795 (FMVSS 302) |

Electrical properties

| | | |
|------------------------------|-------------|---------------|
| Relative permittivity, 100Hz | 3.8 - | IEC 62631-2-1 |
| Relative permittivity, 1MHz | 3.5 - | IEC 62631-2-1 |
| Dissipation factor, 1MHz | 56 E-4 | IEC 62631-2-1 |
| Volume resistivity | >1E13 Ohm.m | IEC 62631-3-1 |
| Surface resistivity | >1E15 Ohm | IEC 62631-3-2 |
| Comparative tracking index | 600 - | IEC 60112 |

Other properties

| | | |
|--------------------------|------------------------|----------------|
| Humidity absorption, 2mm | 0.2 % | Sim. to ISO 62 |
| Water absorption, 2mm | 0.9 % | Sim. to ISO 62 |
| Density | 1420 kg/m ³ | ISO 1183 |
| Density of melt | 1160 kg/m ³ | |

VDA Properties

| | | |
|-----------|----------|---------|
| Emissions | <2 mg/kg | VDA 275 |
|-----------|----------|---------|

Injection

| | |
|---------------------------------|---------|
| Drying Recommended | yes |
| Drying Temperature | 80 °C |
| Drying Time, Dehumidified Dryer | 2 - 4 h |
| Processing Moisture Content | ≤0.2 % |
| Melt Temperature Optimum | 205 °C |
| Min. melt temperature | 200 °C |
| Max. melt temperature | 215 °C |
| Max. screw tangential speed | 0.2 m/s |



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| Mold Temperature Optimum | 90 °C |
| Min. mould temperature | 80 °C |
| Max. mould temperature | 100 °C |
| Hold pressure range | 80 - 100 MPa |
| Hold pressure time | 8 s/mm |
| Ejection temperature | 135 °C |
| Annealing time, optional | 30 min/mm |
| Annealing temperature | 160 °C |

Characteristics

Additives

Release agent

Additional Information

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:

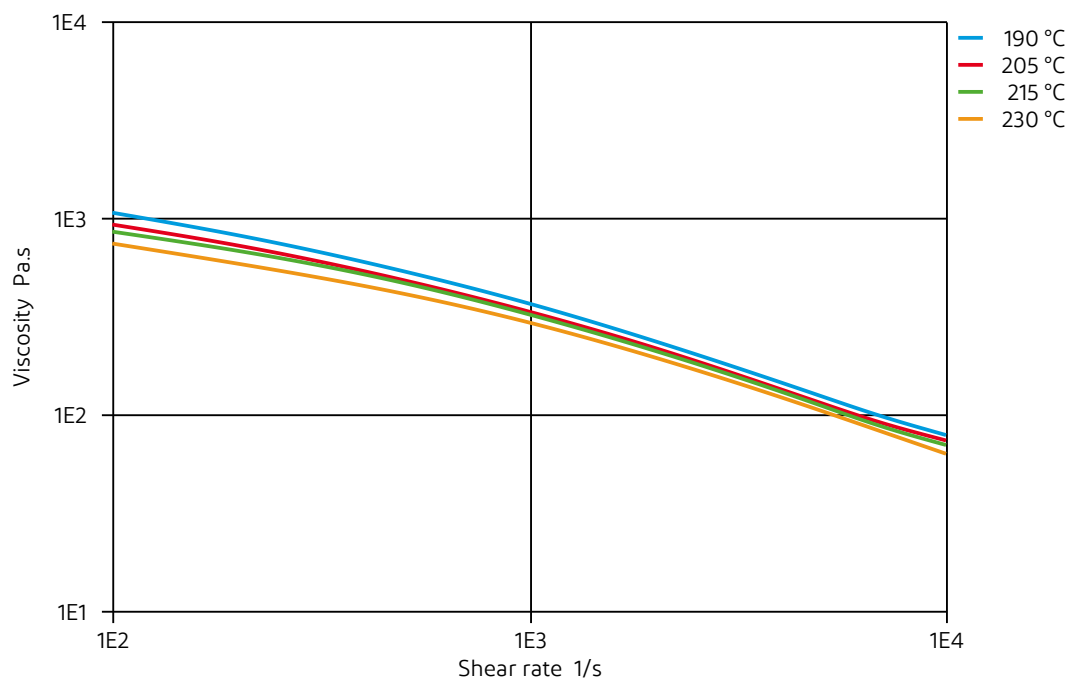
- If moisture is above the Processing Moisture Content recommendation,
- When a resin container is damaged,
- When the material is not properly stored in a dry place at room temperature, or
- When packaging stays open for a significant time.



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Viscosity-shear rate

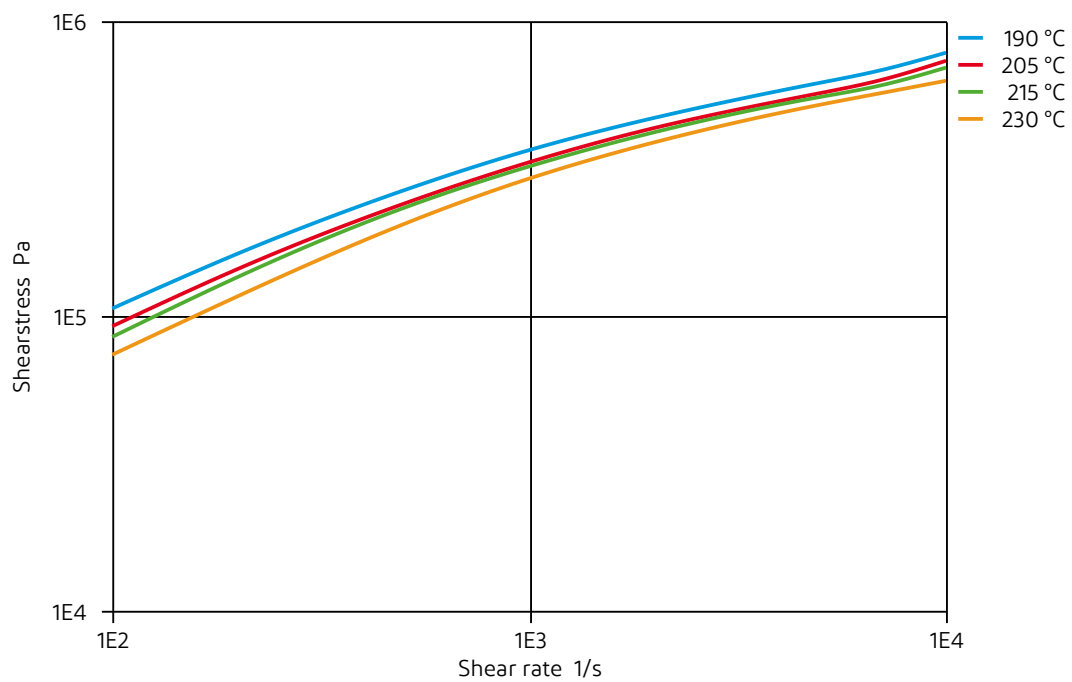




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Shearstress-shear rate

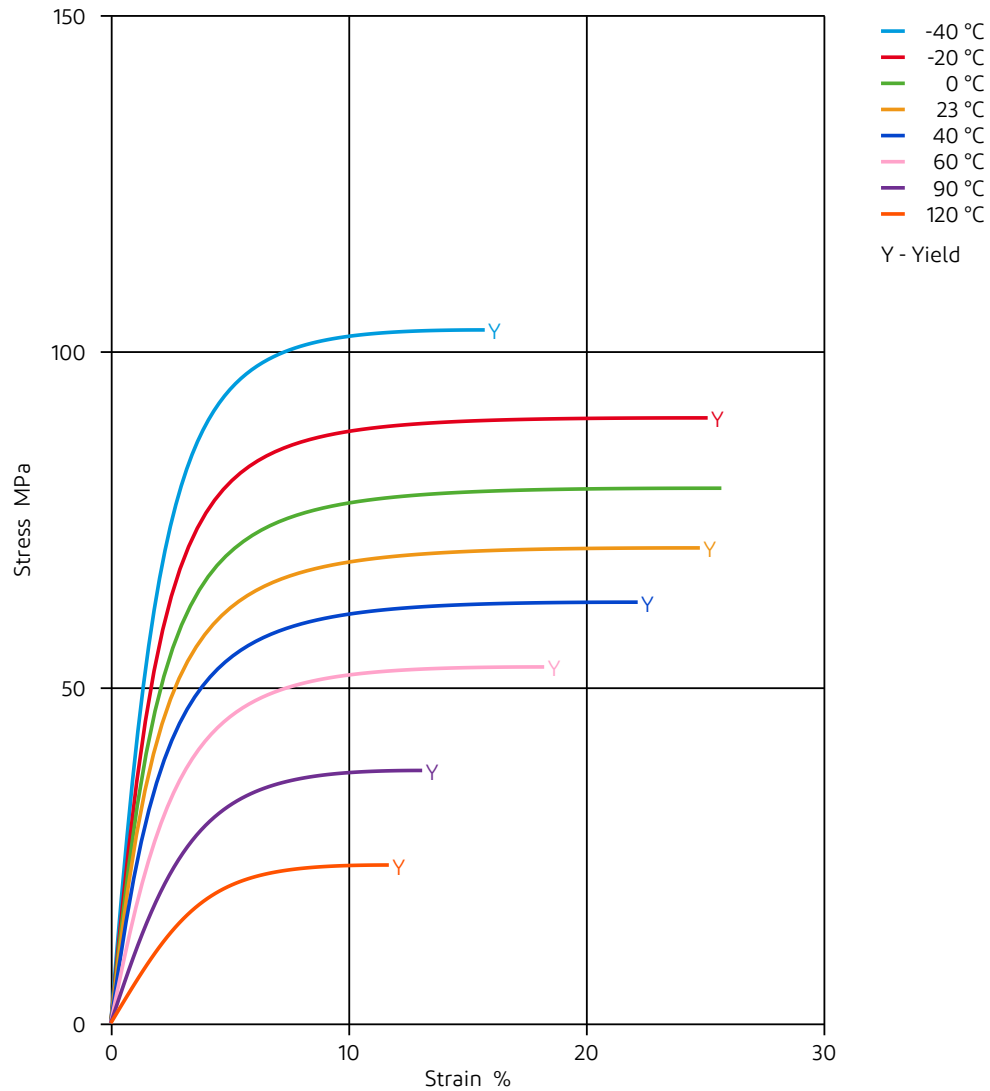




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Stress-strain

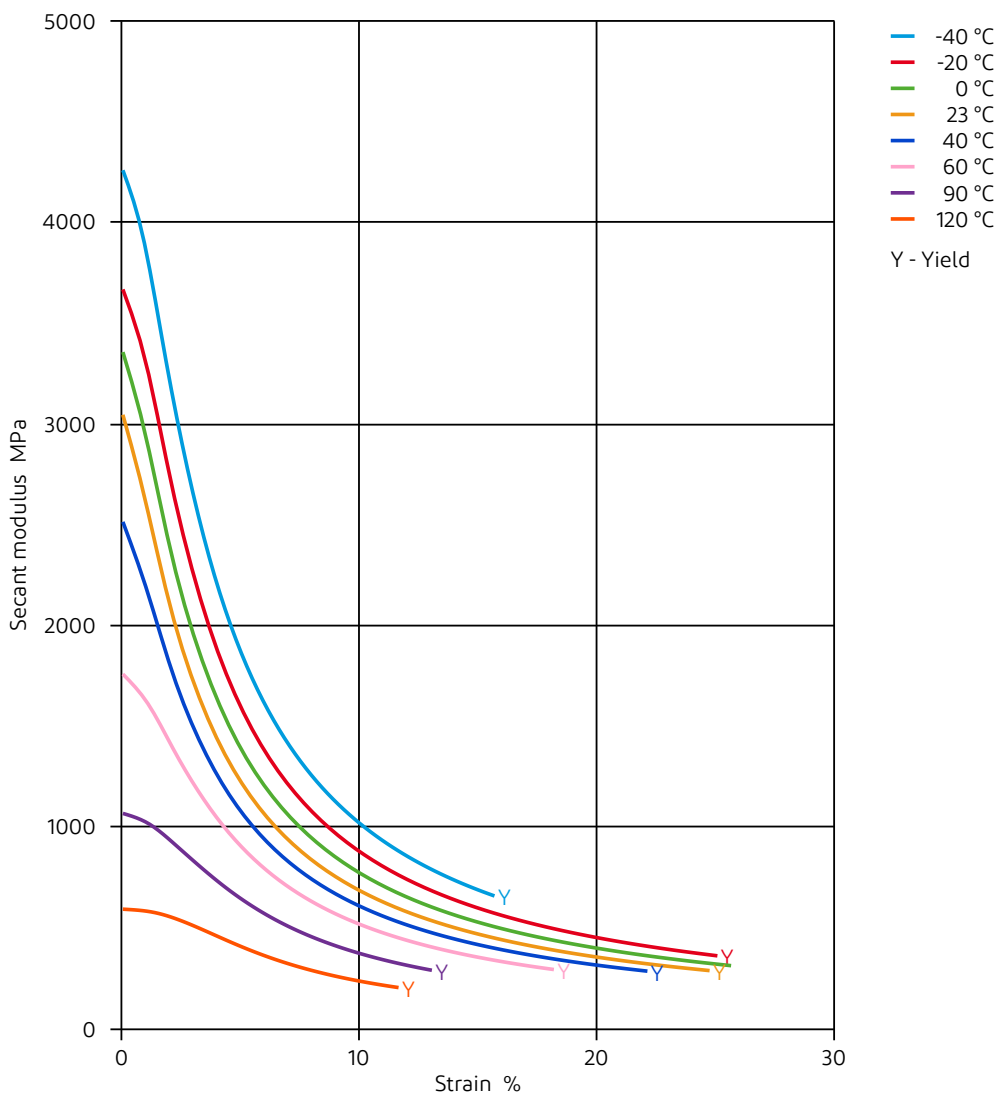




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Secant modulus-strain



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

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