



# Delrin® RAFG100 NC010

## 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® RAFG100 NC010 is a high viscosity acetal homopolymer for use in easy-to-fill molds with reduced lifecycle greenhouse gas emissions and lower fossil resource use.

Delrin® RAFG100 NC010 provides a great combination of toughness and strength, and improved processing thermal stability and productivity for injection molding. It has been developed for applications in contact with food.

Delrin® Renewable Attributed base polymer is produced from 100% bio-feedstock from waste\*. 100% certified renewable electricity is used for its production.

This approach helps customers in achieving their sustainability goals.

\* according to ISCC Plus mass balance certification.

## FOOD CONTACT

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. For details, individual compliance statements are available from your Delrin representative.

## Product information

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

## Rheological properties

Melt volume-flow rate	1.9 cm <sup>3</sup> /10min	ISO 1133
Melt mass-flow rate	2.3 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	2.0 %	ISO 294-4, 2577
Moulding shrinkage, normal	1.9 %	ISO 294-4, 2577



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### Typical mechanical properties

Tensile Modulus	3000 MPa	ISO 527-1/-2
Yield stress	71 MPa	ISO 527-1/-2
Yield strain	25 %	ISO 527-1/-2
Nominal strain at break	45 %	ISO 527-1/-2
Flexural Modulus	2700 MPa	ISO 178
Tensile creep modulus, 1h	2900 MPa	ISO 899-1
Tensile creep modulus, 1000h	1600 MPa	ISO 899-1
Charpy impact strength, 23°C	N kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30°C	N kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, 23°C	15 kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -30°C	11 kJ/m <sup>2</sup>	ISO 179/1eA
Poisson's ratio	0.37	

### Thermal properties

Melting temperature, 10°C/min	178 °C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	98 °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
RTI, electrical, 0.75mm	50 °C	UL 746B
RTI, electrical, 1.5mm	105 °C	UL 746B
RTI, electrical, 3mm	105 °C	UL 746B
RTI, electrical, 6mm	105 °C	UL 746B
RTI, impact, 0.75mm	50 °C	UL 746B
RTI, impact, 1.5mm	85 °C	UL 746B
RTI, impact, 3mm	85 °C	UL 746B
RTI, impact, 6mm	85 °C	UL 746B
RTI, strength, 0.75mm	50 °C	UL 746B
RTI, strength, 1.5mm	90 °C	UL 746B
RTI, strength, 3mm	90 °C	UL 746B
RTI, strength, 6mm	90 °C	UL 746B

### 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	0.75 mm	IEC 60695-11-10
UL recognition	yes	UL 94



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### Other properties

Humidity absorption, 2mm	0.2 %	Sim. to ISO 62
Water absorption, 2mm	0.9 %	Sim. to ISO 62
Density	1420 kg/m <sup>3</sup>	ISO 1183

### Injection

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
Max. screw tangential speed	0.2 m/s
Mold Temperature Optimum	90 °C
Min. mould temperature	80 °C
Max. mould temperature	100 °C
Hold pressure range	90 - 110 MPa
Hold pressure time	8 s/mm
Annealing time, optional	30 min/mm
Annealing temperature	160 °C

### Extrusion

Drying Temperature	75 - 85 °C
Drying Time, Dehumidified Dryer	2 - 4 h
Processing Moisture Content	≤0.2 %
Melt Temperature Optimum	200 °C
Melt Temperature Range	195 - 205 °C

### Characteristics

Additives	Biobased
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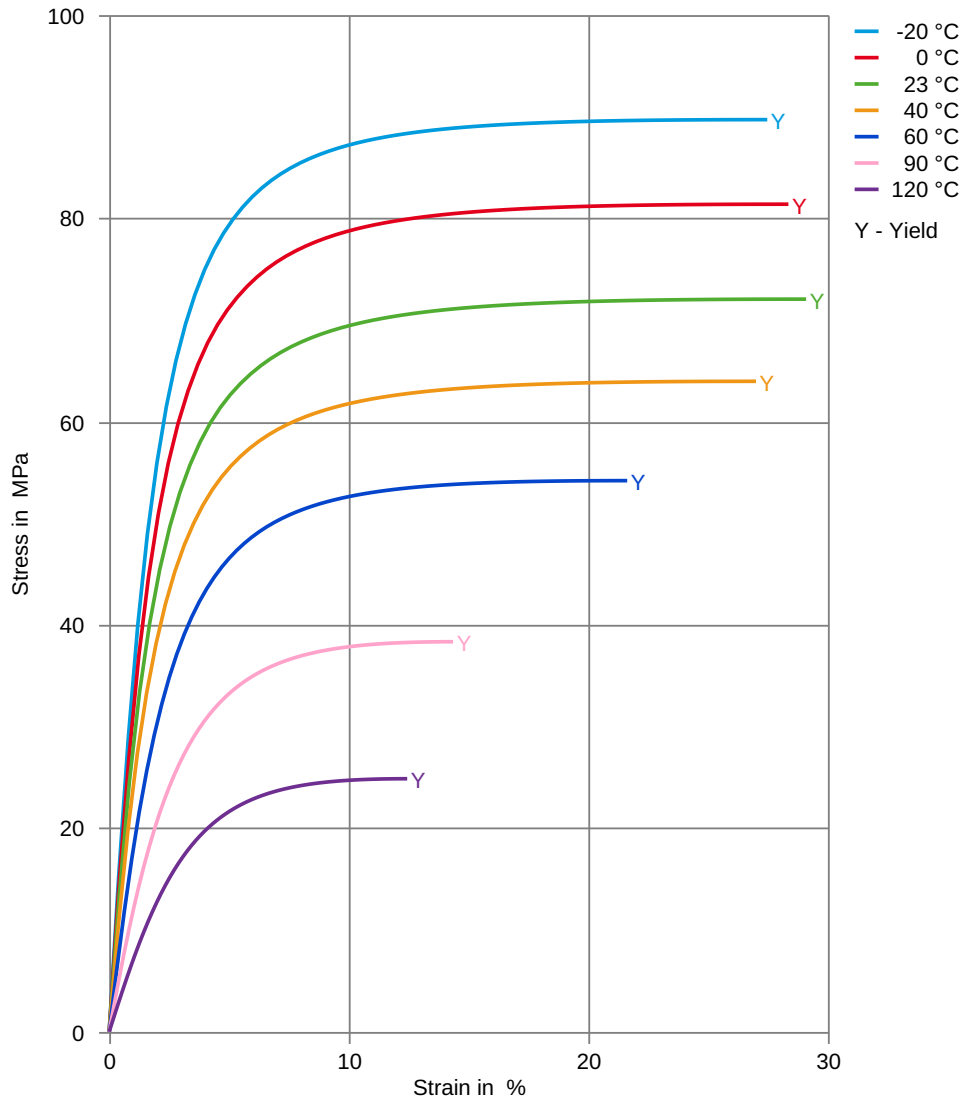
### Additional information

Injection molding	<p>Drying is recommended, but not necessary for newly opened packaging stored in a dry location.</p> <p>Follow the drying guidelines above in the following cases:</p> <ul style="list-style-type: none"><li>· If moisture is above the Processing Moisture Content recommendation,</li><li>· When a resin container is damaged,</li><li>· When the material is not properly stored in a dry place at room temperature, or</li><li>· When packaging stays open for a significant time.</li></ul>
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## Stress-strain



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## Secant modulus-strain

