

CAMPUS® Datasheet



Delrin® 500AL NC010 - POM-Z DuPont Engineering Polymers

Product Texts

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.

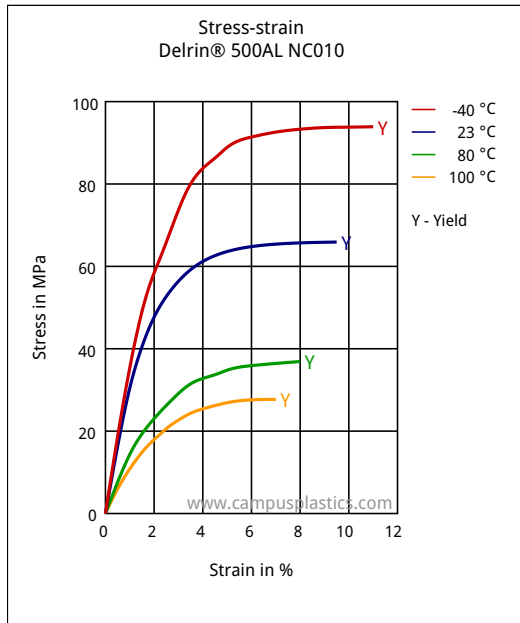
Delrin® acetal resin typically is used in demanding applications in the automotive, domestic appliances, sports, industrial engineering, electronics, and consumer goods industries.

Delrin® 500AL is a medium viscosity acetal homopolymer containing an advanced system of lubrication designed for low wear, low friction, and low noise against metals and plastics.

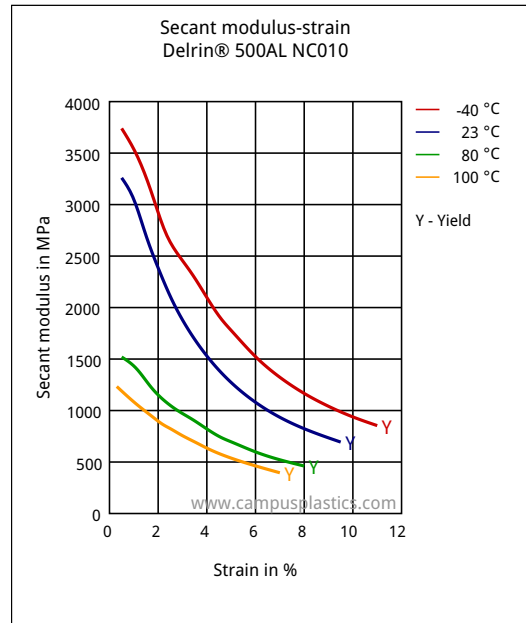
Rheological properties	Value	Unit	Test Standard
Melt volume-flow rate, MVR	12	cm ³ /10min	ISO 1133
Temperature	190	°C	ISO 1133
Load	2.16	kg	ISO 1133
Molding shrinkage, parallel	1.8	%	ISO 294-4, 2577
Molding shrinkage, normal	1.7	%	ISO 294-4, 2577
Mechanical properties	Value	Unit	Test Standard
Tensile modulus	3000	MPa	ISO 527-1/-2
Yield stress	66	MPa	ISO 527-1/-2
Yield strain	11	%	ISO 527-1/-2
Nominal strain at break	23	%	ISO 527-1/-2
Tensile creep modulus, 1h	2400	MPa	ISO 899-1
Tensile creep modulus, 1000h	1600	MPa	ISO 899-1
Charpy impact strength, +23°C	160	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	130	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, +23°C	7	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	6	kJ/m ²	ISO 179/1eA
Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	178	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.80 MPa	97	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	164	°C	ISO 75-1/-2
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
Burning Behav. at 1.5 mm nom. thickn.	HB	class	IEC 60695-11-10
Thickness tested (1.5)	1.5	mm	IEC 60695-11-10
Yellow Card available	Yes	-	-
Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested (h)	0.8	mm	IEC 60695-11-10
Yellow Card available	Yes	-	-
Burning rate, thickness 1 mm	28	mm/min	ISO 3795 (FMVSS 302)
FMVSS	B	-	ISO 3795 (FMVSS 302)
Other properties	Value	Unit	Test Standard
Humidity absorption	0.3	%	Sim. to ISO 62
Density	1390	kg/m ³	ISO 1183
Rheological calculation properties	Value	Unit	Test Standard
Density of melt	1180	kg/m ³	-

Diagrams

Stress-strain



Secant modulus-strain



Characteristics

Processing

Injection Molding

Additives

Lubricants, Release agent

Delivery form

Pellets

Other text 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.

Chemical Media Resistance




Acids

- ☺ Acetic Acid (5% by mass) (23°C)
- ⊖ Citric Acid solution (10% by mass) (23°C)
- ⊖ Lactic Acid (10% by mass) (23°C)
- ⊖ Hydrochloric Acid (36% by mass) (23°C)
- ⊖ Nitric Acid (40% by mass) (23°C)
- ⊖ Sulfuric Acid (38% by mass) (23°C)
- ⊖ Sulfuric Acid (5% by mass) (23°C)




Delrin® 500AL NC010 - POM-Z DuPont Engineering Polymers

 Chromic Acid solution (40% by mass) (23°C)




Bases

-  Sodium Hydroxide solution (35% by mass) (23°C)
-  Sodium Hydroxide solution (1% by mass) (23°C)
-  Ammonium Hydroxide solution (10% by mass) (23°C)

Alcohols

-  Isopropyl alcohol (23°C)
-  Methanol (23°C)
-  Ethanol (23°C)


Hydrocarbons

-  n-Hexane (23°C)
-  Toluene (23°C)
-  iso-Octane (23°C)





Ketones

-  Acetone (23°C)










Ethers

-  Diethyl ether (23°C)






Mineral oils

-  SAE 10W40 multigrade motor oil (23°C)
-  SAE 10W40 multigrade motor oil (130°C)
-  SAE 80/90 hypoid-gear oil (130°C)
-  Insulating Oil (23°C)




Standard Fuels

-  ISO 1817 Liquid 1 (60°C)
-  ISO 1817 Liquid 2 (60°C)
-  ISO 1817 Liquid 3 (60°C)
-  ISO 1817 Liquid 4 (60°C)
-  Standard fuel without alcohol (pref. ISO 1817 Liquid C) (23°C)
-  Standard fuel with alcohol (pref. ISO 1817 Liquid 4) (23°C)
-  Diesel fuel (pref. ISO 1817 Liquid F) (23°C)
-  Diesel fuel (pref. ISO 1817 Liquid F) (90°C)
-  Diesel fuel (pref. ISO 1817 Liquid F) (>90°C)

Salt solutions







-  Sodium Chloride solution (10% by mass) (23°C)
-  Sodium Hypochlorite solution (10% by mass) (23°C)
-  Sodium Carbonate solution (20% by mass) (23°C)
-  Sodium Carbonate solution (2% by mass) (23°C)
-  Zinc Chloride solution (50% by mass) (23°C)

Other

-  Ethyl Acetate (23°C)
-  Hydrogen peroxide (23°C)
-  DOT No. 4 Brake fluid (130°C)

Delrin® 500AL NC010 - POM-Z

DuPont Engineering Polymers

-  Ethylene Glycol (50% by mass) in water (108°C)
-  1% nonylphenoxy-polyethyleneoxy ethanol in water (23°C)
-  50% Oleic acid + 50% Olive Oil (23°C)
-  Water (23°C)
-  Deionized water (90°C)
-  Phenol solution (5% by mass) (23°C)

All data provided according to ISO 10350 for single points and ISO 11403 for multipoints.

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc.

Test temperatures are 23°C unless otherwise stated.

DuPont™, the DuPont Oval Logo, and all products, unless otherwise noted, denoted with ™, □ or ® are trademarks, service marks or registered trademarks of affiliates of DuPont de Nemours, Inc. © 2021 DuPont de Nemours, Inc. All rights reserved.

The information provided in this data sheet corresponds to our knowledge on the subject at the date of its publication.

This information may be subject to revision as new knowledge and experience becomes available.

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.

DuPont advises you to seek independent counsel for a freedom to practice opinion on the intended application or end-use of our products.

CAUTION: DO NOT USE DUPONT MATERIALS IN MEDICAL APPLICATIONS INVOLVING IMPLANTATION IN THE HUMAN BODY OR CONTACT WITH INTERNAL BODY FLUIDS OR TISSUES UNLESS THE MATERIAL HAS BEEN PROVIDED FROM DUPONT UNDER A WRITTEN CONTRACT THAT IS CONSISTENT WITH DUPONT POLICY REGARDING MEDICAL APPLICATIONS AND EXPRESSLY ACKNOWLEDGES THE CONTEMPLATED USE.

For further information, please contact your DuPont representative. You may also request a copy of DuPont POLICY Regarding Medical Applications... H-50103-5 and DuPont CAUTION Regarding Medical Applications... H-50102-5.