DuPont™ Delrin® SC699 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® SC699 is a lubricated low viscosity acetal homopolymer, developed for thin-walled parts requiring low wear and low friction and high precision moulding in the healthcare industry.

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

The below datasheet is a condensed version. For a complete datasheet, please contact 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	21	cm^3/10min	ISO 1133
Temperature	190	°C	ISO 1133
Load	2.16	kg	ISO 1133
Melt mass-flow rate	25	g/10min	ISO 1133
Moulding shrinkage, parallel	1.9	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.8	%	ISO 294-4, 2577
Mechanical properties	**Value**	**Unit**	**Test Standard**
Tensile Modulus	3100	MPa	ISO 527-1/-2
Yield stress	63	MPa	ISO 527-1/-2
Yield strain	15	%	ISO 527-1/-2
Nominal strain at break	30	%	ISO 527-1/-2
Flexural Modulus	3050	MPa	ISO 178
Flexural Stress at 3.5%	82	MPa	ISO 178
Charpy impact strength			ISO 179/1eU
23°C	160	kJ/m^2	
-30°C	175	kJ/m^2	
Charpy notched impact strength			ISO 179/1eA
23°C	6.5	kJ/m^2	
-30°C	7.5	kJ/m^2	
Hardness, Rockwell, M-scale	91	-	ISO 2039-2
Hardness, Rockwell, R-scale	119	-	ISO 2039-2
Coefficient of sliding friction, 1h against itself	0.1	-	ASTM 1894
Thermal properties	**Value**	**Unit**	**Test Standard**
Melting temperature, 10°C/min	178	°C	ISO 11357-1/-3
Temp. of deflection under load			ISO 75-1/-2
1.8 MPa	100	°C	
0.45 MPa	160	°C	
Coeff. of linear therm. expansion, parallel	100	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	105	E-6/K	ISO 11359-1/-2
Flammability	**Value**	**Unit**	**Test Standard**
Burning rate, Thickness 1 mm	28	mm/min	ISO 3795 (FMVSS 302)
Other properties	**Value**	**Unit**	**Test Standard**
Humidity absorption, 2mm	0.24	%	Sim. to ISO 62
Water absorption, 2mm	1	%	Sim. to ISO 62

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

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Density	1400	kg/m³	ISO 1183
Injection	**Value**	**Unit**	**Test Standard**
Drying Recommended	yes	-	-
Drying Temperature	≥80	°C	-
Drying Time, Dehumidified Dryer	2 - 4	h	-
Processing Moisture Content	≤0.05	%	-
Melt Temperature Optimum	215	°C	-
Min. melt temperature	210	°C	-
Max. melt temperature	220	°C	-
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	-
Annealing time, optional	30	min/mm	-
Annealing temperature	160	°C	-

Characteristics		
Processing	• Injection Moulding	
Delivery form	• Pellets	
Additives	• Lubricants	• Release agent

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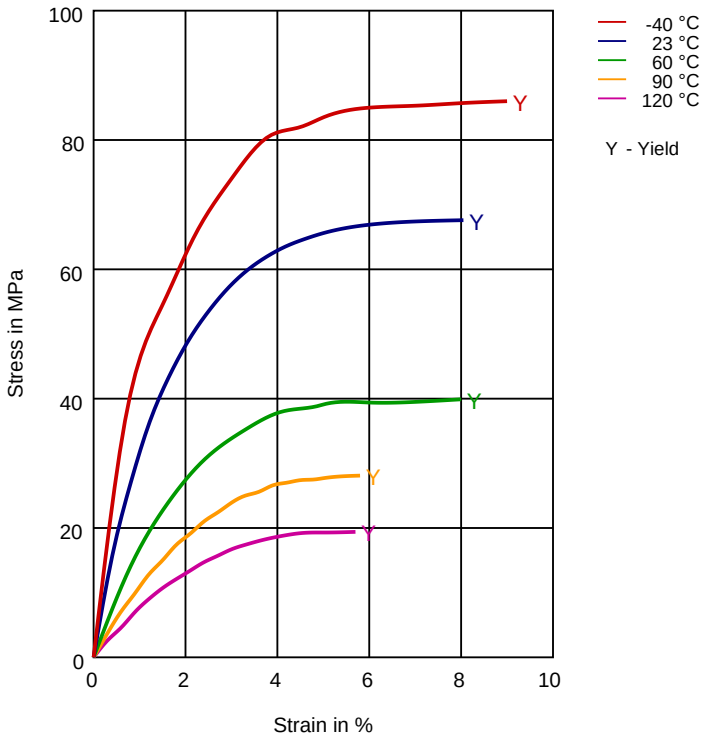
Diagrams

Stress-strain



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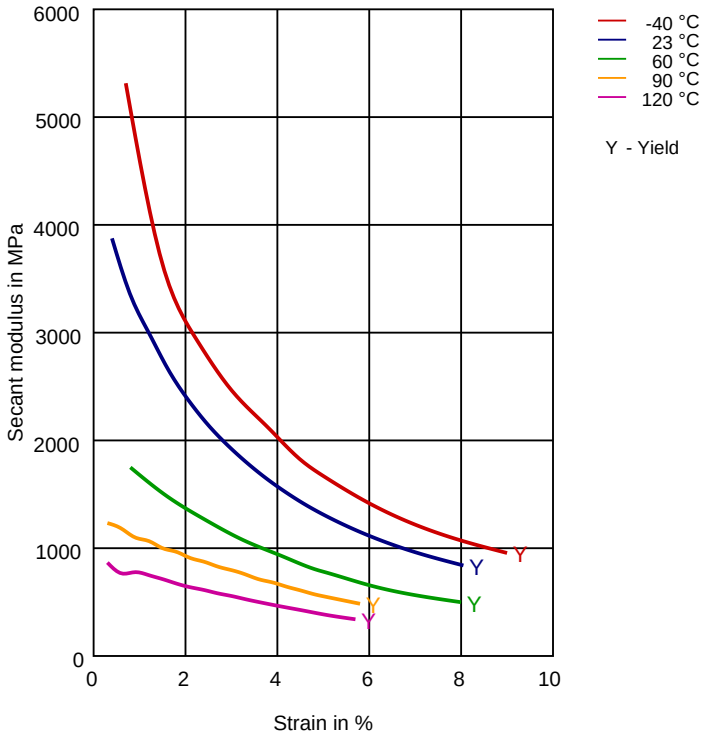
Secant modulus-strain



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 4.0mm (Hytrel® measured at 2 mm), IEC Electrical properties measured at 2.0mm, all ASTM properties measured at 3.2mm, and test temperatures are 23°C 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.

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