

# DATASHEET

## DELTRIN

Delrin provides a higher mechanical strength, stiffness, hardness and creep resistance as well as a lower thermal expansion rate and often also a better wear resistance than the acetal copolymer.

### Applications

- Bearings
- Electrical Components
- Structural Keels
- Gears
- Rollers

### Availability

- Colour – Black & Natural
- Type – Sheets, Rods & Tubes
- Regularly produced in a wide variety of thicknesses

### Typical Properties

General Properties	Method	Unit	Test Result
<b>Physical Properties</b>			
Colour	-	-	Natural/Black
Density	ISO 1183-1	g/cm <sup>3</sup>	1.43
Water Absorption:			
- After 24/96h immersion in water of 23°C	ISO 62	mg	18/36
- After 24/96h immersion in water of 23°C	ISO 62	%	0.21/0.43
- At saturation in air of 23°C / 50% RH	-	%	0.20
- At saturation in water of 23°C	-	%	0.80
<b>Thermal Properties</b>			
Melting Temperature (DSC, 10°C/min)	ISO 11357 – 1/-3	°C	180
Glass Transition Temperature (DSC, 10°C/min)	ISO 11357 – 1/-2	°C	-
Thermal Conductivity at 23°C	-	W/(K.m)	0.31
Coefficient of Linear Thermal Expansion:			
- Average value between 23 and 60°C	-	W/(K.m)	95x10 <sup>-6</sup>
- Average value between 23 and 100°C	-	W/(K.m)	110x10 <sup>-6</sup>
Temperature of Deflection Under Load:			
- Method A: 1.8 MPa	ISO 75-1/-2	°C	110
Max Allowable Service Temperature in Air:			
- For short periods	-	°C	150
- Continuously: for 5,000 to 20,000h	-	°C	105/90
Minimum Service Temperature	-	°C	-50
Flammability:			
- Oxygen Index	ISO 4589-1/-2	%	15
- According to UL94 (3/6mm thickness)	-	-	HB/HB

<b>Mechanical Properties</b>			
Tension Test:			
- Tensile Stress at Yield	ISO 527-1/-2	MPa	NYP/78
- Tensile Stress at Break	ISO 527-1/-2	MPa	NYP/78
- Tensile Strength	ISO 527-1/-2	MPa	78
- Tensile Strain at Yield	ISO 527-1/-2	%	NYP
- Tensile Strain at Break	ISO 527-1/-2	%	25
- Tensile Modulus of Elasticity	ISO 527-1/-2	MPa	3700
Compression Test:			
- Compressive Stress @ 1/2/5% Nominal Strain	ISO 604	MPa	29 / 49 / 85
Charpy Impact Strength - Unnotched	ISO 179-1-1eU	kJ/m <sup>2</sup>	No break
Charpy Impact Strength - Notched	ISO 179-1-1eU	kJ/m <sup>2</sup>	10
Ball Indentation Hardness	ISO 2039-1	N/mm <sup>2</sup>	160
Rockwell Hardness	ISO 2039-2	-	M 88
<b>Electrical Properties</b>			
Electric Strength	EC 60243-1	kV/mm	20
Volume Resistivity	IEC 60093	Ohm.cm	10 (14)
Surface Resistivity	IEC 60093	Ohm	10 (13)
Relative Permittivity – at 100 Hz	IEC 60250	-	3.8
Relative Permittivity – at 1MHz	IEC 60250	-	3.8
Dielectric Dissipation Factor – at 100 Hz	IEC 60250	-	0.003
Dielectric Dissipation Factor – at 1 MHz	IEC 60250	-	0.008
Comparative Tracking Index	IEC 60112	-	600