DATASHEET

ACETAL

Acetal provides high strength and stiffness coupled with enhanced dimensional stability and ease of machining. As a semi-crystalline material, acetal is also characterised by a low coefficient of friction and good wear properties, especially in wet environments.

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
Physical Properties			
Colour	-	-	
Density	ISO 1183-1	g/cm2	1.41
Water Absorption:			
- After 24/96h immersion in water of 23°C	ISO 62	mg	20 / 37
- After 24/96h immersion in water of 23°C	ISO 62	%	0.24 / 0.45
- At saturation in air of 23°C / 50% RH	-	%	0.20
- At saturation in water of 23°C	-	%	0.80
Thermal Properties			
Melting Temperature (DSC, 10°C/min)	ISO 11357 – 1/-3	°C	165
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)	110 x 10
- Average value between 23 and 100°C	-	W/(K.m)	125 x 10
Temperature of Deflection Under Load:			
- Method A: 1.8 MPa	ISO 75-1/-2	°C	100
Max Allowable Service Temperature in Air:			
- For short periods	-	°C	140
- Continuously: for 5,000 to 20,000h	-	°C	115 / 100
Minimum Service Temperature	-	°C	-50
Flammability:			
- Oxygen Index	ISO 4589-1/-2	%	15

- According to UL94 (3/6mm thickness)	-	-	HB / HB
Mechanical Properties			
Tension Test:			
- Tensile Stress at Yield	ISO 527-1/-2	MPa	66 / -
- Tensile Stress at Break	ISO 527-1/-2	MPa	66 / -
- Tensile Strength	ISO 527-1/-2	MPa	66
- Tensile Strain at Yield	ISO 527-1/-2	%	20
- Tensile Strain at Break	ISO 527-1/-2	%	50
- Tensile Modulus of Elasticity	ISO 527-1/-2	MPa	2800
Compression Test:			
- Compressive Stress @ 1/2/5% Nominal Strain	ISO 604	MPa	23 / 40 / 72
Charpy Impact Strength - Unnotched	ISO 179-1-1eU	kJ/m2	No break
Charpy Impact Strength - Notched	ISO 179-1-1eU	kJ/m2	8
Ball Indentation Hardness	ISO 2039-1	N/mm2	140
Rockwell Hardness	ISO 2039-2	-	M 84
Electrical Properties			
Electric Strength	EC 60243-1	kV/mm	20
Volume Resistivity	IEC 60093	Ohm.cm	> 10
Surface Resistivity	IEC 60093	Ohm	> 10
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