

DATASHEET

SEMITRON ESd 500HR

Reinforced with a proprietary synthetic mica, Semitron ESd 500HR offers an excellent combination of low frictional properties, good dimensional stability, and electrostatic dissipation. Whenever virgin PTFE causes electrical discharge problems, Semitron ESd 500HR will provide controlled bleed-off of static charges while maintaining typical PTFE properties such as broad chemical resistance and low coefficient of friction.

Applications

- Wafer Combs
- Handling Trays
- Inserts
- IC Device Testing Fixtures

Availability

- Colour – White
- Type – Sheets & Rods
- Regularly produced in a wide variety of thicknesses

Typical Properties

General Properties	Method	Unit	Test Result
Physical Properties			
Colour	-	-	White
Density	ISO 1183-1	g/cm ²	2.3
Water Absorption:			
- After 24h immersion in water of 23°C	ISO 62	mg	0.00
- At saturation in water of 23°C	-	%	1 – 2
Thermal Properties			
Melting Temperature (DSC, 10°C/min)	ISO 11357 – 1/-3	°C	327
Glass Transition Temperature (DSC, 10°C/min)	ISO 11357 – 1/-2	°C	-
Thermal Conductivity at 23°C	-	W/(K.m)	-
Coefficient of Linear Thermal Expansion:			
- Average value between 23 and 100°C	-	W/(K.m)	85x10 ⁻⁶
- Average value between 23 and 150°C	-	W/(K.m)	90x10 ⁻⁶
- Average value above 150°C	-	W/(K.m)	155x10 ⁻⁶
Temperature of Deflection Under Load:			
- Method A: 1.8 MPa	ISO 75-1/-2	°C	100
Max Allowable Service Temperature in Air:			
- Continuously: for 5,000 to 20,000h	-	°C	260
Minimum Service Temperature	-	°C	-50

Flammability:			
- According to UL94 (3/6mm thickness)	-	-	V-0
Mechanical Properties			
Tension Test:			
- Tensile Strength	ISO 527-1/-2	MPa	10
- Tensile Strain at Yield	ISO 527-1/-2	%	4
- Tensile Strain at Break	ISO 527-1/-2	%	>50
- Tensile Modulus of Elasticity	ISO 527-1/-2	MPa	1450
Flexural Test:			
- Flexural Strength	ISO 178	MPa	14
- Flexural Modulus of Elasticity	ISO 178	MPa	-
Compression Test:			
- Compressive Stress @ 1/2/5% Nominal Strain	ISO 604	MPa	10.5/15/20
Charpy Impact Strength - Unnotched	ISO 179-1-1eU	kJ/m ²	30
Charpy Impact Strength - Notched	ISO 179-1-1eU	kJ/m ²	7.5
Rockwell Hardness	ISO 2039-2	-	50
Dynamic Coefficient of Friction	ISO 7148-2(15)	-	-
Wear Rate	ISO 7148-2(15)	Um/km	-
Electrical Properties			
Electric Strength	EC 60243-1	kV/mm	-
Volume Resistivity	IEC 60093	Ohm.cm	10E10 – 10E12
Surface Resistivity	IEC 60093	Ohm	10E10 – 10E12
Relative Permittivity – at 1MHz	IEC 60250	-	3.10
Dielectric Dissipation Factor – at 1 MHz	IEC 60250	-	0.075