

# DATASHEET

## SEMITRON ESd 410C

Having an excellent mechanical performance up to 210°C, Semitron ESd 410C provides ESd-solutions at higher temperatures. Additionally, Semitron ESd 410C exhibits excellent dimensional stability (low coefficient of linear thermal expansion and small water absorption), ideal for handling equipment in the electrical or semiconductor industries.

### Applications

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

### Availability

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

### Typical Properties

General Properties	Method	Unit	Test Result
<b>Physical Properties</b>			
Colour	-	-	Black
Density	ISO 1183-1	g/cm <sup>2</sup>	1.41
Water Absorption:			
- After 24h immersion in water of 23°C	ISO 62	mg	
- At saturation in water of 23°C	-	%	1.10
<b>Thermal Properties</b>			
Melting Temperature (DSC, 10°C/min)	ISO 11357 – 1/-3	°C	-
Glass Transition Temperature (DSC, 10°C/min)	ISO 11357 – 1/-2	°C	215
Thermal Conductivity at 23°C	-	W/(K.m)	0.35
Coefficient of Linear Thermal Expansion:			
- Average value between 23 and 100°C	-	W/(K.m)	40x10 <sup>-6</sup>
- Average value between 23 and 150°C	-	W/(K.m)	40x10 <sup>-6</sup>
- Average value above 150°C	-	W/(K.m)	45x10 <sup>-6</sup>
Temperature of Deflection Under Load:			
- Method A: 1.8 MPa	ISO 75-1/-2	°C	200
Max Allowable Service Temperature in Air:			
- Continuously: for 5,000 to 20,000h	-	°C	170
Minimum Service Temperature	-	°C	-20
Flammability:			

- According to UL94 (3/6mm thickness)	-	-	V-0
<b>Mechanical Properties</b>			
Tension Test:			
- Tensile Strength	ISO 527-1/-2	MPa	62
- Tensile Strain at Yield	ISO 527-1/-2	%	-
- Tensile Strain at Break	ISO 527-1/-2	%	2
- Tensile Modulus of Elasticity	ISO 527-1/-2	MPa	5850
Flexural Test:			
- Flexural Strength	ISO 178	MPa	80
- Flexural Modulus of Elasticity	ISO 178	MPa	
Compression Test:			
- Compressive Stress @ 1/2/5% Nominal Strain	ISO 604	MPa	44/76/114
Charpy Impact Strength - Unnotched	ISO 179-1-1eU	kJ/m <sup>2</sup>	20
Charpy Impact Strength - Notched	ISO 179-1-1eU	kJ/m <sup>2</sup>	4
Rockwell Hardness	ISO 2039-2	-	115
Dynamic Coefficient of Friction	ISO 7148-2(15)	-	-
Wear Rate	ISO 7148-2(15)	Um/km	-
<b>Electrical Properties</b>			
Electric Strength	EC 60243-1	kV/mm	-
Volume Resistivity	IEC 60093	Ohm.cm	10 <sup>4</sup> – 10 <sup>6</sup>
Surface Resistivity	IEC 60093	Ohm	10E <sup>4</sup> – 10E <sup>6</sup>
Relative Permittivity – at 1MHz	IEC 60250	-	3.00
Dielectric Dissipation Factor – at 1 MHz	IEC 60250	-	0.002