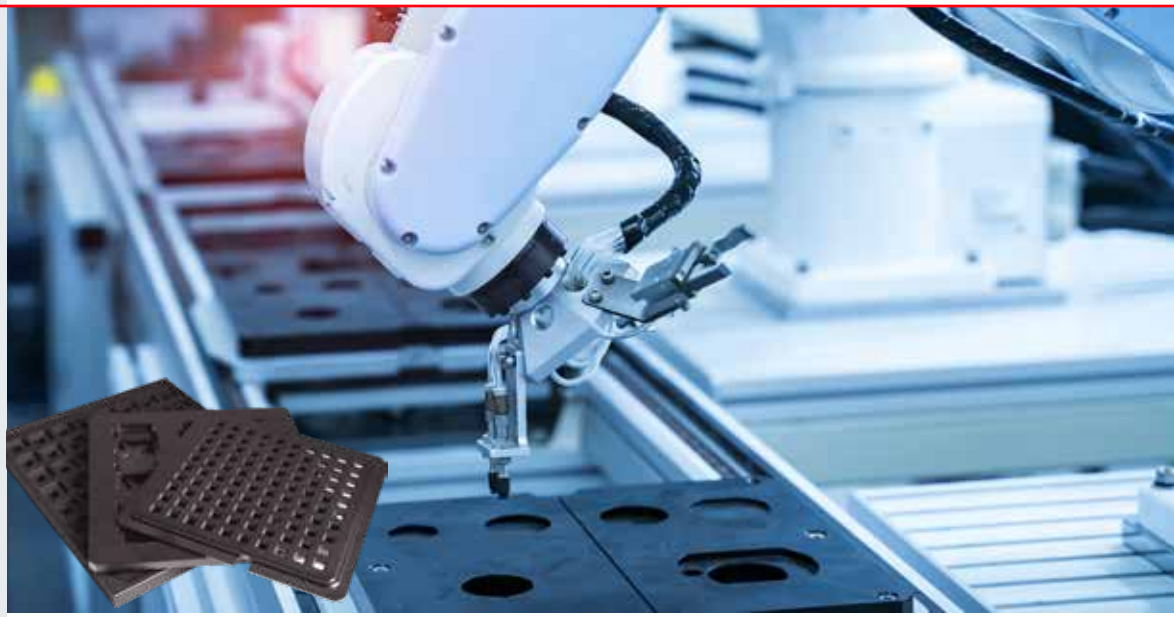
Semitron® CNT POM-C



Key benefits

- Flexural modulus of 350,000 psi with an HDT of 225 at 264 psi
- Extremely low moisture absorption of 0.25% at 24 hours and 0.75% at saturation

Common applications

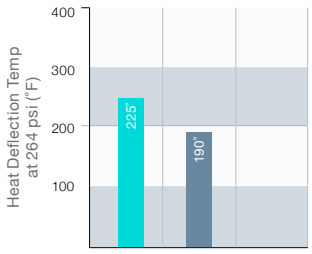
- Integrated chip testjigs
- Basic electronics assembly fixturing
- Basic test sockets & PCB test jigs

Static dissipative high performance extruded acetal copolymer

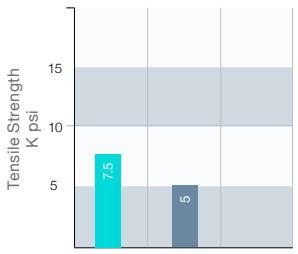
Competitive advantage

Semitron® POM CNT is an extruded static dissipative POM-C based polymer system developed specifically for electronic fixture applications that require a precise surface resistivity range yet offering increased dimensional stability vs conventional POM ESd products.

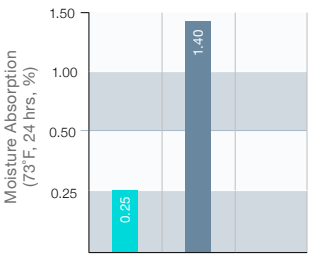
Thermal



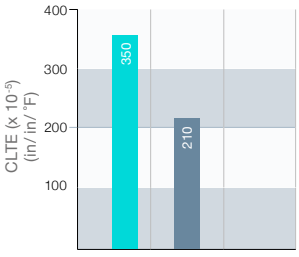
Strength

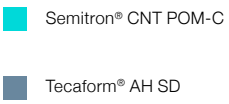


Moisture



Flexural





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Semitron® CNT POM-C

Semitron® CNT Polyoxymethylene POM-C is an extruded carbon nano tube-filled grade, developed specifically for electronic fixture applications that require a precise surface resistivity range, yet offer increased dimensional stability versus conventional POM ESd products. In addition to these properties, Semitron® CNT POM-C also offers superior stiffness and strength, while also maintaining an extremely low moisture absorption rate of 0.25% at 24 hour, and 0.75% at saturation. Furthermore, this grade in particular can be found throughout the semiconductor and electronics industry as integrated chip test jigs, test sockets, PCB test jigs, and in basic electronics assembly fixturing applications.

		ISO*			ASTM*		
		Test methods	Units	Indicative values	Test methods	Units	Indicative values
Thermal Properties (1)	Melting temperature (DSC, 10°C (50°F) / min)	ISO 11357-1/-3	°C	-	ASTM D3418	°F	335
	Glass transition temperature (DMA, tan delta)	DMA	°C	-	DMA	°F	-
	Thermal conductivity at 23°C (73°F)	-	W/(K.m)		-	BTU in./(hr.ft².°F)	
	Coefficient of linear thermal expansion (-40 to 150 °C) (-40 to 300°F)				ASTM E-831 (TMA)	µin./in./°F	76
	Coefficient of linear thermal expansion (23 to 60°C) (73°F to 140°F)	-	µm/(m.K)				
	Coefficient of linear thermal expansion (23 to 100°C) (73°F to 210°F)	-	µm/(m.K)				
	Heat Deflection Temperature: method A: 1.8 MPa (264 PSI)	ISO 75-1/-2	°C	-	ASTM D648	°F	225
	Continuous allowable service temperature in air (20.000 hrs) (3)	-	°C	-	-	°F	180
	Min. service temperature (4)	-	°C	-	-	°F	-
	Flammability: UL 94 (3 mm (1/8 in.)) (5)	-	-	HB	-	-	HB
	Flammability: Oxygen Index	ISO 4589-1/-2	%				
Mechanical Properties (6)	Tensile strength	ISO 527-1/-2 (7)	MPa	-	ASTM D638 (8)	PSI	7,500
	Tensile strain (elongation) at yield	ISO 527-1/-2 (7)	%	-	ASTM D638 (8)	%	-
	Tensile strain (elongation) at break	ISO 527-1/-2 (7)	%		ASTM D638 (8)	%	15
	Tensile modulus of elasticity	ISO 527-1/-2 (9)	MPa	-	ASTM D638 (8)	KSI	340
	Shear Strength	ASTM D732	MPa	-	ASTM D732	PSI	-
	Compressive stress at 1 / 2 / 5 % nominal strain	ISO 604 (10)	MPa				
	Compressive strength				ASTM D695 (11)	PSI	10,500
	Charpy impact strength - unnotched	ISO 179-1/1eU	kJ/m²				
	Charpy impact strength - notched	ISO 179-1/1eA	kJ/m²				
	Izod Impact notched				ASTM D256	ft.lb./in	1.00
	Flexural strength	ISO 178 (12)	MPa	-	ASTM D790 (13)	PSI	9,500
	Flexural modulus of elasticity	ISO 178 (12)	MPa	-	ASTM D790	KSI	350
	Rockwell M hardness (14)	ISO 2039-2	-		ASTM D785	-	71
	Shore hardness D (14)	ISO 868	-	-	ASTM D2240	-	82
Electrical Properties	Electric strength	IEC 60243-1 (15)	kV/mm	-	ASTM D149	Volts/mil	-
	Volume resistivity	IEC 62631-3-1	Ohm.cm		IEC 60093	Ohm.cm	
	Surface resistivity	ANSI/ESD STM 11.11	Ohm/sq.		ANSI/ESD STM 11.11	Ohm/sq.	10E5-10E8
	Dielectric constant at 1 MHz	IEC 62631-2-1	-	-	ASTM D150	-	-
	Dissipation factor at 1 MHz	IEC 62631-2-1	-	-	ASTM D150	-	-
Miscellaneous	Colour	-	-	Black	-	-	Black
	Density	ISO 1183-1	g/cm³	-			
	Specific Gravity				ASTM D792	-	1.39
	Water absorption after 24h immersion in water of 23°C (73°F)	ISO 62 (16)	%		ASTM D570 (17)	%	0.25
	Water absorption at saturation in water of 23 °C (73°F)	-	%		ASTM D570 (17)	%	0.75
	Wear rate	ISO 7148-2 (18)	µm/km	-	QTM 55010 (19)	$in^3.min/ft.lbs.hrx10^{-10}$	-
	Dynamic Coefficient of Friction (-)	ISO 7148-2 (18)	-		QTM 55007 (20)	-	-
	Limiting PV at 100 FPM				QTM 55007 (21)	ft.lbs/in².min	-
	Limiting PV at 0.1 / 1 m/s cylindrical sleeve bearings	-	Mpa.m/s	- / -			
	Chemical Resistance	https://www.mcam.com/en/support/chemical-resistance-information/			https://www.mcam.com/en/support/chemical-resistance-information/		

Note: 1 g/cm³ = 1,000 kg/m³ ; 1 MPa = 1 N/mm² ; 1 kV/mm = 1 MV/m NYP: there is no yield point

*This table, mainly to be used for comparison purposes, is a valuable help in the choice of a material. The data listed here fall within the normal range of product properties of dry material. However, they are not guaranteed and they should not be used to establish material specification limits nor used alone as the basis of design. This product data sheet and any data and specifications presented on our website shall provide promotional and general information about the Engineering Plastic Products (the "Products") manufactured and offered by Mitsubishi Chemical Advanced Materials and shall serve as a preliminary guide. All data and descriptions relating to the Products are of an indicative nature only. Neither this data sheet nor any data and specifications presented on our website shall create or be implied to create any legal or contractual obligation.

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