

# Quadrant EPP Semitron® ESd 420

Polyether Imide

Quadrant Engineering Plastic Products

## Message:

Semitron ESd 420 is part of the Quadrant EPP family of products designed for use in the semiconductor industry, where electrostatic dissipation is a requirement. It is a compression-molded material that performs at temperatures to 410 and is designed for applications currently in PEI or PES, but where protection from static discharge is required.

General Information			
Additive	Antistatic		
Features	Alcohol Resistant		
	Antistatic		
	Medium Heat Resistance		
	Semi Conductive		
Uses	Electrical/Electronic Applications		
Processing Method	Compression Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.34	g/cm <sup>3</sup>	ASTM D792
Water Absorption			ASTM D570
	24 hr	0.50	%
Saturation	2.9	%	
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (M-Scale)	118		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	4410	MPa	ASTM D638
Tensile Strength (Ultimate)	79.3	MPa	ASTM D638
Tensile Elongation (Break)	2.0	%	ASTM D638
Flexural Modulus	4480	MPa	ASTM D790
Flexural Strength (Yield)	100	MPa	ASTM D790
Compressive Modulus	2550	MPa	ASTM D695
Compressive Strength (10% Strain)	164	MPa	ASTM D695
Shear Strength	55.3	MPa	ASTM D732
Coefficient of Friction (vs. Steel - Static)	0.28		Internal Method
Wear Factor	200	10 <sup>-8</sup> mm <sup>3</sup> /N·m	ASTM D3702
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact	53	J/m	ASTM D256A
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (1.8 MPa, Unannealed)	210	°C	ASTM D648

Maximum Use Temperature - Long Term, Air	171	°C	
Limiting Pressure Velocity <sup>1</sup>	0.333	MPa·m/s	Internal Method
Glass Transition Temperature	210	°C	ASTM D3418
CLTE - Flow <sup>2</sup> (-40 to 149°C)	3.5E-5	cm/cm/°C	ASTM E831
Thermal Conductivity	0.22	W/m/K	ASTM F433
<b>Electrical</b>	<b>Nominal Value</b>	<b>Unit</b>	<b>Test Method</b>
Surface Resistivity <sup>3</sup>	1.0E+6 to 1.0E+9	ohms	Internal Method
Dielectric Constant (1 MHz)	5.63		ASTM D150
Dissipation Factor (1 MHz)	0.27		ASTM D150
<b>Flammability</b>	<b>Nominal Value</b>	<b>Unit</b>	<b>Test Method</b>
Flame Rating (3.18 mm, Estimated Rating)	V-0		UL 94

<b>NOTE</b>			
1.	4:1 safety factor		
2.	68°F		
3.	EOS/ESD S11.11		

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