Duratron® T4501

Polyamide-imide

Quadrant Engineering Plastic Products

Message:

Duratron® T4501 compression molded PAI is well suited for general purpose wear and friction parts. It has a higher compressive strength and can therefore carry more load than Duratron® T4540. It is similar in composition to Torlon 4301 PAI, and selected when larger shapes are required.
Duratron® PAI is the highest performing melt processable plastic. It has superior resistance to elevated temperatures. It is capable of performing under severe stress conditions at continuous temperatures to 500°F (260°C). Parts machined from Duratron® stock shapes provide greater compressive strength and higher impact resistance than most advanced engineering plastics. Its extremely low coefficient of linear thermal expansion and high creep resistance deliver excellent dimensional stability over its entire use range. Duratron® PAI is an amorphous material with a Tg (glass transition temperature) of 537°F (280°C).
Data provided by Quadrant Engineering Plastic Products from tests on stock shapes and parts produced by Quadrant EPP.

General Information	
Features	Acid Resistant
	Alcohol Resistant
	Amorphous
	Good Chemical Resistance
	Good Compressive Strength
	Good Creep Resistance
	Good Dimensional Stability
	Good Stiffness
	Good Thermal Stability
	Good Wear Resistance
	High Impact Resistance
	High Strength
	Hydrocarbon Resistant
	Solvent Resistant
Uses	Bearings
	Bushings
	Seals
Forms	Customizable Forms
	Disc
	Preformed Parts
	Rod
	Tubing
Processing Method	Compression Molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.45	g/cm³	ASTM D792

Water Absorption			ASTM D570
24 hr	0.30	%	
Saturation	1.5	%	
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness			ASTM D785
E-Scale	70		
M-Scale	106		
Durometer Hardness (Shore D)	90		ASTM D2240
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	3030	MPa	ASTM D638
Tensile Strength (Ultimate)	68.9	MPa	ASTM D638
Tensile Elongation (Break)	3.0	%	ASTM D638
Flexural Modulus	4480	MPa	ASTM D790
Flexural Strength (Yield)	138	MPa	ASTM D790
Compressive Modulus	2480	MPa	ASTM D695
Compressive Strength (10% Strain)	110	MPa	ASTM D695
Coefficient of Friction (vs. Steel - Static)	0.20		Internal Method
Wear Factor	9.1	10^-8 $mm^3/N \cdot m$	ASTM D3702
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact	27	J/m	ASTM D256A
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (1.8 MPa, Unannealed)	279	°C	ASTM D648
Maximum Use Temperature - Long Term, Air	260	°C	
Limiting Pressure Velocity [1]	0.788	MPa·m/s	Internal Method
Glass Transition Temperature	275	°C	ASTM D3418
CLTE - Flow [2] (-40 to 149°C)	3.6E-5	cm/cm/°C	ASTM E831
Thermal Conductivity	0.53	W/m/K	ASTM F433
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity [3]	> 1.0E+13	ohms	Internal Method
Dielectric Constant (1 MHz)	6.00		ASTM D150
Dissipation Factor (1 MHz)	0.042		ASTM D150
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating (3.18 mm, Estimated Rating)	V-0		UL 94
NOTE			
1.	4:1 safety factor		
2.	68°F		
3.	EOS/ESD S11.11		

Recommended distributors for this material

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