Duratron® T4301 (EXTRUSION)

Polyamide-imide

Quadrant Engineering Plastic Products

Message:

Duratron® T4301 extruded PAI is primarily used for wear and friction parts. It offers a very low expansion rate, low coefficient of friction and exhibits little or no slip-stick in use. Duratron® T4301's flexural modulus of 1,000,000 psi is higher than most other advanced engineering plastics. This grade excels in severe service wear applications such as non-lubricated bearings, seals, bearing cages and reciprocating compressor parts.

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 ® PAI 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).

Quadrant EPP's extruded Duratron® stock shapes are post-cured using the latest technology and procedures developed jointly by Amoco Performance Products and Quadrant EPP eliminating the need for additional curing by the end user in most situations. A post-curing cycle is recommended for components fabricated from extruded shapes where optimization of chemical resistance and/or wear performance is required. 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
	Alkali Resistant
	Amorphous
	Electrically Insulating
	Good Chemical Resistance
	Good Compressive Strength
	Good Creep Resistance
	Good Stiffness
	Good Thermal Stability
	Good Wear Resistance
	High Strength
	Hydrocarbon Resistant
	Low Friction
	Solvent Resistant
Uses	Bearings
	Bushings
	Electrical Parts
	Profiles
	Pump Parts
	Sealing Devices
	Seals
Forms	Customizable Forms
	Preformed Parts

Profiles Rod Sheet

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Processing Method	Extrusion		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.45	g/cm³	ASTM D792
Water Absorption			ASTM D570
24 hr	0.40	%	
Saturation	1.5	%	
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
E-Scale	70		
M-Scale	106		
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	6210	MPa	ASTM D638
Tensile Strength (Ultimate)	103	MPa	ASTM D638
Tensile Elongation (Yield)	3.0	%	ASTM D638
Flexural Modulus	5520	MPa	ASTM D790
Flexural Strength (Yield)	159	MPa	ASTM D790
Compressive Modulus	6550	MPa	ASTM D695
Compressive Strength (10% Strain)	152	MPa	ASTM D695
Shear Strength	113	MPa	ASTM D732
Coefficient of Friction (vs. Steel - Static)	0.20		Internal Method
Wear Factor	20	10^-8 mm³/N·m	ASTM D3702
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact	43	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)	2.5E-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)	0.037		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

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