

Tolron® Material Specifications

Tolron® has superior resistance to elevated temperatures. It is capable of performing under severe stress conditions at continuous temperatures to 500°F (260°C). Tolron® has extremely low coefficient of linear thermal expansion.

Physical Properties	Units	Test	4203	4301	5030	5530
Density	lb/in ³	D792	0.051	0.052	-	0.059
	g/cm ³		1.41	1.45	-	1.61
Water Absorption, 24 hrs.	%	D570	0.4	0.4	0.3	0.3
Water Absorption, Saturation	%	D570	-	-	1.5	-

Mechanical Properties	Units	Test	4203	4301	5030	5530
Tensile Strength	psi	D638	18,000	12,000	23,000	15,000
Tensile Modulus	psi	D638	600,000	800,000	1,000,000	900,000
Tensile Elongation at Break	%	D638	10	3	4	3
Flexural Strength	psi	D790	24,000	23,000	30,000	20,000
Flexural Modulus	psi	D790	600,000	800,000	980,000	900,000
Compressive Strength	psi	D695	24,000	22,000	40,000	27,000
Compressive Modulus	psi	D695	700,000	950,000	700,000	600,000
Hardness Rockwell	-	D785	M120 (E80)	M106 (E70)	M125 (E90)	M125 (E85)
Izod Impact Notched	ft-lb/in	D256	2.0	0.8	1.0	0.7

Thermal Properties	Units	Test	4203	4301	5030	5530
Coefficient of Linear Thermal Expansion	X 10 ⁻⁵ in./in./°F	D696	1.7	1.4	-	2.6
		E831	-	-	0.9 x 10 ⁻⁵ F ⁻¹	-
Heat Deflection Temperature	@264 psi °F/°C	D648	532 / 278	534 / 279	532 / 278	520 / 271
Melting Temperature	°F/°C	D3418	527 / 275	527 / 275	527 / 275	527 / 275
Max. Operating Temperature	°F/°C	-	500 / 260	500 / 260	-	500 / 260
Thermal Conductivity	BTU- in/ft ² -hr.-°F x 10 ⁻⁴ cal/cm-sec-°C	C177	1.80	3.70	-	2.50
			6.20	12.8	-	8.61
Flammability Rating	-	UL94	V - 0	V - 0	-	V - 0

Electrical Properties	Units	Test	4203	4301	5030	5530
Dielectric Strength	(V/mil) short time, 1/8" thick	D149	580	-	-	700
Dielectric Constant	@1 MHz	D150	4.2	6.0	-	6.3
Dissipation Factor	@1 MHz	D150	0.026	0.037	-	0.022
Volume Resistivity	Ohm-cm @50% RH	D257	> 10 ¹⁶	> 10 ¹³	-	> 10 ¹³

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