

Technical Data Sheet

NanoTool Material

For the SLA process

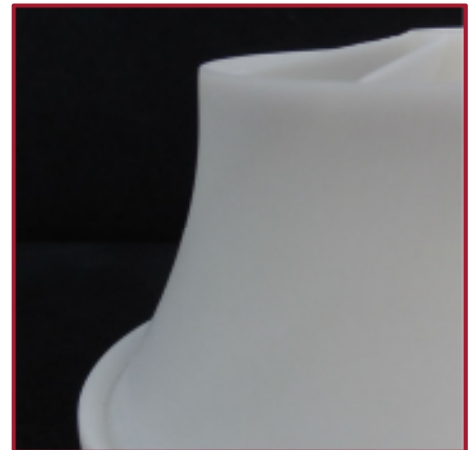


Features, benefits and applications

- Rigid parts are ideal for Formula One wind tunnel testing
- High heat deflection temperature
- White colour with a smooth surface quality
- Rapid tooling for injection moulding

Machines

- Available on SLA 7000 machines



Liquid Properties	
Appearance	Off White
Viscosity	~2,500 cps @ 30°C
Density	~1.65 g/cm ³ @ 25°C

Optical Properties		
Ec	8.3 mJ/cm ²	[critical exposure]
Dp	4.3 mils	[slope of cure-depth vs. ln (E) curve]
E10	84 mJ/cm ²	[exposure that gives 0.254mm (0.010) inch thickness]

Mechanical Properties		NanoTool UV Postcure		UV & Thermal Postcure	
ASTM Method	Property Description	Metric	Imperial	Metric	Imperial
D638M	Tensile Strength	61.7 - 78.0 MPa	8.9 - 11.3 ksi	66.3 - 80.3 MPa	9.6 - 11.6 ksi
D638M	Tensile Modulus	11,000 - 11,400 MPa	1,590 - 1,650 ksi	10,400 - 11,200MPa	1,510 - 1,620 ksi
D638M	Elongation at Break	0.7 - 1.0%	0.7 - 1.0%	0.7 - 1.0%	0.7 - 1.0%
D638M	Poisson's Ratio	0.34 - 0.38	0.34 - 0.38	0.29 - 0.36	0.29 - 0.36
D790M	Flexural Strength	79 - 121 MPa	11.5 - 17.5 ksi	103 - 149 MPa	14.9 - 21.6 ksi
D790M	Flexural Modulus	10,200 - 10,800 MPa	1,480 - 1,570 ksi	9,960 - 10,200 MPa	1,440 - 1,480 ksi
D256A	Izod Impact (Notched)	0.12 - 0.15 J/cm	0.23 - 0.29 ft-lb/in	0.14 - 0.16 J/cm	0.26 - 0.31 ft-lb/in
D2240	Hardness (Shore D)	94	93 - 95	94	93 - 94
D570-98	Water Absorbtion	0.23%	0.23%	0.15 - 0.16%	0.15 - 0.16%

Got a question? Need more technical data?

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Thermal/Electrical Properties		NanoTool UV Postcure		UV & Thermal Postcure	
ASTM Method	Property Description	Metric	Imperial	Metric	Imperial
E831-05	C.T.E. -40 - 0°C (-40 - 32°F)	25.3 - 26.0 µm/m°C	14.1 - 14.4 µin/in°F	25.0 - 25.7 µm/m°C	13.9 - 14.3 µin/in°F
E831-05	C.T.E. 0 - 50°C (32 - 122°F)	30.4 - 32.4 µm/m°C	16.9 - 18.0 µin/in°F	25.5 - 31.3 µm/m°C	14.2 - 17.4 µin/in°F
E831-05	C.T.E. 50 - 100°C (122 - 212°F)	75.9 - 87.4 µm/m°C	42.2 - 48.6 µin/in°F	57.0 - 58.9 µm/m°C	31.7 - 32.7 µin/in°F
E831-05	C.T.E. 100 - 150°C (212 - 302°F)	90.0 - 95.7 µm/m°C	50.1 - 53.2 µin/in°F	95.2 - 99.6 µm/m°C	52.9 - 55.3 µin/in°F
D150-98	Dielectric Constant 60Hz	4.0	4.0	3.9	3.9
D150-98	Dielectric Constant 1 KHz	3.9	3.8 - 3.9	3.8	3.8
D150-98	Dielectric Constant 1 MHz	3.6	3.6 - 3.7	3.6	3.6
D149-97A	Dielectric Strength	15.6 - 16.8 kV/mm	396 - 427 V/mil	16.1 - 16.9 kV/mm	408 - 428 V/mil
E1545-00	Tg	57 - 62°C	135 - 144°F	86 - 89°C	187 - 192°F
D648	HDT @ 0.46MPa (66 psi)	225°C	437°F	258 - 263°C	496 - 506°F
D648	HDT @ 1.81 MPa (264 psi)	85 - 90°C	185 - 193°F	104°C	220°F

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