

DuPont™ Nomex® Type 994-NPT

PRELIMINARY TECHNICAL DATA SHEET

DuPont™ Nomex® Type 994-NPT is a recent development from DuPont.

Type 994-NPT pressboard is available in three thicknesses, ranging from 1.0 to 2.0 mm. The small sheet size previously available for Type 994 (355 x 1500 mm [14 x 59 in.]) limited the applications where this product could be economically applied.

DuPont recently completed a new, patent-pending process that enables the production of larger sheets with similar properties to those produced with our original process, which was developed in the 1980s. For these three thicknesses of pressboard, the new sheet size will be 730 x 2200 mm (29 x 86.5 in.).

Table I shows a comparison of some of the mechanical properties for Type 994-NPT and Type 994. **Table II** compares electrical properties of Type 994-NPT and Type 994 in mineral oil. Material from the new process is expected to meet all specifications from the existing process.

Table I – Mechanical Properties in Air

Property	T994	T994-NPT	T994	T994-NPT	T994	T994-NPT	Test Method
Nominal Thickness (mm)	1.0	1.0	1.5	1.5	2.0	2.0	
Tensile Strength, MD (MPa)	110	140	110	120	110	120	ASTM D828
Tensile Strength, XD (MPa)	90	90	80	100	80	100	ASTM D828
Elongation, MD (%)	21	15	16	13	16	12	ASTM D828
Elongation, XD (%)	20	15	15	14	15	13	ASTM D828
Shear Strength (MPa)	130	130	120	120	110	110	ASTM D732
Compressibility (%)	1.7	1.2	1.4	1.2	1.2	1.1	ASTM D3394
Compression Set (%)	0.2	0.1	0.2	0.1	0.2	0.1	ASTM D3394

MD = machine direction; XD = cross direction

Table II – Electrical Properties in Mineral Oil

Property	T994	T994-NPT	T994	T994-NPT	Test Method
Nominal Thickness (mm)	1.0	1.0	2.0	2.0	
AC Rapid Rise (kV/mm)	60	68	–	68	ASTM D149
Full Wave Impulse (kV/mm)	95	105	–	110	ASTM D3426
Dielectric Constant @ 60 Hz, 23°C	3.7	3.4	3.4	3.3	ASTM D150
Dielectric Constant @ 60 Hz, 130°C	3.9	3.7	3.3	3.2	ASTM D150
Dissipation Factor @ 60 Hz, 23°C	0.01	0.01	0.01	0.01	ASTM D150
Dissipation Factor @ 60 Hz, 130°C	0.01	0.01	0.01	0.01	ASTM D150

ASTM D149, 50 mm electrodes rapid rise, corresponds with IEC 60243-1, subclause 9.1, except for electrode set-up of 50 mm.



Nomex.

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PRODUCT SAFETY INFORMATION IS AVAILABLE UPON REQUEST.

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PLEASE NOTE: The properties in this data sheet are preliminary average values and should not be used as specification limits. These data points only represent a small amount of material and will likely change with more data collection. Unless otherwise noted, all properties were measured in air under "standard" conditions (in equilibrium at 23°C, 50% relative humidity). Note that, like other products of papermaking technology, Nomex® papers have somewhat different properties in the papermaking machine direction (MD) compared to the cross direction (XD). In some applications it may be necessary to orient the paper in the optimum direction to obtain its maximum potential performance.

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