

DUPONT™ NOMEX® LAMINATE TYPE NM

TECHNICAL DATA SHEET

Product description

DuPont™ NOMEX® Laminate Type NM is a duplex laminate constructed of calendered NOMEX® paper bonded to polyester film with a proprietary high temperature adhesive system. This laminate is designed not to delaminate or blister at high temperatures.

The polyester film in this two-ply laminate contributes high dielectric strength, as well as good initial tear strength and tensile properties. The calendered NOMEX® paper provides long-term thermal stability, as well as improved

propagation tear strengths. The two-ply structure allows for easy insertability of the slot liner using automatic insertion equipment.

Application

This laminate is broadly used in the manufacture of smaller motors. The most important applications are for slot liners, wedges and phase insulation in Class F motors, as well as in specialty Class B motors. Two-ply laminates are typically limited to frame sizes with slots no longer than 7 inches in length. This is

due to limitations in avoiding curl when using automatic insertion equipment, not because of a technical limitation of the product.

There are a number of insulation systems recognized by Underwriters Laboratories (UL), which include this laminate for both Class B and Class F motors. Upon request, access to these insulation systems is available from DuPont.

Case histories

Case histories detailing the use of Type NM laminates in motors are available upon request.

PRODUCT DATA

Product	ASTM D374 Thickness Nominal (inches)	Product Yield (yd ² /lb) (lb/yd ²)		ASTM D149 Dielectric Strength (volts)	ASTM D257 Volume Resistivity (ohms-cm)	ASTM D257 Surface Resistivity (ohms/square)	ASTM D882 MD Tensile Strength (lb/in width)	ASTM D882 XD Tensile Strength (lb/in width)	ASTM D1004 MD Tear Strength (lbs)	ASTM D1004 XD Tear Strength (lbs)
NM 2-1	0.003	5.88	0.17	5,000	10 ¹⁵	10 ¹⁵	40	20	3	N/A
NM 2-2	0.004	4.17	0.24	8,500	10 ¹⁵	10 ¹⁵	60	30	5	N/A
NM 2-10	0.012	1.28	0.78	20,500	10 ¹⁵	10 ¹⁵	122	84	16	N/A
NM 2½-5	0.008	2.46	0.41	16,000	10 ¹⁵	10 ¹⁵	124	133	16	18
NM 2½-7½	0.011	1.74	0.58	18,600	10 ¹⁵	10 ¹⁵	172	158	25	25
NM 2½-10	0.013	1.32	0.76	21,000	10 ¹⁵	10 ¹⁵	222	232	36	37
NM 4-3	0.007	2.76	0.36	12,200	10 ¹⁵	10 ¹⁵	71	108	19	12
NM 4-7½	0.012	1.52	0.66	18,900	10 ¹⁵	10 ¹⁵	166	158	34	21
NM 4-10	0.014	1.22	0.82	20,000	10 ¹⁵	10 ¹⁵	222	212	33	55
NM 5-5	0.010	1.79	0.56	15,000	10 ¹⁵	10 ¹⁵	184	140	18	N/A
NM 5-7½	0.015	1.12	0.89	20,000	10 ¹⁵	10 ¹⁵	202	162	20	N/A

The data for these constructions only represents a small amount of material, and will likely change with more data collection.



Specifications

The properties shown in this data sheet are typical values, and should not be used as specification limits. Contact DuPont for assistance in preparing specifications of these materials for your application.

Shelf life

The shelf life of NOMEX® laminates is in excess of one year when they are stored at or below room temperature.

Safety precautions

A Material Safety Data Sheet (MSDS) describing the use of this product is available upon request from DuPont.

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Product safety information is available upon request.

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