

# NOMEX® NK and NKN Laminates

## TECHNICAL DATA SHEET

### Product Description

NOMEX® NK and NKN laminates are duplex and triplex laminates constructed of calendered NOMEX® paper bonded to polyimide film with a proprietary high temperature adhesive system. These laminates will not delaminate or blister at high temperatures.

The polyimide film in these 2 and 3-ply laminates 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.

### Application

These laminates are broadly used in the manufacture and remanufacture of motors and generators of many sizes and temperature classes. The most important

applications are for slot liners, wedges and phase insulation in motors and generators which have thermal requirements above Class H applications.

There are a number of insulation systems recognized by Underwriters Laboratories (UL) which include these laminates for temperature classes up to and including 220°C. Upon request, access to these insulation systems is available from DuPont.

### Product Data

Product	ASTM D374	Product Yield		ASTM D149	ASTM D257	ASTM D257	ASTM D882	ASTM D882	ASTM D1004	ASTM D1004
	Nominal (inches)	(yd <sup>2</sup> /lb)	(lb/yd <sup>2</sup> )	Dielectric Strength (volts)	Volume Resistivity (ohms-cm)	Surface Resistivity (ohms/square)	MD Tensile Strength (lb/in width)	XD Tensile Strength (lb/in width)	MD Tear Strength (lbs)	XD Tear Strength (lbs)
NK 2-1	0.003	5.90	0.17	6,000	10 <sup>15</sup>	10 <sup>13</sup>	60	40	5	3
NK 2-2	0.004	4.17	0.24	9,000	10 <sup>15</sup>	10 <sup>13</sup>	70	45	6	4
NK 3-1	0.004	4.55	0.22	7,000	10 <sup>15</sup>	10 <sup>13</sup>	72	46	5	3
NK 3-2	0.005	3.57	0.28	9,000	10 <sup>15</sup>	10 <sup>13</sup>	80	60	6	5
NK 3-3	0.006	2.86	0.35	13,500	10 <sup>15</sup>	10 <sup>13</sup>	90	70	12	8
NK 5-5	0.010	1.72	0.58	20,000	10 <sup>15</sup>	10 <sup>13</sup>	100	80	14	10
NKN 2-1-2	0.006	3.57	0.28	9,000	10 <sup>15</sup>	10 <sup>13</sup>	100	60	6	5
NKN 2-2-2	0.007	2.85	0.35	14,000	10 <sup>15</sup>	10 <sup>13</sup>	122	81	8	6
NKN 3-1-3	0.008	2.70	0.37	10,000	10 <sup>15</sup>	10 <sup>13</sup>	120	73	9	6
NKN 3-2-3	0.009	2.32	0.43	17,000	10 <sup>15</sup>	10 <sup>13</sup>	150	100	10	9
NKN 3-3-3	0.010	1.96	0.51	19,000	10 <sup>15</sup>	10 <sup>13</sup>	170	120	12	10
NKN 3-5-3	0.011	1.58	0.63	20,000	10 <sup>15</sup>	10 <sup>13</sup>	190	140	15	11
NKN 5-1-5	0.011	1.82	0.55	13,000	10 <sup>15</sup>	10 <sup>13</sup>	190	140	6	5
NKN 5-2-5	0.012	1.69	0.59	18,000	10 <sup>15</sup>	10 <sup>13</sup>	220	120	15	10
NKN 5-3-5	0.013	1.49	0.67	21,000	10 <sup>15</sup>	10 <sup>13</sup>	260	180	21	14
NKN 5-5-5	0.016	1.23	0.81	25,000	10 <sup>15</sup>	10 <sup>13</sup>	330	220	26	16
NKN 7-1-7	0.015	1.33	0.75	16,500	10 <sup>15</sup>	10 <sup>13</sup>	200	155	15	10



## Available Forms

These products are available as 36-yard rolls of slit tape, from 1/2 inch in width, on 3-inch diameter cores. They are also available as full width trimmed (36 inch wide) rolls in 25, 50 and 100 yard length. Cut sheets, special core sizes and non-standard roll lengths are available upon request.

## 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

Material Safety Data Sheets (MSDS) describing the use of these products are available upon request from DuPont.

## Availability

NOMEX® NK and NKN Laminates are available from Von Roll Isola – USA, DuPont’s, authorized sales agent, or from your local authorized distributor. For the name of a local fabricator or distributor, or for more information on these products, contact DuPont.

### USA

DuPont  
Advanced Fibers Systems  
5401 Jefferson Davis Highway  
Richmond, VA 23234  
Tel: (800) 453-8527 (804) 383-4400  
Fax: (800) 787-7086 (804) 383-4132  
e-mail: afscdt@usa.dupont.com

Von Roll Isola USA, Inc.  
One West Campbell Road  
Schenectady, NY 12306  
Tel: (800) 654-7652 (518) 344-7237  
Fax: (518) 344-7384  
Email: something@vonroll-isola.com

### CANADA

DuPont Canada, Inc.  
Advanced Fibers Systems  
P. O. Box 2200  
Streetsville Postal Station  
Mississauga, Ontario, L5M 2H3  
Canada  
Tel: (800) 387-2122 (905) 821-5193  
Fax: (905) 821-5177  
Email: products@can.dupont.com

Website: [www.dupont.com/nomex](http://www.dupont.com/nomex)

**Product safety information is available upon request.** This information corresponds to our current knowledge on the subject. It is offered solely to provide possible suggestions for your own experimentations. It is not intended, however, to substitute for any testing you may need to conduct to determine for yourself the suitability of our products for your particular purposes. This information may be subject to revision as new knowledge and experience becomes available. Since we cannot anticipate all variations in actual end-use conditions, DUPONT MAKES NO WARRANTIES AND ASSUMES NO LIABILITY IN CONNECTION WITH ANY USE OF THIS INFORMATION. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent right.

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