

# DUPONT™ NOMEX® LAMINATES TYPE NK AND TYPE NKN

## TECHNICAL DATA SHEET

### Product description

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

The KAPTON® 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 Thickness Nominal (inches)	Product Yield (yd <sup>2</sup> /lb) (lb/yd <sup>2</sup> )		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)
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
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

# NOMEX®

only by DuPont

## 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.

## Availability

DuPont™ NOMEX® Laminates Type NK and Type NKN 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 Von Roll Isola.

## USA

DuPont  
Advanced Fibers Systems  
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**vonRoll** ISOLA

## CANADA

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### 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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