

## Material Data Sheet

**Item:** Diamond Coated Kraft Paper

**Description:** This specification covers thermally upgraded electrical grade kraft paper coated with a B-stage heat curable epoxy resin. The base paper is made from selected grades of purified 100% sulfate, virgin kraft pulp, unbleached and without sizing. The epoxy adhesive is applied to either one or two sides of the paper in either a solid pad or diamond pattern. The diamond pattern consists of 3/8" (9.5 mm x 9.5 mm) with 5/8" (15.9 mm) center spacing.

### Applicable Documents:

ASTM D149: Dielectric breakdown voltage and dielectric strength of solid electrical insulating materials.

ASTM D202: Sampling and testing untreated paper used for electrical insulation.

### Chemical Properties:

Ash Content 1% max - All calipers

Moisture content 8% max, 4-7% average. The moisture content shall be high enough to withstand bends and creasing but low enough to prevent wrinkling and elongation.

PH Value 6.0 to 8.0% max - All calipers

Nitrogen 1.3 to 2.0% - All calipers

### Physical Properties:

Apparent density .9 to 1.1 - All calipers

Basis Weight

<u>Thickness, Nominal</u>		<u>Weight - Average</u>
<u>Inch</u>	<u>mm</u>	<u>Lbs./3,000 sq. ft</u>
.003	.076	46
.005	.127	80
.007	.178	112
.010	.254	160
.015	.381	230
.020	.508	310

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<b>Caliper (Inches):</b>	.003	.005	.007	.010	.015	.020
<b>Approx. Metric Conversion:</b>	(.075mm)	(.125mm)	(.175mm)	(.25mm)	(.38mm)	(.50mm)

**Basis Weight**

Lbs./3,000 ft <sup>2</sup>	46	80	110	160	230	310
Apparent Density:	.9 to 1.1					
Moisture %:	4 to 7%					
PH Water Extract:	6.0 to 8.0					
Ash Content %:	1% maximum					

**Nitrogen Content**

Coleman (by weight):	60	120	200	300	500	750
Cross Direction:	85	180	240	400	650	850

**Tensile Strength Grams**

Machine Direction:	45	85	100	160	200	250
Cross Direction:	15	20	25	40	80	120

**Burst Strength lbs/sq. in.**

(Mullen):	45	90	120	175	275	330
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**Dielectric Breakdown\***

Volts (dry):	900	1300	1700	2100	3000	3300
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**Burst Strength lbs/sq. in.**

Kilovolts (oiled):	5.5	8.5	10.5	14.0	20.5	23.5
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**Bond Strength**

Min. 40 psi shear strength, tested at 100 C° (210 F°)

**\*Values based on Tests Made According to ASTM D-202**

All of the information, suggestions, and recommendations pertaining to the properties and uses of the products herein are based upon tests and data believed to be accurate; however, the final determination regarding the suitability of any material described herein for the use contemplated, the manner of such use, and whether the use infringes any patents is the sole responsibility of the user. There is no warranty, expressed or implied, including, without limitation warranty of merchantability or fitness for a particular purpose. Under no circumstances shall we be liable for incidental or consequential loss or damage.