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Technical data for DK Rolls

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Extensive DK Label Tests

Temperature Resistance Test

Brother DK labels can be used in a wide range of temperatures, from freezing cold to hot environments.

The Temperature Test Procedure
Brother DK film, paper and 2-colour paper labels were attached to stainless steel, heated and cooled.

The Temperature Test Results

The results showed that DK film labels were unaffected throughout the temperature test, whether placed in -80°C or in +80°C*. The DK paper labels were unaffected at temperatures ranging from -80°C to +60°C, but showed slight discolouration at +80°C.

The DK 2-colour paper labels were unaffected at temperatures ranging from -80°C to 25°C, but showed slight discolouration at +60°C and the red colour could not be distinguished at +80°C.

Temperature	Hours	DK Film	DK paper	DK 2-colour paper
-80°C	240hrs	●	●	●
-30°C	240hrs	●	●	●
0°C	240hrs	●	●	●
+25°C	240hrs	●	●	●
+60°C	240hrs	●	●	▲
+80°C	240hrs	●	▲	※

● = No noticeable change
▲ = Slight discolouration, but legible
※ = Unable to distinguish red colour

DK Film in -80°C/+80°C

DK Paper in -80°C

DK Paper in +60°C

DK Paper in +80°C

DK 2-colour paper in -80°C

DK 2-colour paper in +60°C

DK 2-colour paper in +80°C

* For higher or longer exposure to temperatures, we recommend using Brother TZe laminated labels in one of our P-touch Labelling Machines

Extensive DK Label Tests

Like all direct thermal labels, Brother DK paper, 2-colour paper and film labels are not designed for durable, permanent labelling. However, as these tests show, Brother DK paper, 2-colour paper and film labels are an excellent solution for short-term labelling. If durable, long term labelling is required then Brother laminated P-touch tapes should be used.

Abrasion Resistance Test

Brother DK film material withstands moderate* abrasion without affecting the legibility of the text.

Brother DK paper labels protect against accidental marks and scratches, due to a special coating applied to the surface of the paper labels.

The Abrasion Test Procedure

A 1kg sanding device was passed over Brother DK film, paper and 2-colour paper labels. After 50 return passes the DK film labels were completely unaffected.

The DK paper and 2-colour paper labels' print quality stayed completely unaffected, even though slight scratches appeared on the paper itself.

The Abrasion Test Results

Brother DK film label	●
Brother DK paper label	●
Brother DK 2-colour paper label	●

● = Not affected

DK Film

DK Paper

DK 2-colour Paper

*For exposure to heavier abrasion we recommend using Brother TZe laminated labels in one of our P-touch Labelling Machines

Extensive DK Label Tests

Outdoor Fade Resistance Test

Although DK labels should not be used for long periods of time outdoors, tests show the yellow DK film material is most suited for temporary outdoor labelling applications.

The Outdoor Fade Resistance Test Procedure

Brother DK film labels were attached to coated metal plates and placed inside a fade-inducing chamber and left for a maximum period of 100 hours. In addition, labels were placed in a natural outdoor environment and inspected for any obvious changes*.

Outdoor Fade Resistance Test Results

Test results show that DK labels are not ideally suited for use outdoors for periods over one month. For these applications, we recommend the use of Brother TZe laminated labels.

DK White Film Before

DK Film After 1 Month

DK Yellow Film Before

DK Yellow Film After 1 Month

*Different environmental conditions will have varying effects on the printed DK labels, and as such Brother cannot guarantee that labels placed in another environment other than those as tested will have the same results as shown.

Extensive DK Label Tests

Indoor Fade Resistance Test

Brother DK film, paper and 2-colour paper labels are ideal for indoor usage.

The Indoor Fade Test Procedure

Brother DK film, paper and 2-colour paper labels were attached to coated metal plates and placed inside a fade-inducing chamber at +24±2°C with 60%±5% humidity. They were left for a period of 52 hours.

In addition, DK labels were placed in a natural office environment for one year and inspected for any obvious changes*.

Indoor Fade Resistance Test Results

Both the Brother DK film, paper and 2-colour paper labels remained completely legible, as shown below.

DK Film Before

DK Film After

DK Paper Before

DK Paper Before

DK 2-colour Paper Before

DK 2-colour Paper After

*Different environmental conditions will have varying effects on the printed DK labels, and as such Brother cannot guarantee that labels placed in another environment other than those as tested will have the same results as shown.

Extensive DK Label Tests

Test Comparison Results

Water

DK Film

DK Paper

DK 2-colour Paper

Hexane

DK Film

DK Paper

DK 2-colour Paper

Mineral Spirit

DK Film

DK Paper

DK 2-colour Paper

Toluene

DK Film

DK Paper

DK 2-colour Paper

Stage 2: Water and Chemical Abrasion Test Procedure

Brother DK film, paper and 2-colour paper labels were affixed to several glass plates, and a 500g weight with a chemical and solvent infused cloth was passed over each label 40 times (20 return passes).

Water and Chemical Abrasion Test Results

Brother DK film labels remained unaffected when rubbed with a variety of chemicals and water. Should any chemicals be accidentally spilt onto the DK film labels, wiping them dry should help avoid any damage. The DK paper and 2-colour paper labels showed some discolouration when tested with several of the chemicals, however, the text itself remained legible. If spillages of water, Sodium Hydroxide, or Hydrochloric Acid do occur, do not wipe the label, but simply let it dry.

Extensive DK Label Tests

Water and Chemical Resistance Test

Brother DK film, paper and 2-colour paper labels were tested for their legibility in various chemicals and water.

Water and chemical resistance tests were conducted in **two stages:**

Stage 1 The water and chemical submersion test
Stage 2 The water and chemical abrasion test

Stage 1: Water and Chemical Submersion Test Procedure

To test Brother DK film, paper and 2-colour paper labels against the effects of water and chemicals, the labels were attached to glass slides and immersed in a variety of liquids for 2 hours.

Water and Chemical Submersion Test Results

The labels most resistant to submersion in the chemicals tested were the DK film labels. However, in general none of the labels should be submerged in highly volatile chemicals, such as acetone and ethyl acetate. In general, we recommend the use of durable TZe laminated labels should labels be subjected to chemicals.

Solution	DK Film	DK paper	DK 2-colour paper
Water	●	●	●
Hexane	●	●	●
Mineral Spirit	●	●	▲
0.1N Sodium Hydroxide	●	▲	▲
0.1N Hydrochloric Acid	▲	▲	▲
Toluene	▲	▲	▲
Ethanol	▲	×	×
Acetone	×	×	×
Ethyl Acetate	×	×	×

● = No noticeable change

▲ = Slight discolouration, but legible

× = Illegible

Extensive DK Label Tests

Strong Adhesion Test

Brother DK paper and film labels are both supplied with a strong adhesive to ensure that they remain stuck to most common surfaces.

Strong Adhesion Test Procedure

To test the adhesive strength of Brother DK film and paper labels, 25mm wide labels were affixed to a variety of surfaces and left for 30 minutes.

The adhesive strength was tested by removing the label at an angle of 180 degrees. This testing method complies with Japanese Standard JIS Z0237 testing for adhesive tape.

Strong Adhesion Test Results

The table shows that an adhesive strength of at least 11 Newtons was maintained with most materials, indicating sufficient adhesive strength against most common materials.

Solution	DK Labels
Stainless Steel	12.1
Glass	11.2
PVC	12.7
Acrylic	11.0
Polypropylene	10.0
Polyester Coated Wood	11.0

Curved Surface Adhesion Test

Brother DK film labels are specifically designed so that the labels will stick to most cylindrical surfaces used within the laboratory and medical sectors*.

Curved Surface Adhesion Test Procedure

Brother DK film and paper labels were attached to test tubes of various materials and sizes, and left for approximately 30 minutes. The labels were then checked for their ability to stay affixed to each particular surface.

Curved Surface Adhesion Test Results

	Ø 10.6mm Polystyrene	Ø 14.6mm Polystyrene	Ø 17.7mm Polystyrene	Ø 11.8mm Glass	Ø 11.8mm Polypropylene
DK Film	●	●	●	●	●
Dk Paper	●	▲	▲	●	✕

● = Sticks perfectly to the curved surface
▲ = 5mm to 10mm of the label's edge springs back
✕ = Does not stick to the curved surface

*For labelling curved objects with a small diameter, we recommend the use of Flexible ID TZe label cassettes.

Extensive DK Label Tests

Solution	DK Film	DK paper	DK 2-colour paper
Water	●	×	▲
Hexane	●	●	●
Mineral Spirit	●	●	●
0.1N Sodium Hydroxide	●	×	▲
0.1N Hydrochloric Acid	●	×	▲
Toluene	●	●	●
Ethanol	●	●	▲
Acetone	●	▲	●
Ethyl Acetate	●	▲	●

● = No noticeable change

▲ = Slight discolouration, but legible

× = Illegible

Test Comparison Results

All Chemicals

DK Film

DK film labels proved abrasion resistant against all the chemicals tested.

Toluene

DK Paper

DK 2-colour Paper

Ethanol

DK Paper

DK 2-colour Paper

Ethyl Acetate

DK Paper

DK 2-colour Paper

Acetone

DK Paper

DK 2-colour Paper

Brother Genuine Supplies

Brother Original Supplies offer peace of mind and quality guaranteed.

Brother Genuine Supplies work in perfect harmony with Brother printers. Designed, manufactured and tested in controlled environments by the same team of engineers as Brother hardware. Providing you with the best possible results for your business and protection of your print investment.

1. A random sample of tape types were selected and used to perform these tests. Accordingly, results may have differed slightly, depending on the type of tape used.

2. The actual test results were acquired under specific conditions configured by Brother, with the sole aim of providing information contained within this booklet. Brother does not guarantee the strength, safety or accuracy of numerical data.

3. Since tape adherence performance is affected by the material the tape is attached to, the material's surface condition, whether it is greasy, dusty, rough or curved, and the environmental conditions, the customer should confirm adherence performance under actual usage conditions after purchasing the tape required, and use the product under their own responsibility.

4. Brother accepts no responsibility for injuries or lost earnings resulting from application of the information contained in this document.

DK rolls for the QL label printer range

Wide range of labels available in paper and plastic film material, pre-sized labels or continuous rolls.

DK Die-Cut Labels	Material	Colour	Size	Item No.
Standard address label (400/roll)	Paper	White	29 x 90 mm	DK-11201
Large address label (400/roll)	Paper	White	38 x 90 mm	DK-11208
Small address label (800 roll)	Paper	White	62 x 29 mm	DK-11209
Shipping label (300/roll)	Paper	White	62 x 100 mm	DK-11202
Large shipping label (180/roll)	Paper	White	103 x 164 mm	DK-11247*
Barcode label (600/roll)	Paper	White	102 x 51 mm	DK-11240*
File folder label (300/roll)	Paper	White	17 x 87 mm	DK-11203
Multi-purpose label (400/roll)	Paper	White	17 x 54 mm	DK-11204
Square label (1000/roll)	Paper	White	23 x 23 mm	DK-11221
CD/DVD label (100/roll)	Film	White	58 mm Ø	DK-11207
Round label (1200/roll)	Paper	White	12 mm Ø	DK-11219
Round label (1000/roll)	Paper	White	24 mm Ø	DK-11218

DK Continuous-Length Tapes - 30.48m	Material	Colour	Size	Item No.
Continuous-length	Paper	White	12 mm	DK-22214
Continuous-length	Paper	White	29 mm	DK-22210
Continuous-length	Paper	White	38 mm	DK-22225
Continuous-length	Paper	White	50 mm	DK-22223
Continuous-length	Paper, non-adhesive	White	54 mm	DK-N55224
Continuous-length	Paper	White	62 mm	DK-22205
Continuous-length	Paper, removable	White	62 mm	DK-44205
Continuous-length	Paper, removable	Yellow	62 mm	DK-44605
Continuous-length	Paper	White	103 mm	DK-22246**

DK Continuous-Length Tapes - 15.24m	Material	Colour	Size	Item No.
Continuous-length	Film	White	29 mm	DK-22211
Continuous-length	Film	White	62 mm	DK-22212
Continuous-length	Film	Yellow	62 mm	DK-22606
Continuous-length	Film	Transparent	62 mm	DK-22113
Continuous-length - Black/Red print	Paper	White	62 mm	DK-22251***

* QL-1050/1050N/1060N/QL-1110/QL-1110NWB. ** QL-1050/1050N/1060N require firmware update - visit http://solutions.brother.com for more information
*** QL-800/810W/820NWB

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