



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.

ABCDEFGHI

DK Film in -80°C/+80°C

ABCDEFGHI

DK Paper in -80°C

ABCDEFGHI

DK Paper in +60°C

ABCDEFGHI

DK Paper in +80°C

ABCDEFGHIJKLMN ABCDEFGHIJKLMN

DK 2-colour paper in -80°C

ABCDEFGHIJKLMN ABCDEFGHIJKLMN

DK 2-colour paper in +60°C

ABCDEFGHIJKLMN ABCDEFGHIJKLMN

DK 2-colour paper in +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	•	•	A
+80°C	240hrs	•	A	*

No noticeable change

Slight discolouration, but legible

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

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	•	ABCDEFGHI
Brother DK paper label	•	DK Film
Brother DK 2-colour paper label	•	
		ABCDEFGHI
Not affected		DK Paper
		ABCDEFGHIJKLMN ABCDEFGHIJKLMN
		DK 2-colour Paper

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.



*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.

Indoor Fade Resistance Test

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

The Indoor Fade Test Procedure

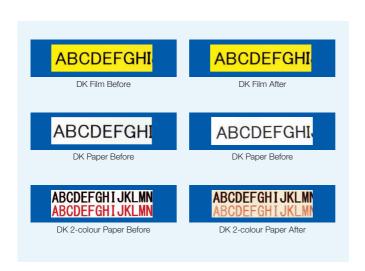
Brother DK film, paper and 2-colour paper labels were attached to coated metal plates and placed inside a fade-inducing chamber at +24±2°C with 60%±5% humidity. They were left for a period of 52 hours.

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.



*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.

Test Comparison Results



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.

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	•	•	A
0.1N Sodium Hydroxide	•	A	A
0.1N Hydrochloric Acid	A	A	A
Toluene	A	A	A
Ethanol	A	×	×
Acetone	×	×	×
Ethyl Acetate	×	×	×



= No noticeable change

Slight discolouration, but legible

X = Illegible

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.



Polypropylene

Polyester Coated Wood

10.0

11.0

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.

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.



10.6mm olystyrene 14.6mm olystyrene olystyrene olystyrene 11.8mm ass

Curved Surface Adhesion Test Results

	Ø IL	Ø L	Ø IL	00	Ø L
DK Film	•	•	•	•	•
Dk Paper	•	A	•	•	×

Sticks perfectly to the curved surface

= 5mm to 10mm of the label's edge springs back

x = 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.

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



- = No noticeable change
- ▲ = Slight discolouration, but legible

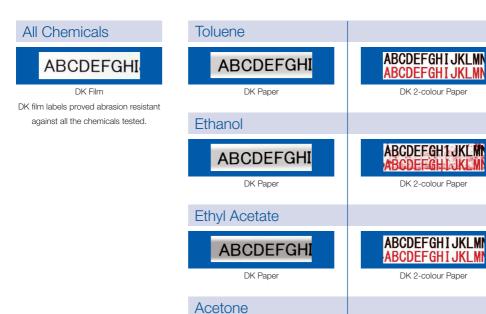
ABCDEFGHIJKLMN

DK 2-colour Paper

ABCDEFGHIJKL

X = Illegible

Test Comparison Results



ABCDEFGHI

DK Paper

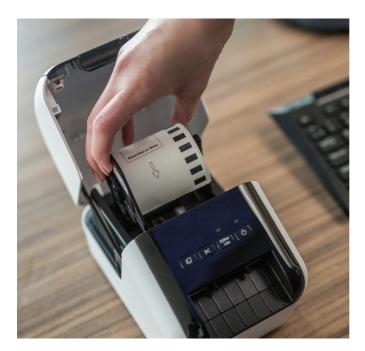
Brother Genuine Supplies

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- 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-11110/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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