



Technical data for TZ tapes



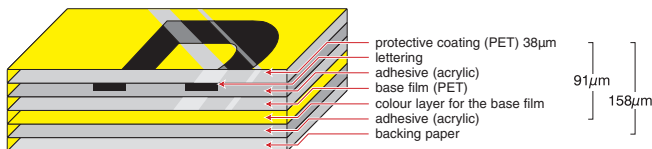
P-touch

At your side.
brother®



Why do Brother P-touch laminated labels last longer?

Unlike ordinary labels, our unique laminated tape technology ensures that a layer of super-clear polyethylene laminate protects your text.



Brother P-touch laminated TZ tapes consist of six layers of materials, resulting in a thin, extremely strong label. Characters are formed with a thermal transfer ink and sandwiched between two protective layers of PET (polyester film). The result is a virtually indestructible label that can withstand even the harshest conditions.

In fact, we are sure about the durability of our labels because we've tested them to the extreme, against the effects of abrasion, temperature, chemicals and sunlight. Results prove that Brother P-touch laminated labels out perform competitor labels, staying legible and affixed, so you can be confident of a professional quality label that has been designed to last.

And we can prove it. The following pages will show you exactly how our labels are tested to the extreme.



Patented lamination provides an extra protective overcoat.



Abrasion Resistant Labels

Brother's patented tape lamination technology ensures that Brother P-touch laminated labels can withstand even heavy abrasion.

The Abrasion Test Procedure

A 1kg sanding device was passed over Brother P-touch laminated labels, and non-laminated competitor labels. After 50 return passes the characters underneath the Brother P-touch laminated label were completely unaffected and the lamination was only slightly scratched.

Abrasion Tests Results

Brother P-touch laminated TZ label	✓	✓ = No effect on print quality
Competitor non-laminated label	✗	✗ = Print quality affected



Brother P-touch Laminated Label



Non-Laminated Competitor Label



Can
withstand
heavy
abrasion



Temperature Resistant Labels

Whether you want to use our labels in freezing conditions or alternatively in extremely warm environments, our labels have been designed to last, we know this because we've tested them to the extreme. In fact, results show that Brother P-touch laminated labels can withstand temperatures from -80°C to 150°C.

The Temperature Test Procedure

Brother P-touch laminated labels, slightly roughened with abrasive paper, were attached to stainless steel then heated and cooled. After 240 hours at -80°C no noticeable change in tape adhesive or colour had occurred. After 240 hours at 150°C, despite slight discolouration, the text on the label remained completely intact, and the heat actually increased the tapes' adhesive strength, due to a slight softening and spreading of the adhesive.* We recommend TZ-M931/951/961 (Black on matt silver) as most resistant to high temperatures in terms of discolouration.



Temperature
Resistant

Test Results

Label performance after exposure to heat and cold

Temperature	Hours	Tape Condition
-80°C	240hrs	●
-30°C	240hrs	●
-0°C	240hrs	●
+50°C	240hrs	●
+100°C	240hrs	●
+150°C	240hrs	▲

● = no noticeable change

▲ = text is legible but there is some tape discolouration

*When tape is subject to extremely high temperatures for long periods the laminate film may be separated or discoloured, or it may shrink.



Test: Temperature
Temperature: 100°C
Duration: 240 hours
Labels: Brother P-touch Laminated Label



Temperature
Resistant

Resistant to
temperatures
of -80°C to
150°C



Fade Resistant Labels

Wherever you use P-touch laminated labels, they have been designed to stay as clear and legible as the day they were applied.

The Fade Test Procedure

Several Brother P-touch laminated labels, in various colours, were attached to coated metal plates and placed inside a fade-inducing chamber at 83°C. They were left for a period of 100 hours to simulate a year in sunny surroundings and then inspected for any obvious changes.

The text colour remained unchanged and so all characters were still completely legible. To the naked eye, the tapes' background colour showed no change, except for the yellow tape which showed some slight fading.



Labels Before and After Testing

Test: Fade Meter **Temperature:** 83°C
Duration: 100 hours **Labels:** Brother P-touch Laminated Labels

Before Testing

After Testing

ABCDE	ABCDE
ABCDE	ABCDE
ABCDE	ABCDE



Water and Chemical Resistance

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 P-touch laminated labels against the effects of water and chemicals, the tapes were firstly attached to glass slides and immersed in a variety of liquids for 2 hours.

No change in appearance or structure of the labels occurred, and the labels remained affixed to the slides.

Although some labels soaked in certain chemicals showed minor changes, rubbing the labels with the same chemicals had no effect at all. So even if chemicals are spilled on your Brother P-touch laminated labels, a quick wipe should be enough to prevent any damage.

Test Results for Brother P-touch Laminated

Toluene	Hexane	Ethanol	Ethyl Acetate	Acetone	Mineral Spirit	Water	0.1N Hydrochloric	0.1 Sodium Hydroxide
•	•	•	•	•	•	•	•	•

• = no print discolouration



Test: Water and Chemical Submersion

Chemical: Ethanol

Duration: 2 hours

Labels: Brother P-touch Laminated Label



Water
Resistant



Chemical
Resistant



Water
Resistant



Chemical
Resistant

Resistant to
a wide range of
industrial
chemicals



Water and Chemical Resistance

Stage 2 Water and Chemical Abrasion Test Procedure

Brother P-touch laminated tape was affixed to several glass plates. A 500g weight with a chemical and solvent infused cloth was passed over each label 20 times. As the results below show, the print quality of Brother P-touch laminated labels was unaffected, unlike our competitor's non-laminated labels.

Test Results	Toluene	Hexane	Ethanol	Acetone	Ethyl acetate	Water	0.1N Hydrochloric	Mineral spirit	0.1 Sodium Hydroxide
P-touch Laminated Label	●	●	●	●	●	●	●	●	●
Non-Laminated Competitor Label	X	●	●	X	X	●	●	●	●

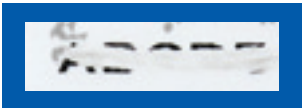
● = Print quality unaffected X = Print quality affected

Labels After Testing

Test: Chemical Abrasion Chemical: Acetone



Brother P-touch Laminated Label



Non-Laminated Competitor Label



Water Resistant



Chemical Resistant

Resistant to a wide range of industrial chemicals



Strong Adhesion

The Adhesion Test Procedure

To test the adhesive strength of Brother P-touch laminated tapes, 12mm standard tape and extra strength adhesive tape were affixed to a variety of objects, all with different surfaces, and left for 30 minutes. Adhesive strength was tested by removing the tape at an angle of 180 degrees. This testing method complies with Japanese Standard JIS Z0237 testing for adhesive tape.

Test Results

The table explains that an adhesive strength of approximately 6 Newtons* was maintained with most materials. Our strong adhesive tape maintained an average of 50% more adhesive strength compared to our standard tape and is suitable for more demanding surfaces such as polypropylene.

	Stainless Steel	Glass	PVC	Acrylic	Polypropylene	Polyester Coated Wood
Standard TZ Tape	7.6	7.2	8.6	6.9	3.3	6.4
Extra Strong Adhesive TZ Tape	10	10.1	11.5	11.5	7.4	11.5

* Results in Newtons for 12mm width tape






Strong adhesion to a wide range of surfaces



Choose the right tape for the job

Brother P-touch laminated tapes are available in a wide range of tape colours, widths and styles. Your application and your choice of P-touch model should guide your ultimate tape selection. The table below will also help you to determine the correct tape for your applications.

			TZ Laminated Tapes	Strong Adhesive Tapes	Flexible ID Tapes	Security Tapes
Flat Surface 	Smooth		●	●	●	●
	Textured		✕	●	▲	✕
Large Curved Surface (more than 8mm diameter) 	Smooth		▲	●	●	▲
	Textured		✕	●	▲	✕
Small Curved Surface (less than 8mm diameter) 	Smooth		✕	✕	●	✕
	Textured		✕	✕	●	✕



Recommended



Acceptable



Not Recommended



Choosing The
Right Tape

Choose the right
tape for the job



Choosing The
Right Tape

Frequently Asked Questions

How thick are TZ tapes?

TZ tapes are around 160 micro metres in thickness but this varies slightly by tape type.

Which colour tape is recommended for high temperatures?

We recommend TZ-M931/951/961 (Black on matt silver) as most resistant to high temperatures in terms of discolouration.

When I remove the label will messy adhesive remain? How can I remove it?

Tapes can be removed from most materials with relative ease leaving little or no adhesive on the material. Extreme heat, humidity and certain chemicals may result in some residual adhesive being left but this can be removed in most cases with Ethanol.

What is the shelf life of an unused TZ tape?

The shelf life of an unused TZ tape is 15 months from production.

Do TZ tapes contain chloride?

No chloride materials are used in the cassette case, tape or ink.

Do TZ tapes create any outgasing?

The following gases may be produced when labels are in a hot environment such as in front of an air conditioner - toluene, n-butanol, 2-ethylhexyl alcohol, butyl carbinol acetate. These levels are however very low.



Strong
adhesion to
a wide
range of
surfaces



Frequently Asked Questions

Can TZ tapes be submerged in alcohol?

Submersion of TZ tapes in alcohol is not recommended for extended periods due to the possible deterioration of the tape adhesive.

Is it safe to burn a P-touch label?

Although there may be some halogen in TZ tapes, it is of a very low level making it safe to burn TZ tapes.

Do TZ tapes contain silicon?

Since the tape liner itself is silicon coated on both sides, there is a chance that small amounts of silicon may remain on the adhesive layer underneath the label even after the liner is peeled off.

Do TZ tapes create static electricity?

When peeling off the tape liner there may be some very low levels of static electricity.

Do TZ tapes contain vinyl chlorine?

TZ laminated tapes contain very low levels of residual chlorine.

Which colour tape fades the least?

We recommend TZ-M931/951/961 (Black on matt silver) as our most fade resistant tape. Fluorescent tapes are not recommended.



Resistant to
a wide range
of industrial
chemicals



Frequently Asked Questions

Do TZ tapes contain latex?

TZ tape uses acryl based adhesive materials and do not include latex.

Does TZ tape contain lead?

There is no lead in the cassette case, tape or ink.

Can TZ tapes be used on circuit boards?

We do not recommend that TZ tapes are used on circuit boards due to the sensitivity of circuit boards to dust, static electricity and acid (although these are at very low levels in TZ tapes)

Can TZ tapes be used on copper?

As adhesive materials used in our tape are acrylic and weakly acid we do not recommend that TZ tapes are used on copper.

How long should security tape be attached before peeling off?

We recommend that TZ security tape is affixed for at least 24 hours in order to work effectively.

UL Certification

A number of our TZ tapes have been tested by Underwriters Laboratories, a renowned independent testing laboratory. Our tapes have passed their rigorous safety standards and gained UL certification and we continue to test more tapes. For latest certification details and a list of certified tapes please contact your local Brother office.



Can
withstand
heavy
abrasion

