



## Technical data for Brother TZe Tapes

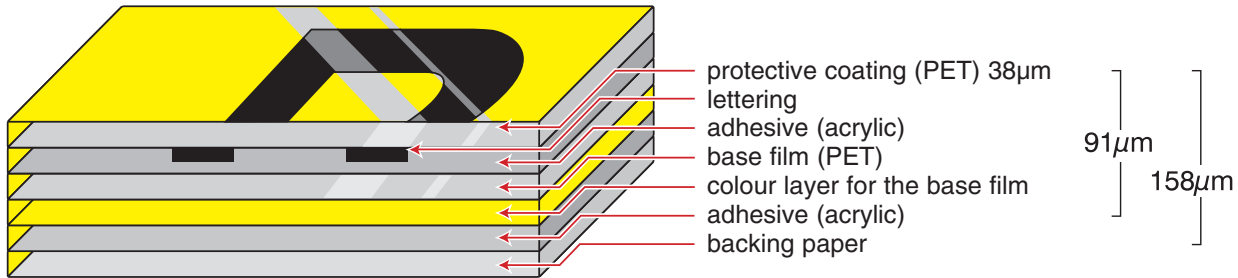




Laminated

## 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 TZe tapes consist of seven 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.



Laminated

Patented lamination provides an extra protective overcoat.





Abrasion  
Resistant

## 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 Test Results

|                                     |   |                                |
|-------------------------------------|---|--------------------------------|
| Brother P-Touch laminated TZe label | ✓ | ✓ = No effect on print quality |
| Competitor non-laminated label      | ✗ | ✗ = Print quality affected     |



Brother P-Touch Laminated Label



Non-Laminated Competitor Label



Abrasion  
Resistant

Can withstand heavy abrasion





Temperature  
Resistant

## 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  $-80^{\circ}\text{C}$  to  $150^{\circ}\text{C}$ .

### 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  $-80^{\circ}\text{C}$  no noticeable change in tape adhesive or colour had occurred. After 240 hours at  $150^{\circ}\text{C}$ , 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 TZe-M931/951/961 (Black on matt silver) as most resistant to high temperatures in terms of discolouration.

### Test Results

#### Label performance after exposure to heat and cold

| Temperature            | Hours  | Tape Condition |
|------------------------|--------|----------------|
| $-80^{\circ}\text{C}$  | 240hrs | ●              |
| $-30^{\circ}\text{C}$  | 240hrs | ●              |
| $-0^{\circ}\text{C}$   | 240hrs | ●              |
| $+50^{\circ}\text{C}$  | 240hrs | ●              |
| $+100^{\circ}\text{C}$ | 240hrs | ●              |
| $+150^{\circ}\text{C}$ | 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:**  $100^{\circ}\text{C}$

**Duration:** 240 hours

**Labels:** Brother P-touch Laminated Label



Temperature  
Resistant

Resistant to temperatures  
of  $-80^{\circ}\text{C}$  to  $150^{\circ}\text{C}$







Fade  
Resistant

## 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.

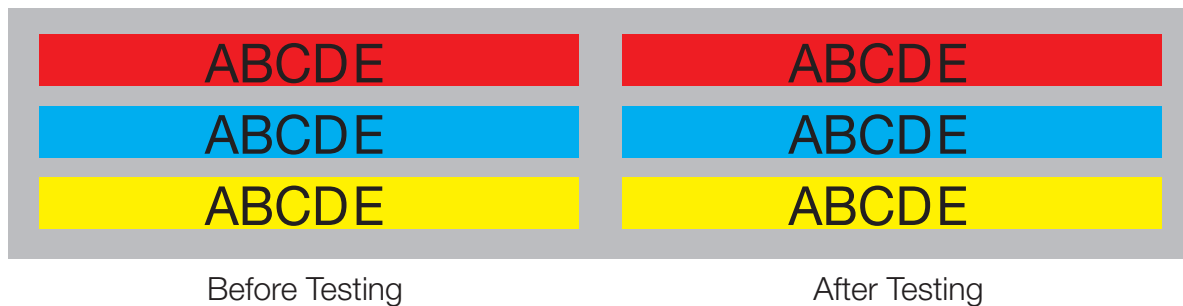
### Abrasion Test Results

**Test:** Fade Meter

**Temperature:** 83°C

**Duration:** 100 Hours

**Labels:** Brother P-touch Laminated Labels



Fade  
Resistant

Resistant to ultra violet exposure





Chemical  
Resistant



Water  
Resistant



## 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



Chemical  
Resistant



Water  
Resistant

Resistant to water and a wide  
range of industrial chemicals



## Stage 2 Water and Chemical Submersion 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

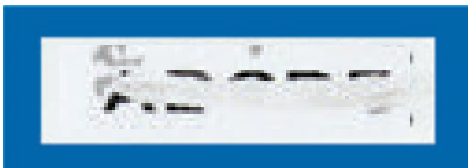
X = Print quality affected

### Labels after Testing

**Test:** Chemical Abrasion **Chemical:** Acetone



Brother P-Touch Laminated Label



Non-Laminated Competitor Label



Strong Adhesion

## 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.

### 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 TZe Tape              | 7.6             | 7.2   | 8.6  | 6.9     | 3.3           | 6.4                   |
| Extra Strong Adhesive TZe Tape | 10              | 10.1  | 11.5 | 11.5    | 7.4           | 11.5                  |

\*Results in Newtons for 12mm width tape



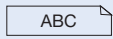






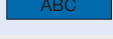

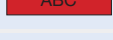
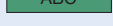
Strong Adhesion

Strong adhesive to a wide range of surfaces





# Get Organised With Labels That Stick

| Colour   | Description                       | 6mm     | 9mm     | 12mm    | 18mm    | 24mm    | 36mm    |
|--|-----------------------------------|---------|---------|---------|---------|---------|---------|
|    | Black on Clear Laminated          | TZe-111 | TZe-121 | TZe-131 | TZe-141 | TZe-151 | TZe-161 |
|    | Black on White Laminated          | TZe-211 | TZe-221 | TZe-231 | TZe-241 | TZe-251 | TZe-261 |
|    | Blue on White Laminated           | -       | TZe-223 | TZe-233 | TZe-243 | TZe-253 | TZe-263 |
|    | Red on White Laminated            | -       | TZe-222 | TZe-243 | TZe-242 | TZe-252 | TZe-262 |
|    | White on Black Laminated          | TZe-315 | TZe-325 | TZe-335 | TZe-345 | TZe-355 | -       |
|    | White on Blue Laminated           | -       | -       | TZe-535 | -       | TZe-555 | -       |
|    | Black on Yellow Laminated         | Tze-611 | Tze-621 | TZe-631 | Tze-641 | TZe-651 | Tze-661 |
|    | Black on Blue Laminated           | -       | Tze-521 | TZe-531 | Tze-541 | TZe-551 | Tze-561 |
|   | Blue on White Iron on Fabric Tape | -       | -       | TZe-FA3 | -       | -       | -       |
|  | Black on Red Laminated            | -       | Tze-421 | TZe-431 | Tze-441 | TZe-451 | Tze-461 |
|  | Black on Green Laminated          | -       | Tze-721 | TZe-731 | Tze-741 | TZe-751 | -       |

Note: The above tapes are 8 metres in length except for the fabric tape which is 3 metres in length



| Products |  |
|----------|--|
| 6mm      | PT-900, PT-1000, PT-1010, PT-1090, PT-H105, PT-1230PC, PT-1280, PT-1290, PT-D200, PT-1400, PT-1650, PT-7600, PT-1750, PT-1830, PT-1880, PT-2420PC, PT-2430PC, PT-9500PC, PT-9700PC, PT-9800PCN, PT-1950, PT-2300, PT-3600, PT-9600, PT-2100, PT-2700, PT-7100VP, PT-2030, PT-2730, PT-E100VP, PT-H300LI, PT-E300VP |
| 9mm      | PT-900, PT-1000, PT-1010, PT-1090, PT-H105, PT-1230PC, PT-1280, PT-1290, PT-D200, PT-1400, PT-1650, PT-7600, PT-1750, PT-1830, PT-1880, PT-2420PC, PT-2430PC, PT-9500PC, PT-9700PC, PT-9800PCN, PT-1950, PT-2300, PT-3600, PT-9600, PT-2100, PT-2700, PT-7100VP, PT-2030, PT-2730, PT-E100VP, PT-H300LI, PT-E300VP |
| 12mm     | PT-900, PT-1000, PT-1010, PT-1090, PT-H105, PT-1230PC, PT-1280, PT-1290, PT-D200, PT-1400, PT-1650, PT-7600, PT-1750, PT-1830, PT-1880, PT-2420PC, PT-2430PC, PT-9500PC, PT-9700PC, PT-9800PCN, PT-1950, PT-2300, PT-3600, PT-9600, PT-2100, PT-2700, PT-7100VP, PT-2030, PT-2730, PT-E100VP, PT-H300LI, PT-E300VP |
| 18mm     | PT-1400, PT-1650, PT-7600, PT-1750, PT-1830, PT-1880, PT-2420PC, PT-2430PC, PT-9500PC, PT-9700PC, PT-9800PCN, PT-1950, PT-2300, PT-3600, PT-9600, PT-2100, PT-2700, PT-7100VP, PT-2030, PT-2730  |
| 18mm     | PT-1400, PT-1650, PT-7600, PT-2420PC, PT-2430PC, PT-9500PC, PT-9700PC, PT-9800PCN, PT-1950, PT-2300, PT-3600, PT-9600, PT-2700, PT-2730  |

## Heat Shrink

|                             | 5.8mm   | 8.8mm   | 11.7mm  | 17.7mm  |
|-----------------------------|---------|---------|---------|---------|
| Heat Shrink Black on White* | HSE-211 | HSE-221 | HSE-231 | HSE-241 |

\*Compatible with PT-E300VP only



For more information, visit  
[www.brother.com.au/our-technology/electronic-labeller/labelling-tapes](http://www.brother.com.au/our-technology/electronic-labeller/labelling-tapes)








## Choosing The Right Tape

### 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.

|  |          |  | TZe Laminated Tapes | Strong Adhesive Tapes | Flexible Tapes | Security Tapes |
|--|----------|--|---------------------|-----------------------|----------------|----------------|
| Flat Surface<br>                                   | Smooth   |  | ●                   | ●                     | ●              | ●              |
|  | Textured |  | ✗                   | ●                     | ▲              | ✗              |
| Large Curved Surface (more than 8mm diameter)<br> | Smooth   |  | ▲                   | ●                     | ●              | ▲              |
|  | Textured |  | ✗                   | ●                     | ▲              | ✗              |
| Small Curved Surface (less than 8mm diameter)<br> | Smooth   |  | ✗                   | ✗                     | ●              | ✗              |
|  | Textured |  | ✗                   | ✗                     | ●              | ✗              |

- = Recommended
- ▲ = Acceptable
- ✗ = Not Recommended



Choosing The Right Tape

Choose the right tape for the job



## Frequently Asked Questions

### How thick are TZe tapes?

TZe 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 TZe-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 TZe tape?

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

### Do TZe tapes contain chloride?

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

### Do TZe tapes create any outgassing?

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.

### Can TZe tapes be submerged in alcohol?

Submersion of TZe 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 TZe tapes, it is of a very low level making it safe to burn TZe tapes.

### Do TZe 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.



Strong  
Adhesion

Strong adhesive to a wide  
range of surfaces



### **Do TZe tapes create static electricity?**

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

### **Do TZe tapes contain vinyl chloride?**

TZe laminated tapes contain very low levels of residual chlorine.

### **Which colour tape fades the least?**

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

### **Do TZe tapes contain latex?**

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

### **Does TZe tape contain lead?**

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

### **Can TZe tapes be used on circuit boards?**

We do not recommend that TZe 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 TZe tapes)

### **Can TZe tapes be used on copper?**

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

### **How long should security tape be attached before peeling off?**

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

#### **UL Certification**

A number of our TZe 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.



Abrasion  
Resistant

**Can withstand heavy abrasion**



# brother

at your side

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or email: [corporatesales@brother.com.au](mailto:corporatesales@brother.com.au)



Working with you for a better environment  
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