Labelcity .com.au

brother at your side

Technical Data

for TZe and HSe Tapes

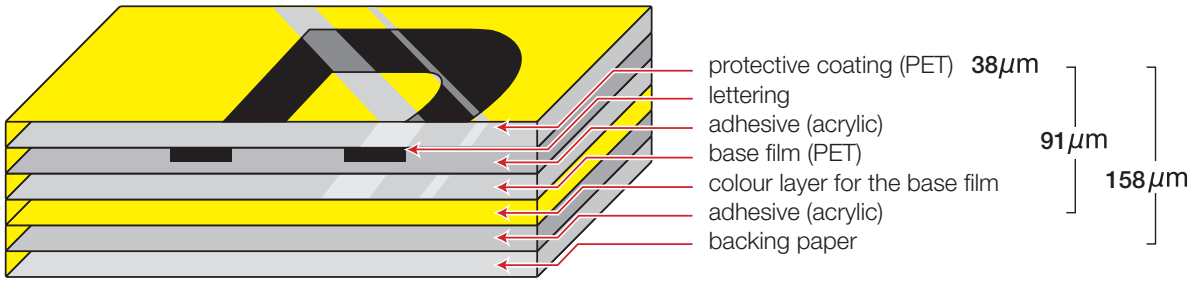
P-touch LABELS TESTED TO THE EXTREME

Laminated

Patented lamination provides an extra protective overcoat

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.

Abrasion
Resistant

Can withstand heavy abrasion

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	✓
Competitor non-laminated label	✗

✓ **= No effect on print quality**

✗ **= Print quality affected**

Brother P-Touch Laminated Label

Non-Laminated Competitor Label

Temperature Resistant

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

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 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 head 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

Fade Resistant

Resistant to Ultra Violet exposure

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.

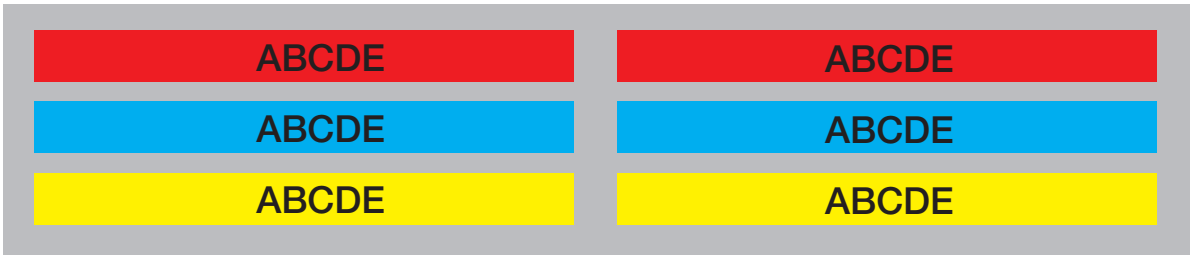
The Fade Test Procedure

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
Duration: 100 Hours
Temperature: 83°c
Labels: Brother P-touch Laminated Labels



Before Testing

After Testing

Chemical Resistant

Water Resistant

Resistant to water and a wide range of industrial chemicals

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

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 adhesive to a wide range of surfaces

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

Get Organised With Labels That Stick

Colour	Description	6mm	9mm	12mm	18mm	24mm	36mm
ABC	Black on Clear Laminated	TZe-111	TZe-121	TZe-131	TZe-141	TZe-151	TZe-161
ABC	Red on Clear Laminated	-	-	TZe-132	-	-	-
ABC	Blue on Clear Laminated	-	-	TZe-133	-	-	-
ABC	White on Clear Laminated	-	-	TZe-135	-	-	-
ABC	Black on White Laminated	TZe-211	TZe-221	TZe-231	TZe-241	TZe-251	TZe-261
ABC	Blue on White Laminated	-	TZe-223	TZe-233	TZe-243	TZe-253	TZe-263
ABC	Red on White Laminated	-	TZe-222	TZe-232	TZe-242	TZe-252	TZe-262
ABC	Gold on Black Laminated	-	-	TZe-334	TZe-344	TZe-354	-
ABC	White on Black Laminated	TZe-315	TZe-325	TZe-335	TZe-345	TZe-355	-
ABC	White on Blue Laminated	-	-	TZe-535	-	TZe-555	-
ABC	White on Red Laminated	-	-	TZe-435	-	-	-
ABC	Black on Yellow Laminated	TZe-611	TZe-621	TZe-631	TZe-641	TZe-651	TZe-661
ABC	Black on White - Flexible Laminated	TZe-FX211	TZe-FX221	TZe-FX231	TZe-FX241	TZe-FX251	TZe-FX261
ABC	Black on Yellow - Flexible Laminated	TZe-FX611	TZe-FX621	TZe-FX631	TZe-FX641	TZe-FX651	TZe-FX661
ABC	Black on Clear - Strong Adhesive Laminated	-	TZe-S121	TZe-S131	TZe-S141	TZe-S151	-
ABC	Black on White - Strong Adhesive Laminated	TZe-S211	TZe-S221	TZe-S231	TZe-S241	TZe-S251	TZe-S261
ABC	Black on Yellow - Strong Adhesive Laminated	-	TZe-S621	TZe-S631	TZe-S641	TZe-S651	TZe-S661
ABC	Black on Blue Laminated	-	TZe-521	TZe-531	TZe-541	TZe-551	TZe-561
ABC	Blue on White Iron on Fabric Tape	-	-	TZe-FA3	-	-	-
ABC	Black on Red Laminated	-	TZe-421	TZe-431	TZe-441	TZe-451	TZe-461
ABC	Black on Green Laminated	-	TZe-721	TZe-731	TZe-741	TZe-751	-

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

	Products
6mm	PT-1000, PT-1010, PT-1090BK, PT-1100, PT-1180, PT-1230PC, PT-1280, PT-1280DT, PT-1290, PT-1400, PT-1650, PT-1750, PT-1830, PT-1830SP, PT-1880, PT-1950, PT-2030, PT-2100, PT-2300, PT-2420PC, PT-2430PC, PT-2700, PT-2730, PT-3600, PT-7100VP, PT-7600, PT-900, PT-9500PC, PT-9600, PT-9700PC, PT-9800PCN, PT-D200, PT-D210, PT-D400, PT-D410, PT-D450, PT-D460BT, PT-D600, PT-D610BT, PT-D800W, PT-E100VP, PT-E110VP, PT-E300VP, PT-E550WVP, PT-H105, PT-H110, PT-H300Li, PT-P300BT, PT-P700, PT-P710BT, PT-P750W, PT-P900W, PT-P910BT, PT-P950NW
9mm 12mm	PT-1000, PT-1010, PT-1090BK, PT-1100, PT-1180, PT-1230PC, PT-1280, PT-1280DT, PT-1290, PT-1400, PT-1650, PT-1750, PT-1830, PT-1830SP, PT-1880, PT-1950, PT-2030, PT-2100, PT-2300, PT-2420PC, PT-2430PC, PT-2700, PT-2730, PT-3600, PT-7100VP, PT-7600, PT-900, PT-9500PC, PT-9600, PT-9700PC, PT-9800PCN, PT-D200, PT-D210, PT-D400, PT-D410, PT-D450, PT-D460BT, PT-D600, PT-D610BT, PT-D800W, PT-E100VP, PT-E110VP, PT-E300VP, PT-E550W-VP, PT-H105, PT-H110, PT-H300Li, PT-P300BT, PT-P700, PT-P710BT, PT-P750W, PT-P900W, PT-P910BT, PT-P950NW
18mm	PT-1400, PT-1650, PT-1750, PT-1830, PT-1830SP, PT-1880, PT-1950, PT-2030, PT-2100, PT-2300, PT-2420PC, PT-2430PC, PT-2700, PT-2730, PT-3600, PT-7600, PT-9500PC, PT-9600, PT-9700PC, PT-9800PCN, PT-D400, PT-D410, PT-D450, PT-D460BT, PT-D600, PT-D610BT, PT-D800W, PT-E300VP, PT-E550WVP, PT-H300Li, PT-P700, PT-P710BT, PT-P750W, PT-P900W, PT-P910BT, PT-P950NW
24mm	PT-1400, PT-1650, PT-2300, PT-2420PC, PT-2430PC, PT-2700, PT-2730, PT-3600, PT-7600, PT-9500PC, PT-9600, PT-9700PC, PT-9800PCN, PT-D600, PT-D610BT, PT-D800W, PT-E550WVP, PT-P700, PT-P710BT, PT-P750W, PT-P900W, PT-P910BT, PT-P950NW
36mm	PT-3600, PT-9500PC, PT-9600, PT-9700PC, PT-9800PCN, PT-D800W, PT-P900W, PT-P910BT, PT-P950NW

Heat Shrink

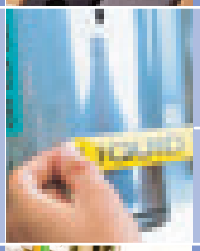
	6mm	9mm	12mm	24mm	36mm
Heat Shrink Black on White*	HSE-211E	HSE-221E	HSE-231E	HSE-251E	HSE-261E
Heat Shrink Black on Yellow*	HSE-611E	HSE-621E	HSE-631E	HSE-651E	HSE-661E

For more information, visit 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 ID Tapes	Security Tapes	Heat Shrink
Flat Surface 	Smooth	●	●	●	●	✕
	Textured	▲	●	▲	✕	✕
Curved Surface 	Smooth	▲	●	●	▲	✕
	Textured	▲	●	▲	✕	✕
Cable Flag 	Smooth	▲	▲	●	✕	✕
	Textured	▲	▲	●	✕	✕
Cable Wrap 	Smooth	▲	▲	●	✕	●*
	Textured	▲	▲	●	✕	●*

● = Recommended ▲ = Acceptable ✕ = Not Recommended

* Model Name	Width	Recommended Cable Diametre
HSe-211E/611E	6mm	Ø0.8mm to 3.1mm
HSe-221E/621E	9mm	Ø1.6mm to 5.4mm
HSe-231E//631E	12mm	Ø2.1mm to 7.0mm
HSe-251E//651E	24mm	Ø4.2mm to 13.5mm
HSe-261E/661E	36mm	Ø6.3mm to 20mm

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 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.

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.

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 chlorine?
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.