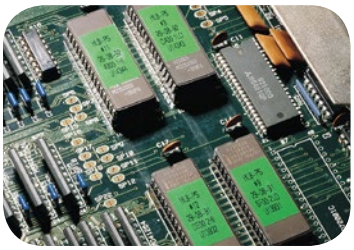
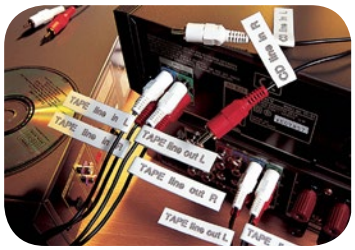
brother
at your side

Technical data for Brother TZe Tapes

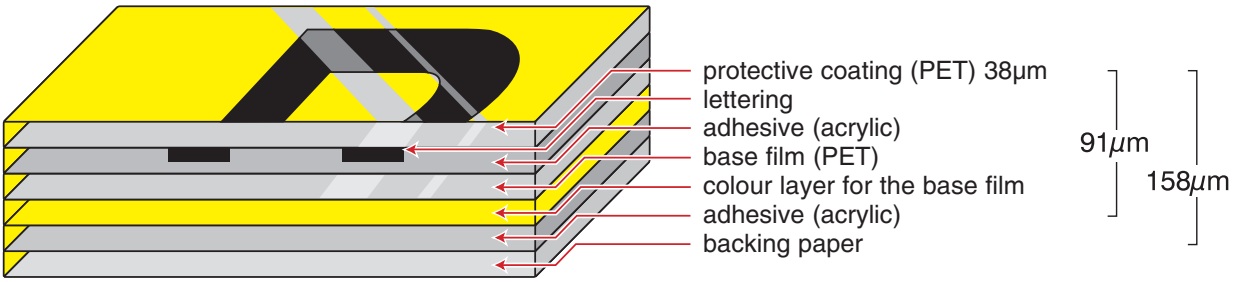




Laminated

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.

Patented lamination provides an extra protective overcoat.

P-touch LABELS TESTED TO THE EXTREME

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	✓
Competitor non-laminated label	✗

✓ **= No effect on print quality**

✗ **= Print quality affected**

Brother P-Touch Laminated Label

Non-Laminated Competitor Label

Abrasion Resistant

Can withstand heavy abrasion

P-touch LABELS TESTED TO THE EXTREME ✓

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°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

Temperature Resistant

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

P-touch LABELS TESTED TO THE EXTREME

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.

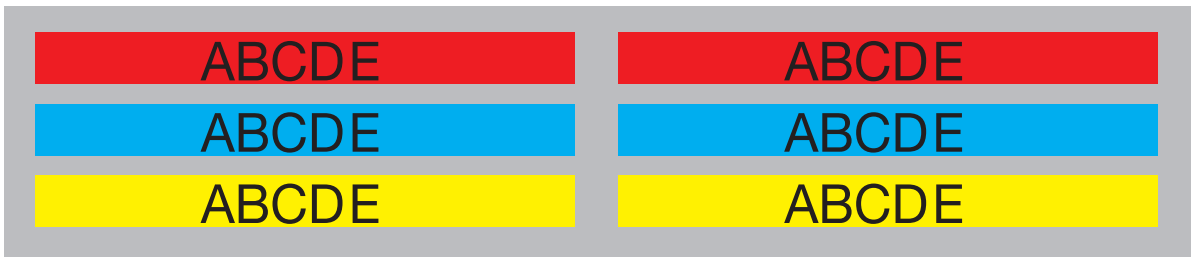
The Fade Test Procedure

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



Before Testing After Testing

Fade Resistant

Resistant to ultra violet exposure

P-touch LABELS TESTED TO THE EXTREME

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

P-touch LABELS TESTED TO THE EXTREME

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

P-touch LABELS TESTED TO THE EXTREME

TZe Tape Comparison Chart

Updated: 24 July 2017

3.5mm	6mm	9mm	12mm	18mm	24mm	36mm
Standard - 8 metres Laminated						
	TZe-111	TZe-121	TZe-131	TZe-141	TZe-151	TZe-161
			TZe-132		TZe-152	
			TZe-133	TZe-143		
			TZe-135			
	TZe-211	TZe-221	TZe-231	TZe-241	TZe-251	TZe-261
		TZe-222	TZe-232	TZe-242	TZe-252	TZe-262
		TZe-223	TZe-233	TZe-243	TZe-253	TZe-263
			TZe-334	TZe-344	TZe-354	
	TZe-315	TZe-325	TZe-335	TZe-345	TZe-355	
		TZe-421	TZe-431	TZe-441	TZe-451	TZe-461
			TZe-435			
		TZe-521	TZe-531	TZe-541	TZe-551	TZe-561
			TZe-535		TZe-555	
	TZe-611	TZe-621	TZe-631	TZe-641	TZe-651	TZe-661
		TZe-721	TZe-731	TZe-741	TZe-751	
Fluorescent - 5 metres Laminated						
			TZe-B31		TZe-B51	
			TZe-C31		TZe-C51	
Matt 8 metres Laminated						
			TZe-M31			
			TZe-M931	TZe-M941	TZe-M951	TZe-M961
Non-Laminated - 8 metres						
TZe-N201**						
Flexible ID - 8 metres Laminated						
	TZe-FX211	TZe-FX221	TZe-FX231	TZe-FX241	TZe-FX251	TZe-F261
	TZe-FX611	TZe-FX621	TZe-FX631	TZe-FX641	TZe-FX651	TZe-F661
Strong Adhesive - 8 metres Laminated						
	TZe-S211	TZe-S221	TZe-S231	TZe-S241	TZe-S251	
		TZe-S621	TZe-S631	TZe-S641	TZe-S651	TZe-S661
			TZe-S131	TZe-S141	TZe-S151	
Acid Free Adhesive - 8 metres Laminated						
			TZe-AF231			
			TZe-AF131			
Iron on Fabric - 3 metres						
			TZe-FA3			
			TZe-FAE3			
			TZe-FA53			
			TZe-FA63			
Tamper Evident - 8 metres Laminated						
				TZe-SE4	TZe-SE4	
Heat Shrink Tube - 1.5 metres‡						
	HSe-211	HSe-221	HSe-231	HSe-241	HSe-251	
Deco 5 metres / Pattern - 4 metres Laminated						
			TZe-MQL35#			
			TZe-MQP35#			
			TZe-MQ835#			
			TZe-MQ934#			
			TZe-MPGG31			
			TZe-MPSL31			
			TZe-MPRG31			
			TZe-MPPH31			
Ribbon - 4 metres non Laminated						
			TZe-R234			
			TZe-RE34			
			TZe-RN34			
			TZe-RW34			
Print Head cleaning cassette - approx 100 uses						
			TZe-CL3	TZe-CL4		TZe-CL6

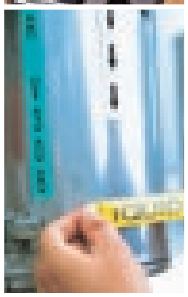
Actual tape colours may differ slightly from the printed colours. Brother TZe tapes are supplied in standard 8m lengths.
Exceptions are fluorescent (5m) , Heat Shrink (1.5m), Pattern/Ribbon (4m) and iron-on fabric tape (3m).
* Only for use with the PT-9500PC, ** Only for use with machines with 3.5mm tape capability
# 5 metre length tape † Recommended for PT-9700/9800,
‡ Only for use with the PT-D800W, PT-E300VP, PT-E550WVP, PT-P700, PT-P750W, PT-P900W, PT-P950NW

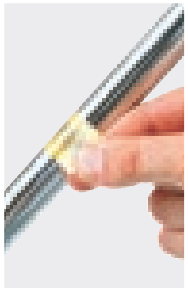
Choosing The Right Tape

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	Smooth	●	●	●	●
	Textured	✕	●	▲	✕
Large Curved Surface (more than 8mm diameter)	Smooth	▲	●	●	▲
	Textured	✕	●	▲	✕
Small Curved Surface (less than 8mm diameter)	Smooth	✕	✕	●	✕
	Textured	✕	✕	●	✕





● = Recommended

▲ = Acceptable

✕ = Not Recommended

P-touch LABELS TESTED TO THE EXTREME

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.

Strong Adhesion

Strong adhesive to a wide range of surfaces

P-touch LABELS TESTED TO THE EXTREME

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.

Abrasion Resistant

Can withstand heavy abrasion

P-touch LABELS TESTED TO THE EXTREME

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For more information regarding system requirements, please visit **http://solutions.brother.com**

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