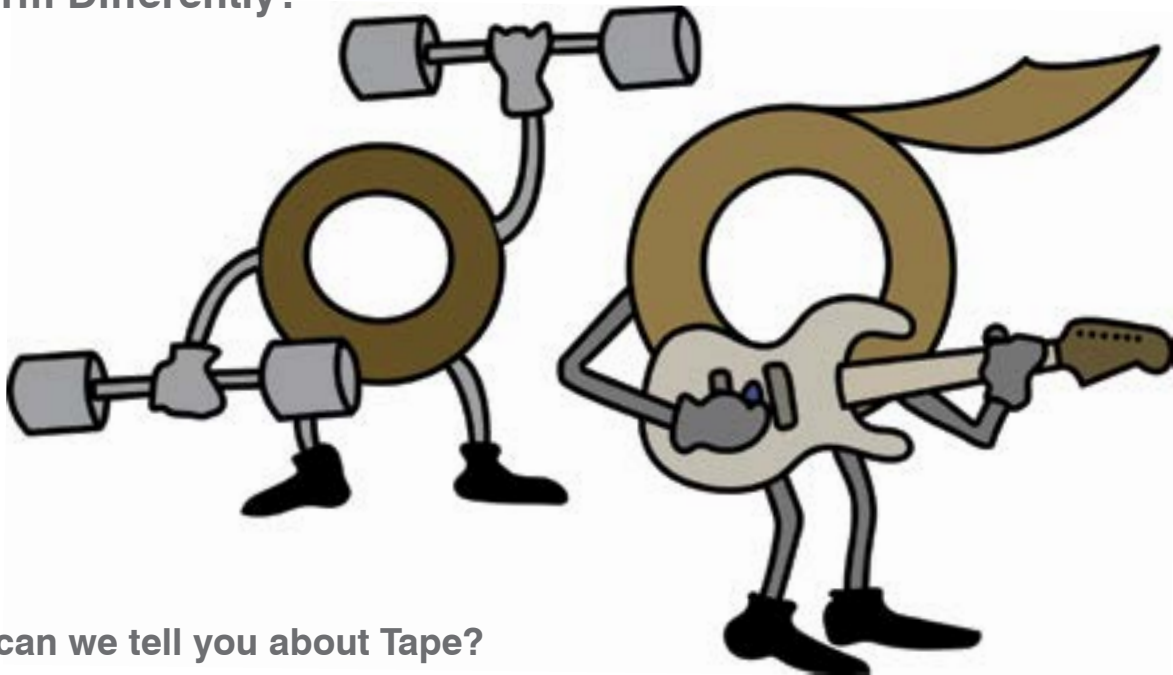


## How and why do Tapes Perform Differently?



### What can we tell you about Tape?

In this sequel of papers, we discuss the varieties of tapes used in the packaging industry, and how the manufacturing process can dictate how different types of tape perform.



We will also look in detail at the various pressure sensitive adhesives, their composition and structure, we will look at how the different adhesives cope with different surface polarities, and touch on the way adhesives are polymerised to give them the performance needed for different applications.

### Regulation and minimising VOC's

Packing tape is widely used and is manufactured all over the world. As we have become more aware of the importance of our environment, tape manufacture has been regulated, particularly where solvents are used, and complex solvent recovery systems are used to minimise the volatile organic compounds (VOC's) that escape into the atmosphere.

Water based emulsions are increasingly being used to apply acrylic polymer adhesives to tapes, this use of water as a suspension rather than solvents has reduced the potential for environmental harm through tape manufacture.





# An Introduction to Pressure Sensitive Tapes

## Where did it all begin?

In 1925 Richard Drew, a young engineer who worked for the Minnesota Mining and Manufacturing company (now known as 3M), invented Masking Tape to help auto-body painters detail cars without damaging existing paint jobs.



Richard Drew. The name should stick!!

In 1930 he invented Scotch® Cellulose Tape. He had to overcome many technical challenges before producing a commercially viable self-adhesive tape. Later to be renamed Cellophane Tape, it was an attractive, moisture-proof way for grocers and bakers to seal packages.

While self-adhesive tapes are used in many areas of our lives, and it appears to be a simple product consisting of a thin plastic material with a sticky surface, it is actually quite a complex product. Tape is produced in a huge variety of materials and for a massive range of applications.



In this sequel of papers, we discuss the varieties of tapes used in the packaging industry, and how they are made.



Hopefully this will help explain why some tapes appear to perform well, and some don't, and often this can lead to frustration and loss of parcel integrity and security, resulting in possible loss or damage.



# Three types of self-adhesive tape

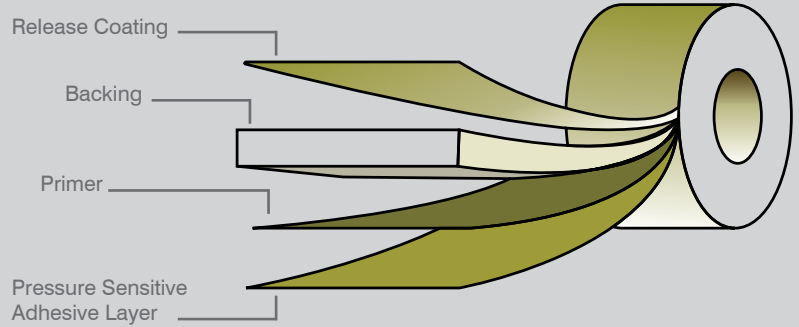
Here we describe the three basic types of self-adhesive tape.



## Single-sided Tape



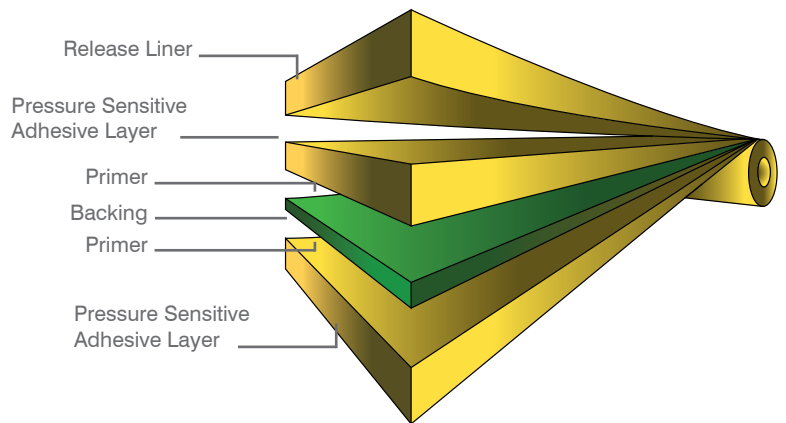
For single-sided tapes, the backing can be comprised of a variety of flat web-based materials, such as film, paper, foil, fabrics, or foam. In many instances, the backing is treated with a release coating to enable smooth unwinding, and with a primer to ensure that the adhesive sticks to the correct side of the tape.



## Double-sided Tape



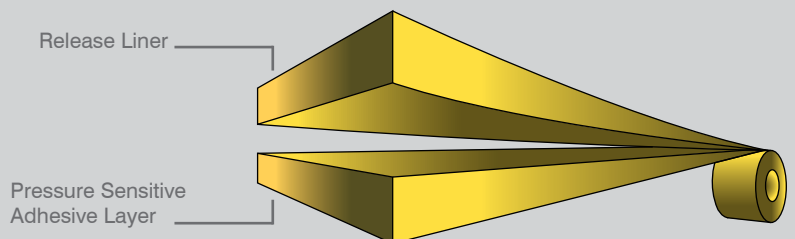
For double-sided tapes, the backing is coated with a pressure sensitive adhesive on both sides. The backing materials can be the same as any of those mentioned for single-sided tapes. A release liner is utilised to prevent the adhesives from sticking to themselves. The release liner is normally a silicone coated paper or film material.



## Transfer Tape



A transfer tape is considered a speciality product, as it does not have a backing material. The pressure sensitive adhesive is coated onto the release liner and wound onto a roll. A release liner is always part of the transfer tape construction. This leaves a coating of pressure sensitive adhesive on the surface which enable the two surfaces to be bonded.



## NEXT WEEK...

We start looking at the types of adhesives used on packing tapes and we will look at this in more depth in the weeks ahead.