Everything you ever wanted to know about TAPE

Definition – Just what is it?

Pressure-Sensitive Tape

In general - a continuous roll of a flexible material like polymeric film, foil, cloth or foam coated on one or both sides with a pressure sensitive adhesive (PSA), and capable of bonding to a substrate when light pressure is applied.

When the adhesive is coated on one side of a backing, a single-sided tape is created. When adhesives are applied to both sides of a carrier, the result is a double-sided tape.

Adhesive transfer tapes are a special class of double-sided tapes. They do not employ a backing material. The pressure sensitive adhesive is coated directly onto a release liner.

Basic Components

Pressure-Sensitive Adhesive (PSA)

A tacky and viscoelastic substance that adheres to a surface when light pressure is applied. PSAs do not require a chemical reaction to bond with a surface. Common classes of pressure sensitive adhesives used in manufacturing PSA tapes include rubber, acrylic and silicone.

Backing or Carrier:

A relatively thin, flexible material employed to carry the adhesive. Backings impart many of a tape's mechanical characteristics, as well as optimizing the fabrication and end-use properties. There are many types and combinations of backing materials. Plastic films, paper, cloth, scrims, foil, cloth and foam backings are common.

Release Liner:

Release liners are low surface energy films (commonly paper or polyester) designed to protect the pressure sensitive adhesive until just prior to application. Liners can provide additional mechanical support for handling and converting processes.

Tapes Can Be Used For:

- Insulation
- Masking
- Protection
- Sealing
- Shielding
- Thick Bonding
- Thin Bonding

Did you know...

"Ornithologists have used Scotch® Tape to cover cracks in fertilized soft shelled Pigeon eggs, allowing them to hatch!"

Some Tapes Are Optimized For:

- Clean Removability
- Electromagnetic Shielding
- High Visibility
- Low Outgassing
- Low Surface Energy
- Optical Clarity
- Structural Strength
- Surface Protection
- Thermal Management
- Vibration Damping

When Designing, Consider This:

- Bonding Surfaces
- Chemicals/Solvents
- Joint Design
- Moisture
- Performance
- Shock/Vibration
- Temperature Requirements
- Thermal Excursions or Cycling
- UV Exposure

Did you know...

The total amount of Scotch® Transparent Tape sold to homes and offices in the United States each year would go around the Earth 165 times!

Applying Tape

Tapes can be applied by hand or using a range of equipment, from manually operated tape guns to highly automated dispensing equipment.

1845 Pressure-sensitive tape makes its first appearance. Horace Day, a surgeon, uses a rubber adhesive applied to strips of fabric to make a new invention: surgical tape.

Converting

Consumers, services and manufacturers buy tape in many formats. Rolls are the most well-known. However, tapes that are configured to meet specific application requirements can significantly improve the productivity and usefulness of the material. Converters are companies that specialize in transforming enormous rolls of tape into more user-friendly formats like die-cut parts.

Hisco®

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