

CARTON SEALING AND CLOSING METHODS

This guide provides common terms, a brief description and information on the advantages, disadvantages and best uses for the most common sealing and closing methods. Use this guide to help determine the method that is best suited for your carton sealing needs.

Packaging Trade Associations

Institute of Packaging Professionals
www.iopp.org

National Paper Trade Alliance
www.gonpta.com

Packaging Machinery Manufacturers Institute
www.pmmi.org

Packaging Resources

USPS Mailing and Shipping Guidelines
www.usps.com/send/preparemailandpackages/preparingpackages.htm

Fed Ex Ground Packaging Guidelines
www.fedex.com/us/services/packageshipment/preparing/ground.html

UPS How to Prepare for Shipping
www.ups.com/content/us/en/resources/prepare/guidelines/prepare_package1.html

USPS Registered Mail Requirements (see DMM503.2.4.6)

<http://pe.usps.gov/text/dmm300/503.htm>

USPS Suspicious Mail Poster
www.usps.com/communications/news/security/suspiciousmail.htm

FDA Report on Combating Counterfeit Drugs
www.fda.gov/oc/initiatives/counterfeit/

FBI Jewelry and Gem Program
www.fbi.gov/hq/cid/jag/jagpage.htm



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ADVANTAGES AND DISADVANTAGES OF COMMON CARTON SEALING AND CLOSING METHODS

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PAPER WATER-ACTIVATED TAPE (WAT)

Made primarily of white or natural color (Kraft) paper and starch-based adhesive. Usually available in various widths and thicknesses. Might contain multiple layers with fiberglass reinforcement. When the adhesive is activated with water, it penetrates the carton material and the tape forms a permanent bond with the carton.

Common Terms

WAT, paper tape, reinforced tape, gum tape, gummed tape, reinforced gummed tape (RGT), non-asphaltic tape, Kraft (non-reinforced) tape

Advantages

- Provides tamper-evident seal
- Difficult to remove without leaving obvious signs of tampering
- Easy to print on
- Retains integrity if punctured
- Recyclable
- Can be used in dusty or dirty environments
- Maintains seal in extremes of cold, heat, light, humidity
- One strip produces a sturdy seal
- Carton can be reused or recycled

Disadvantages

- Requires water to activate
- Requires dispensing machine for application

Best Uses

- Cartons containing heavy items
- Individual or different sized cartons
- Contents requiring protection from tampering or pilferage (pharmaceuticals, expensive items, confidential documents, forensic evidence)
- Automated or semi-automated case sealing

PLASTIC PRESSURE-SENSITIVE TAPE (PST)

A surface mount form of tape with a dry adhesive applied to a film. Both film and adhesive are primarily petroleum products.

Common Terms

Plastic tape, PST

Advantages

- Portable
- Transparent

Disadvantages

- Made from non-renewable resources
- Not tamper-evident
- Noisy, “chatters” when rolled
- Quickly deteriorates when exposed to UV light, cold, heat, humidity
- Repetitive motion injury risk from hand guns
- Tape fails very rapidly when punctured or torn

Best Uses

- Lightweight cartons
- Low value products
- Cartons that will be palletized and shrink-wrapped
- Contents not requiring protection from tampering or pilferage
- High speed case sealing

GLUES

Adhesives that use polypropylene, which is flexible, soft but not pressure sensitive. Formulated to bond to a variety of substrates.

Common Terms

Hot, cold, and natural glues

Advantages

- Generally unaffected by cold, light or humidity extremes
- Adapts well to high-speed production packaging lines

Disadvantages

- Messy, high heat, fumes potentially harmful
- Leaking glue or high temperature may cause damage to product being packaged
- Significant equipment maintenance

Best Uses

- Heavy products on high-speed packaging lines where all cartons are of uniform size, such as canned goods or paint

STAPLES

Metal fasteners driven through the carton material by a device that also bends its two ends inward and flattens them so that they grip the material firmly.

Advantages

- Holds up under stress
- Tamper evident
- Strong, robust seal

Disadvantages

- Carton often destroyed when opened
- Difficult to open
- Potential injury to handlers
- Unacceptable for many shipping companies
- Requires additional corrugated liner or overlapped flaps
- Extra steps to process for recycling

Best Uses

- Very heavy items that will be shipped on pallet by truck or rail